Building People and Organizational Excellence

QMODY 2002 BUSAN CONFERENCE

Busan International Conference on Quality Management and Organizational Development

Busan, Korea
October 29(Tue.)~31(Thu.), 2002

FINAL PROGRAM

organized by
Busan Metropolitan City, Korea
Korean Standards Association
Linköping University, Sweden
Korean Society for Quality Management.

Supported by
Ministry of Industry, Commerce and Energy of Korea
International Academy for Quality
European Foundation for Quality Management
European Organization for Quality
Union of Japanese Scientists and Engineers
Conference Chair
Dr. Jens J. Dahlgaard, Prof. Linköping University, Sweden
E-mail: jenda@ikp.liu.se

Organizing Chairs
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Mr. Sang-Young Ahn, Mayor of Busan Metropolitan City, Korea
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Prof. Seung Gook Hwang
Prof. Jae Hyun Byun
INVITATION WORD

We invite you to participate in the 5th QMOD Conference, which this year is to be held in Busan, Korea.

The 1st QMOD conference was arranged in Zhengzhou in the Henan Province of China in 1997. After a successful start this unique conference there was a request to follow up with more conferences of the same kind. Hence the 2nd QMOD conference was organized in Slovenia in 1999. After that the conferences were arranged yearly – in the year 2000 Aarhus, Denmark, was the conference venue, and Linköping University, Sweden, arranged the 4th QMOD conference in 2001.

The aim of the QMOD conferences is to provide a unique international forum for exchanging knowledge on the multidisciplinary nature of research and practice of business issues related to Quality Management and Organizational Development. The Research Areas of interest under this theme are varied and are being tackled by specialists and practitioners in fields such as: Quality Management, Leadership, business strategy, economics, human resource management, learning and knowledge management, social & organizational psychology, supply chain management, and quality engineering.

The uniqueness of the conference is that the theme of the conference covers both the soft and the hard side of Quality Management and Organizational Development. People need tools to succeed with improvements and organizational development, and Quality Improvement Tools “need” people who understand the tools, but people need first of all a supporting and inspiring atmosphere where there basic needs (biological, mental and spiritual needs) are fulfilled. In this atmosphere people and organizations will grow together in a balanced way so that the satisfaction of the customers and stakeholder will be optimized.

During the 2 days’ presentations from those at the leading edge of the themes of the conference it is my sincere hope that we all will learn more so that we can contribute to the enhancement of our companies and societies.

Welcome to the QMOD 2002 Busan Conference

Jens J. Dahlgaard, Conference Chairman
Department of Mechanical Engineering
Division of Quality and Human Systems Engineering
Linköping University
Sweden
INVITATION WORD

It is very meaningful to hold the 2002 Busan International Conference on Quality Management and Organizational Development under the theme, "Building People and Organizational Excellence" in beautiful port city, Busan. And, with my whole heart, I welcome you, honorable special guests, speakers and participants from foreign countries and local industries and academia.

As you well know, it is said that quality management of the companies impacts on the national competitiveness. This means companies have to make efforts to be an excellent organizations with excellent management through organized introduction of new technology and new quality management techniques and utilization of them in various fields.

This conference is for experts and professionals in quality management and organizational development from academia and industries to present and discuss advanced quality management methods and successful cases. I hope it will be a catalyst for making breakthrough in utilization and upgrading of quality management activities.

With this 5th QMOD conference as a momentum, I believe that organizations and participants come to know about profound studies and excellent promotion cases of quality management, and exchange valuable and up-to-date quality information.

With still existing excitement of Korea/Japan 2002 FIFA World Cup which attracted enthusiastic public attention in June and 14th Asian Games which held in Busan in October with attention of about 4 billion Asian people including South and North Koreans, once again, I welcome your visit “City of Hope and Success”, Busan with my open arms. I believe this conference would be the good quality reference to the local industries, especially industries in Busan area.

Thank you.
October 29, 2002

Sang-Young Ahn

Mayor of Busan Metropolitan City, Korea
INVITATION WORD

Korean Standards Association is organizing the 2002 Busan Quality Management and Organizational Development Conference inviting about 100 specialists and practitioners as speakers from over the world in cooperation with Busan Metropolitan City, Linkoping University and Korean Society for Quality Management.

The principal aims of the conference are to explore momentum of new value creation in the new century as well as to build advanced quality management strategy and secure superiority of quality level in the world market through providing industries with various research and development papers and best practices.

The conference, celebrating the 5th anniversary this year, is the most unique specialized international forum where new knowledge and information are introduced and exchanged through presentation of papers and best practices on Quality Management and Organizational Development which is the most significant issues of the enterprises today. This year, the conference highlights the theme of Building People and Organizational Development.

Under this theme, various views in such broad areas related with quality management as leadership, business strategy, economics, human resources management, learning & knowledge management, social & organizational psychology, operations management and engineering are to be tackled and discussed by specialists and practitioner from over the world.

At the beginning of the century leading a new millennium, you are cordially invited to the conference held in Busan, a beautiful city of harbor.

Young -Sang Yoo
Chief Executive Officer
Korean Standards Association
INVITATION WORD

Welcome to all participant of QMOD 2002 BUSAN Conference and Korea Society Quality Management (KSQM) 2002 fall conference which are held in October 29th - 31st at BEXCO in Busan. This international Conference has been jointly organized with Busan Metropolitan City, Linkoping University Sweden, Korea Standard Association and KSQM. In the conference papers are presented in English and Korean. The conference thesis are “Building people and Organizational Excellence”. Field of people and organization are main topics of Quality Management.

To upgrade industrial competition, first of all, it is necessary to jointly research with field expert and academy. KSQM always try to make meetings and discussions with industrial experts and researchers from universities. We hope that all participants can find many interesting topics for useful communications.

I sincerely hope that this conference will be enjoyable, informative and fruitful for every participant, and will contribute to the development of quality management activities in all countries in the new millennium.

Thank you.
Hyung Wook KIM
President
Korean Society for Quality Management
**General Program**

**Monday, 28 October**

17:00~19:00: Registration

18:00~19:30: Welcome reception at BEXCO

**Tuesday, 29 October**

09:00 ~ 19:00: Registration

10:00 ~ 10:30: **Opening Ceremony**

10:30 ~ 10:45: Coffee Break

10:45 ~ 12:00: **Keynote Lectures**  
Chairman: H.G. Kim

1. Prof. Jens-Jörn Dahlgaard (Sweden): *Lean production, six sigma quality, TQM and company culture - A critical review*
2. Prof. S.H. Park (Korea): *Six Sigma for Quality Innovation: Experience of Korean Business Corporations*

12:00 ~ 13:30: Lunch

13:30 ~ 15:00: **Parallel Session 1 (1A – 1E)**

### Session 1A

**Quality Management 1**  
Chairman: Shu Yamada

- (2101, Italy) S. Barbaro, S. Costanzo & V. Franzitta: *Improvement of the environmental quality along the living and working spaces*
- (2102, Japan) Masahiro Imai & Takenori Takahashi: *A study on influence of technological advancements on globalization of quality control*
- (2120, Korea) Gi-Nam Wang: *Learning framework for master production schedule and demand prediction under uncertainty*
- (2150, Sweden) Su Mi Park Dahlgaard: *The changing premises of human motivation*
### Session 1B

**Quality Engineering I**  
**Chairman: J.H. Byun**

- (2071, India) U.H. Acharya, C. Mahesh & T. S. Rao: *Quality engineering of insulators: A holistic approach*
- (2129, Korea) J.H. Byun & K.P. Choi: *Fractional factorial designs with two-level and quantitative four-level factors*
- (2141, Korea) Dae-Heung Jang: *Graphical methods for evaluating the degree of the orthogonality of nearly orthogonal arrays*
- (2159, China) Sun Linyan, Zhang Tao & Sun Haihong: *A preference restraint DEA approach for supplier selection*
- (2134, Korea) Seong-Jun Kim: *An overview on some data-analytic approaches to Taguchi's robust design with dynamic quality characteristics*

### Session 1C

**Quality Management in Busan**  
**Chairman: D.J. Park**

- (2121, Korea) H.G. Kim, H.S. Jung, Y.H. Park, H.S. Nam, B.G. Lee & B.H. Kang: *Certification supporting project evaluation for small and medium sized companies in Busan*
- (2157, Korea) D.J. Park, H.G. Kim, H.S. Jung: *ISO 9000 implementation issue and recommendation for ISO 9000 registered Korean SMEs*

### Session 1D

**SPC and Optimization**  
**Chairman: H.M. Kwon**

- (2109, Korea) Hyuck-Moo Kwon: *Design of process control scheme based on the incomplete data under 100% inspection*
- (2117, Iran) R. Noorossana & A. Saghaei: *A combined neural networks -Time series modeling to detect and classify out-of-control signals in autocorrelated processes*
- (2119, Korea) Min-Koo Lee: *Optimum process mean for production process under quadratic quality loss*
- (2123, Korea) Ki Young Kim & Hyun-Seok Jung: *An optimal cost model for determining the quality levels of assembly-parts*
Session 1E
Organizational Development
Chairman: Bo Bergman

- (2073, Netherlands) Martijn Hesselink, Ton van der Wiele & Paul Boselie: *Longitudinal measurement in organizational transformation: A case of a Dutch flexcompany*
- (2074, Netherlands) Martijn Hesselink & Ton van der Wiele: *Mystery shopping: In-depth measurement of customer satisfaction*
- (2106, Denmark) Lars Grønholdt & Anne Martensen: *From people to profit: How loyal employees and customers improve the bottom line*
- (2081, Korea) Seungho Jung: *Decision-making and its contributing factors in five organizational structures*

15:00 ~ 15:30: Coffee Break

15:30 ~ 17:00: Parallel Session 2 (2A - 2D)

Session 2A
Reliability I
Chairman: Y.R. Chun

- (2104, France) Robert Dapère: *The Usinor’s TPM journey*
- (2122, Korea) Young-Rok Chun & Won-Young Yun: *A selection method of acceptance number of KS-C-6032: Failure rate test procedure*
- (2131, Korea) B.H. Yu, D.J. Kim & M.S. Cha: *A study on the irregular nesting problem using genetic algorithm and no fit polygon methodology*
- (2154, Korea) Myung Hwan Na & Sangyeol Lee: *Burn-in when minimal repair costs vary with time*

Session 2B
International Standardization (ISO 9000)
Chairman: Su Mi Dahlgaard Park

- (2095, Japan) Shu Yamada: *Costs and profits of ISO 9000 certification in Japanese manufactures*
- (2085, Sweden) Bozena Poksinska & Jörgen Eklund: *Reflections on important relationships between ISO 9000:2000 and organizational work setting*
- (2080, Denmark) Peter Neergaard: *Do you need an ISO 9000?*
- (2108, U.K.) Louise Boulter & Tony Bendell: *The recent changes to ISO 9000: The impact on the people*
Session 2C

Quality Management in Service Industry
Chairman: S.Y. Sohn

- (2072, Japan) Yoshiro Miyagi & Shinichi Okamoto: Research on customer satisfaction in the daycare industry
- (2082, Hungary) Katalin Molnár-Stadler: New approach to quality in Hungarian public education sector
- (2151, Korea) Young Guk Kwon & Hyun Jee Park: An evaluation of the safety management for lodging industry in Korea
- (2158, Korea) So Young Sohn & Tae Hee Moon: Structural equation model for predicting technology commercialization success index (TCSI)
- (2098, Korea) Y.S. Kim: Monitoring the service quality of Korean family restaurant by use of SSQ(Scope of Service Quality) model

Session 2D

Knowledge Management I
Chairman: Ton van der Wiele

- (2083, Sweden) Bo Zhu: Managing technology-driven by a customer-oriented way-strategic change in intelligent vehicle safety system (IVSS) development
- (2087, Sweden) Christina Mauléon & Bo Bergman: On the theory of knowledge and its importance in the quality movement
- (2092, Japan) Daisuke Shimakura, Kenji Tanaka & Makoto Itoh: A method for analyzing organizational accidents and planning countermeasures
- (2160, China) Wang Yunfeng, Li Jie & Xu Yong: An algorithm of estimating initial cluster center for fuzzy clustering

18:30 ~ 22:00: Conference Dinner at BEXCO

Wednesday, 30 October

09:00 ~ 10:30: Parallel Session 3 (3A - 3D)

Session 3A

Quality Management II
Chairman: W.S. Shin

- (2103, Japan) Kazutada Takeda: Considerations on "Management through trust and reliance"
- (2107, Denmark) Anne Martensen & Lars Grønholdt: A model of user satisfaction and loyalty in Danish libraries: A new strategic and benchmarking tool
(2146, Korea) Wan Seon Shin, Hyun Woo Ko & Seung Ok Yoon: *The current status of QM in Korea: A survey result*

(2153, Korea) Young-Taek Park & Seong-Dae Kim: *Application of TRIZ to inventory management*

### Session 3B

**Six Sigma and TQM**

Chairman: Youngdae Choi

- (2086, Sweden) Mandar Dabhilakar & Lars Bengtsson: *Towards excellence with Balanced Scorecard: Findings from a case study on continuous improvements in Sweden*
- (2118, Mexico) Humberto Cantú: *Is the PDCA cycle an obstacle for systems thinking in TQM award models?*
- (2137, Korea) Youngdae Choi, Charles Kim, Hyonsung Cho & Gyu-Weon Sim: *Six sigma project implementation and management by IT infrastructure*
- (2148, Japan) Hiroshi Ohta: *Human aspects of total quality management*

### Session 3C

**Kansei Engineering**

Chairman: Mitsuo Nagamachi

- (2110, Japan) Mitsuo Nagamachi: *Global extension of Kansei engineering/Kansei ergonomics*
- (2111, Japan) Tatsuo Nishino & Mitsuo Nagamachi: *Rough approximation for discovering Kansei design rules: Application to color Kansei design*
- (2112, Japan) Shigekazu Ishihara, Keiko Ishihara & Mitsuo Nagamachi: *New analyzing method of individual differences of Kansei evaluation based on cluster analysis - Beer can design study*
- (2113, Sweden) Marc Antoni & Simon Schütte: *Learning from product development with Kansei engineering*
Session 3D

Knowledge Management II
Chairman: Atsushi Nishiura

- (2076, Germany) Petra Winzer: Integration of knowledge and quality management via enterprise modeling
- (2096, Japan) Atsushi Nishiura, Takenori Takahashi & Aizan Hirai: An application of drama analysis to organizational accidents
- (2097, Japan) Michiyo Matsui, Masahiro Imai & Takenori Takahashi: A Study on an acquirement of knowledge about a design product from failures
- (2161, China) Li Congdong & Zhang Hongliang: Study of integrated cost management model based on the feedforward cost control

10:30 ~ 11:00: Coffee Break
11:00 ~ 12:00: Plenary Lectures Chairman: Jens-Jörn Dahlgaard

1. Prof. Kondo (Japan): Customer satisfaction - Way to business excellence-
2. Prof. Vinod Singhal (America): The effect of total quality management (TQM) on corporate performance

12:00 ~ 13:30: Lunch

13:30 ~ 15:00: Parallel Session 4 (4A - 4D)

Session 4A

Reliability II Chairman: W. Jung

- (2133, Korea) Chung Hyeon Choi, Dong Hoon Lee, Chan Soo Kim & Gil Hwan Heo: Prediction of maintenance cycles in undersea surveillance system with fixed array sonar
- (2142, Korea) Won Jung & Iksung Lim: Reliability deployment for product safety
- (2143, Korea) Won Young Yun, Jong Woon Kim, Seung Hyun Cho & Jong Su Kim: Estimation of failure intensity and maintenance effects with different maintenance effects system
- (2144, Korea) Won Young Yun, Gue Rae Kim & Cheol Hun Jung: A maintenance design of connected-(r,x)-out-of-(n,m): F system using GA
Session 4B

Quality Engineering II
Chairman: Yasufumi Kume

- (2094, Japan) Hitomi Imaichi & Takenori Takahashi: *Analytical method of evaluation by binomial data on marketing research-improvement of conjoint analysis*
- (2127, Korea) Kwang-Jae Kim, Jai-Hyun Byun, Daekee Min & In-Jun Jeong: *Multiresponse surface optimization: Concept, methods, and future directions*
- (2130, Japan) Yasufumi Kume, Chung-Yong Liu & Amane Togano: *System for cusp surface analysis and its application*
- (2138, Korea) Young Jin Kim & Byung Rae Cho: *Response surface approach to integrated optimization modeling for parameter and tolerance design*

Session 4C

SQC (QFD, QIS, etc.)
Chairman: C.W. Kang

- (2084, Slovenia) Aleš Nemec: *Performance measurement in the operational production unit*
- (2114, Korea) Gue Rae Kim, Dong Hyuk Shim, Jeong Hoon Seo & Si Heon Kim: *Automobile modular part design innovation system: An integration of QFD with FMEA*
- (2135, Korea) H.J. Yun & D.S. Bai: *Inspection effort allocation for products with multi-step inspection*
- (2139, Korea) Chang W. Kang, Sung B. Sim, Jae H. Lee & Bae J. Lee: *Development of user-friendly SPC software and its contribution*

Session 4D

Service & Project Management
Chairman: Y.K. Kwon

- (2155, Korea) Jangsang Choi: *A conceptual design of production scheduling procedures to improve delivery quality and productivity*
- (2156, Korea) Sangbok Ree: *Logistic performance measure cubic model in logistic industry*
- (2132, Korea) Heung-Suk Hwang: *A project risk analysis model for quality management of project evaluation using network simulation*
- (2152, Korea) Young-Guk Kwon & Sang-Kyu Park: *Ergonomic design for copy-machine*
- (2162, China) Gao Linqi & Li Longzhu: *The unobtrusive customer survey method based on multi-agent system applied in electronic commerce*
15:00 ~ 15:30: Coffee Break

15:30 ~ 18:00: **Closing Session**  Chairman: Jens-Jörn Dahlgaard & S.K. Seo

1. Prof. Tony Bendell (England): *Stakeholders and Six Sigma*
2. Prof. Bo Bergman (Sweden): *The Human Dimension - a Critical Success Factor in Six Sigma Quality*

**Thursday, 31 October**

08:30 ~ 11:30: **Industrial visit to Hyundai Motors**

12:00 ~ 13:30: Lunch

13:30 ~ 14:30: Industrial visit to LG Chem Ltd

16:00  **Arrival at Chosun Beach hotel**
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**Conference Master Track Schedule**

- **Session A**: Technical Sessions (Room 207)
- **Session B**: Keynote Lecture (Room 209)
- **Session C**: Break
- **Session D**: Keynote Lecture (Room 303)
- **Session E**: Break
- **Session F**: General Session (Room 303)
- **Session G**: Break

**Conference Tracks**

- Technical Sessions
- Keynote Lectures
- General Sessions

**Time Periods**

- 09:00 - 19:00
- 19:00 - 21:00
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### Industrial to Holistic Views

#### Closing Session (Chairman: John Danielson & SK Seo)

**Coffee Break**

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### Plenary Lectures (Chairman: Jeroen Dijkstra)

**Coffee Break**

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Registration, Hotel Reservation, Payment and Information:

Secretariat of QMOD 2002 Busan Conference
Prof. Won Young Yun
Pusan National University
Busan, 609-735, Korea
Phone: 82-51-510-2421, Fax: 82-51-512-7603
E-mail: wonyun@pusan.ac.kr
Hotel Homepage: http://www.chosunbeach.co.kr

Official Languages
English (Simultaneous translation in special sessions will be provided)

Secretariat
Secretariat of QMOD 2002 Busan Conference
Prof. Won Young Yun
Pusan National University
Busan, 609-735, Korea
Phone: 82-51-510-2421, Fax: 82-51-512-7603
E-mail: wonyun@pusan.ac.kr

QMOD 2002 Busan Conference
October 29 - 31, 2002
Busan, Korea
Busan Metropolitan City

Busan, located in the southeast of Korea, is the second largest city in Korea with a population of four million. The streets of Busan are alive and vibrant. It is the number one port for business in Korea, as well as the southern passenger gateway. It has served as a commercial port and a cultural center since the Three Kingdoms Period (57 B.C.-A.D. 668). Since its port was opened to foreign nations in 1876, Busan has served as a bridgehead for Korea's international trade, and is currently involved in the exporting of textiles, automobiles and steel. The city not only is a shopper's paradise and a seafood lover's mecca but also has many tourist attractions such as scenic beaches, spacious parks and serene temples, as well as a host of complete recreational facilities for the avid traveler.

The 14th Asian Games will be held in Busan September 29 to October 14, 2002. The Busan citizens are exerting great efforts in preparation for the Games. The ideal of the Asian Games is to represent the eternal unity and peace among the Asian people. Fortunately, the success of the ‘88 Seoul Olympic Games provides us with a lot of useful experiences in hosting a big international games. The 2002 Busan Asian Games is expected to be enormously successful The Games will promote the Olympic ideal of seeking a more peaceful and prosperous society and will promote the Olympic spirit of "Citus, Altius, Fortius" as well.
**Conference Venue**
Busan Exhibition & Convention Center  
612-021 Woo 1-dong, Haeundae-gu,  
Busan, Korea  
Tel: 82-51-747-2311  
Fax: 82-51-747-2320  
http://bexco.co.kr

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**CONFERENCE ORGANIZERS**

**Busan Metropolitan City, Korea**  
1000, Yonsan 5-dong, Yonje-Gu, Busan, Korea  
c/o Industry and Technology Division  
Tel: 82-51-888-3171  Fax: 82-51-888-3159  
http://www.metro.busan.kr

**Korean Standards Association**  
13-31, Yoido-dong, Youngdongpo-gu, Seoul 150-010, Korea  
Tel: 82-2-369-8171 ~ 3  Fax: 82-2-780-3340  
http://www.ksa.or.kr

**Linköping University, Sweden**  
c/o Department of Management and Economics  
Department of Mechanical Engineering.  
SE-581 83 Linköping, Sweden  
Tel: 46 13 28 10 00  Fax: 46 13 14 94 03  
http://www.liu.se

**Korean Society for Quality Management**  
13-31, Yoido-dong, Youngdongpo-gu, Seoul 150-010, Korea  
Tel: 82-2-369-7106  Fax: 82-2-369-7107  
http://www.ksqm.org