ANQ CONGRESS 2012 HONG KONG

31 July - 3 August 2012

PROGRAM BOOK

STRIVING FOR EXCELLENCE THROUGH PRODUCT AND SERVICE QUALITY

優化品質　邁向卓越

Organizer:

Co-Hosts:

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Editorial Team
Dr. Andy T. C. WONG
Dr. Kwai-Sang CHIN
Mr. Michael Mai XU

Theme of ANQ Congress 2012 Hong Kong

"Striving for Excellence through Product and Service Quality"

"優化品質、邁向卓越"

Quality is multidimensional and it is a main driver of competitive differentiation among various types of organizations in Asia and around the world. Managing product and service quality involves a wide range of activities that span from the time when a new idea for a product/service was created to the stage of providing ongoing support and making contributions to improvement of human life. Product and service quality, stakeholder satisfaction, profitability and sustainable prosperity are intimately connected.

The complete “product/service offering” is what customers look for and evaluate, as stated in the ANQ Way. When an organization gets things right, it will be successful at every level of its operations. When things go wrong, it will have disastrous consequences to the bottom line, and more importantly the organization and brand image will suffer too. Thus, striving for excellence through product and service quality has become a strategic issue in Asian economies for this decade.

ANQ Congress 2012 Hong Kong will bring together quality professionals and academicians from the Asian region and beyond to showcase best practices and successes, and share philosophies, theories, methodologies and applications of proven tools in fostering the ANQ Way and the “Power” of product and service quality.

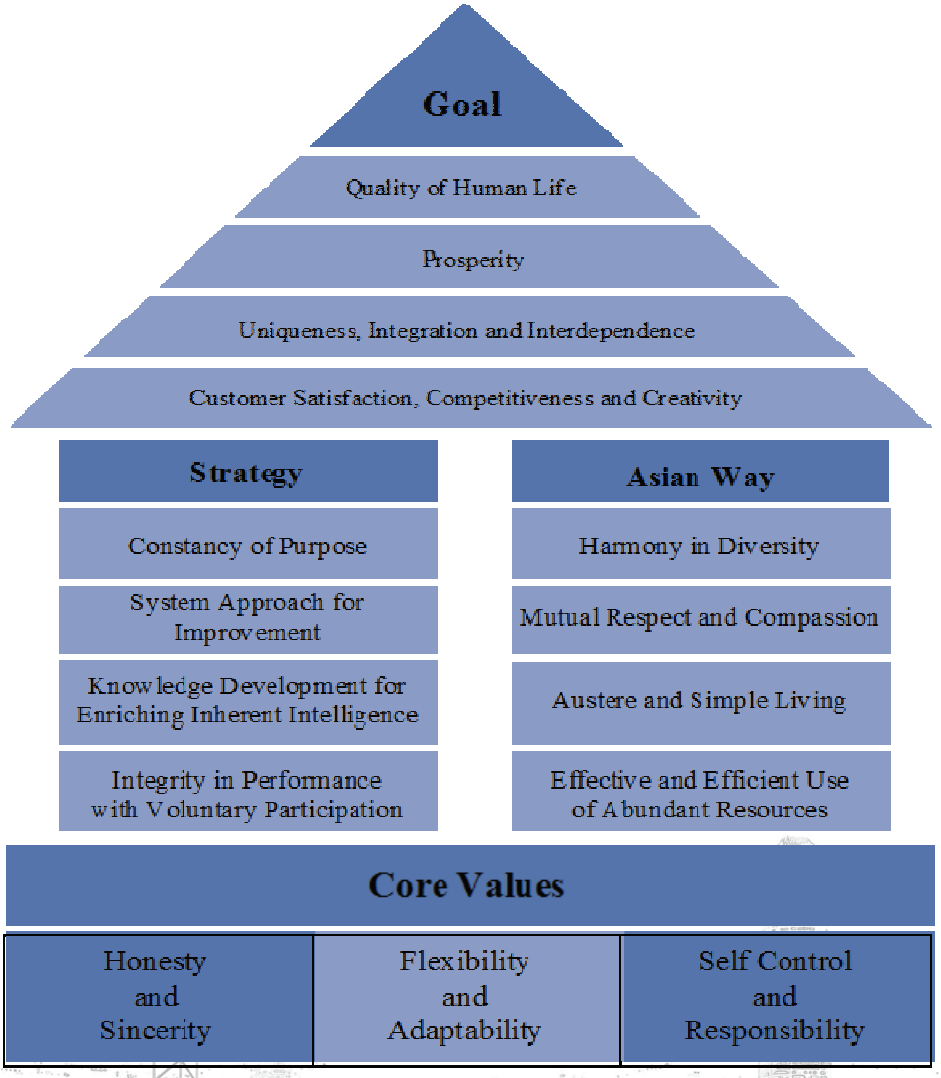
The Congress program will consist of keynote speeches, presentations of contributed papers and poster sessions. Papers addressing quality issues in the following areas are particularly welcome:

1. Services
2. Manufacturing
3. Testing and Certification
4. Healthcare
5. Environment
6. Education
7. Organizational Learning and Knowledge Management
8. Social and Public Sectors, Not-for-profit Organizations
9. Corporate Social Responsibility
10. Information and Communication Technology
11. Governance, Risk Management and Compliance
12. Others: Quality Management, Process Management, Performance Measurement, Best Practices, Innovation, Sustainable Development, Human Resource Management, Supply/ Value Chain Management, Reliability, Physical Asset Management, etc.

優質產品與服務、助你邁向卓越路

Asian Network for Quality (ANQ) consisting of all non-profit organizations in Asia that seek to improve quality of human life by contributing to the progress of science and technology; and to the development of industry through promotional activities for the research and development of philosophy, theory, methodology and application in the field of quality and quality management. ANQ provides a platform and the opportunity for enhanced mutual sharing and learning of the knowledge and experiences obtained through the research and development and practices in quality performed by the member organizations.

The ANQ Way



www.hksq.org

WorldPartner of American Society for Quality (ASQ)
Founding member of Asian Network for Quality (ANQ)

Competition in the world market today depends first and foremost on quality. Hong Kong companies must maintain momentum in improving their quality and satisfying the changing needs of customers.

The Predecessor of Hong Kong Society for Quality, formed in 1986, was the Hong Kong Group of the American Society for Quality Control (ASQC) International Chapter. It was renamed as Hong Kong Society for Quality Control (HKSQC) in 1989 to reflect increasing local involvement. The Society maintains its affiliation with ASQC (subsequently renamed as American Society for Quality, i.e., ASQ) after the name change. In 1997, HKSQC was renamed as Hong Kong Society for Quality (HKSQ).

The Society is a not-for-profit organization established to promote greater awareness of the need for quality in Hong Kong for ensuring product and service excellence through continuous improvement of quality and customer satisfaction, and to provide continuing education to professionals involved in the quality and reliability disciplines.

Being a leading quality management authority in Hong Kong and having a long and well-established relationship with ASQ, HKSQ has been recognized as a WorldPartner of the American Society for Quality (ASQ) since 2002. The status granted by ASQ, a world renowned professional organization in the quality discipline with a more-than-65-year history, is a fitting recognition that the contributions made by HKQ in promoting quality is on a par with other world-class organizations of its kind.

HKSQ is also a founding member of the Asian Network for Quality (ANQ). ANQ was established in 2002 with the objectives of promoting quality for prosperity and integration in Asian countries. Member organizations of ANQ are non-profit organizations in Asia established to improve quality in human life by contributing to the progress of science and technology, and to the development of industry through promotional activities in quality and quality management.

Greetings from Chairperson of ANQ

On behalf of Asian Network for Quality (ANQ) I am pleased to extend my warmest greetings to everyone attending the 2012 ANQ Congress in Hong Kong – the Beautiful Pearl of the East.

The theme of the Congress is "Striving for Excellence Through Product and Service Quality". Since its establishment in 2002, the annual Congress of ANQ has become an effective platform for networking among quality peers from Asia and the world as whole.

Until now, the connotation of quality has extended far beyond the scope of product manufacturing, covering various aspects including service, healthcare and education. I am very happy that we will meet excellent businesses, entrepreneurs and quality experts who will share their latest research findings and best practices. I sincerely hope all quality professionals and practitioners from different countries and regions will take the unsurpassed opportunity and focus on the above subject and discuss how to achieve excellence in both our life and work by using quality disciplines, approaches and tools.

In addition, on behalf of Chair Organization of ANQ, China Association for Quality, I highly appreciate the staffs of Hong Kong Society for Quality for their hard work in bringing the outstanding program, as well as the Board of Directors and Secretariat of ANQ for their guidance and support in making the Congress successful.

I offer you my best wishes for a most enjoyable and productive meeting.

Qi Weiming
Chairperson of Asian Network for Quality
VP & Secretary General of China Association for Quality

Welcome to ANQ Congress 2012 Hong Kong

On behalf of Hong Kong Society for Quality (HKSQ), I sincerely extend a warm welcome to all participants of the ANQ Congress to be held in Hong Kong during the period from 31 July to 3 August 2012. In collaboration with China Association for Quality (CAQ) and The Hong Kong University of Science and Technology (HKUST), HKSQ is honored to host this Congress, and we will do our utmost to make this international event successful.

Hong Kong and China are in a prime position to organize ANQ Congress because this part of the world has focused on quality development and we have a lot of experience to share. In the Asia Pacific region, Hong Kong and China in particular, governments now recognize that proper management of quality in both product and service is vital to sustainable development.

This 2-day Congress and half-day technical visit will focus on different areas of quality research and implementation such as Service, Manufacturing, Testing and Certification, Healthcare, Environment, Education, etc.

ANQ Congress provides a unique platform for Asian Quality Professionals to discuss the changing demand and new directions for quality development. The Congress further highlights recent advances in research of quality concepts, management and implementation in different industries.

I would like to express my deepest gratitude to the contribution made by CAQ and HKUST, all sponsors and all supporting organizations for their generous sponsorships and support.

Finally, I must heartily thank members of the Congress Program and Organizing Committees, who have contributed in many different ways to ensure smooth running of the Congress.

Lotto Lai
Chairman, Hong Kong Society for Quality

Welcome from HKUST

On behalf of the Hong Kong University of Science and Technology, I would like to extend a very warm welcome to all of you who are attending the 2012 Asian Network for Quality Congress.

The Hong Kong University of Science and Technology is a leading research university established in 1991. In 2011 and some twenty years after its founding, HKUST ranked the best university in Asia according to QS Rankings. In 2012, HKUST again was ranked number 1 for the second year in a row. It is truly a privilege to work in such a dynamic and innovative environment.

We are also extremely fortunate to be located in an area of outstanding natural beauty on the Clear Water Bay peninsula, less than 30 minutes' driving time from central, Hong Kong.

Meanwhile, our Industrial Engineering and Logistics Management department celebrates its 20th anniversary in 2013 and during that time has grown in both numbers and sphere of influence, and achieved both global excellence and significant local impact. One major education and research focus of our department is indeed Quality Engineering and Management. Because of the economic focus of this region (especially Hong Kong), we particularly emphasize service quality excellence that includes logistics service, financial service, and service design. Those areas fit well with the theme of the Congress which is "Striving for Excellence through Product and Service Quality".

I hope that all of you not only enjoy mutual professional exchange of ideas with other specialists in your area but also take time to appreciate the wonderful natural scenery of the Clearwater Bay area where our university is situated.

Fugee Tsung
Professor and Head, Dept. of Industrial Eng & Logistics Mgt
HK University of Science & Technology

Congratulations
to
China Association for Quality (CAQ),
Hong Kong Society for Quality (HKSQ) and
The Hong Kong University of Science and Technology (HKUST)

on hosting

The Asian Network for Quality (ANQ) Congress 2012
Hong Kong

We wish the Congress a great success and thank you for your continuous commitment in promoting product and service quality.

John Hung
Secretary-General
Hong Kong Council for Testing and Certification

Committees

- Congress Committee
- Organizing Committee
- Program Committee
- ARE-QP Committee

Congress Committee

Designation	Name	Organization
General Co-Chairs	Mr. Qi Weiming	CAQ
	Dr. Lotto Lai	HKSQ
	Prof. Fugee Tsung	HKUST

Organizing Committee

Designation	Name	Organization
Chairman	Dr. Albert H.C. Tsang	HKSQ
Secretary	Ms. Minda Chiang	HKSQ
Members	Dr. Richard Cheung	HKSQ
	Dr. K.S. Chin	HKSQ
	Ms. Sandy Choi	HKUST
	Mr. C.P. Chow	HKSQ
	Mr. Peter Fung	HKSQ
	Mr. Humphrey Lee	HKSQ
	Mr. Tian Tongkun	CAQ
	Ms. Angela Wong	HKSQ

Program Committee

Designation	Name	Organization
Chairman	Dr. Kwai-Sang Chin	HKSQ
Members	Mr. Jugal K. Bajaj	ANQ
	Dr. Richard Y H Cheung	HKSQ
	Mr. Peter Fung	HKSQ
	Mr. Humphrey Lee	HKSQ
	Mr. Li Wencheng	CAQ
	Dr. Kit-Fai Pun	HKSQ
	Dr. Andy T C Wong	HKSQ
	Dr. Ken H K Yau	HKSQ

ANQ Member Organizations		
Country/Region	**Name**	**Organization**
Bangladesh	Brig Mofizur Rahman	BSTQM
	Hasan Mahmud	BSTQM
China	Mr. Qi Weiming	CAQ
	Mr. Li Wencheng	CAQ
Chinese - Taipei	Prof. Ching-Chow Yang	CSQ
	Prof. Iuan-Yuan Lu	CSQ
	Prof. Hsin-Hung Wu	CSQ
Dubai	Samia Al Yousuf	DQG
	Femina Moideen	DQG
Hong Kong	Dr. Kwai-Sang Chin	HKSQ
	Dr. Lotto K H Lai	HKSQ
Kazakhstan	Prof. Azat Abdrakhmanov	IAQMA
	Mr. Alexey	IAQMA
India	Dr. Anil K Srivastava	ISQ
	Mr. Anil Sachdev	ISQ
Indonesia	Mr. Ir. Idaris D. Simorangkir. MIE.	IQMA
	Mrs Ign. Rini Wiyanti Paasaribu	IQMA
Japan	Dr. Shu Yamada	JSQC
	Dr. Tomomichi Suzuki	JSQC
Korea	Prof. Sang Chan Park	KSQM
	Prof. Hee-Jun Park	KSQM
Pakistan	Syed Munawar Shah	QPSP
	Imran Ahmad Rana	QPSP
Russia	Dr. Gennady Voronin	ROQ
	Dr. Yury Gosakov	ROQ
Thailand	Prof. Phulporn Saengbangpla	SQAT
	Dr. Jittra Rukijkanpanich	SQAT
	Mr. Pattanachai Kulasirisawad	SQAT
Singapore	Mr Kenneth Liang Wai Yin	SQI
	Mr Kitson Lee	SQI
Vietnam	Dr. Ngo Van Nhon	VQAH
	Prof. Dr. Vo Phuoc Tan	VQAH
	Dr. Ngo Phuc Hanh	VQAH
New Zealand	Dr Nigel Grigg	NZOQ
	Ms.Helen Baines	NZOQ

ARE-QP Committee

Designation	Name	Organization
Chair	Prof. Shu Yamada	JSQC

General Information

General Information

a. Transportation

i) Shuttle Bus Service

Shuttle bus service between the listed hotels and the conference venue is provided by the Congress organizer as follows.

To the ANQ Congress Venue (HKUST - The Hong Kong University of Science and Technology)

From:

1. "The Salisbury " - YMCA Hotel
2. B P International Hotel
3. Park Hotel
4. Ramada Kowloon Hotel

Free Shuttle Bus Service will depart from each of the above hotels at **7:40am** on **1st August and 2nd August**.

Back to Hotels from the ANQ Congress Venue (HKUST - The Hong Kong University of Science and Technology)

To:

1. "The Salisbury " - YMCA Hotel
2. B P International Hotel
3. Park Hotel
4. Ramada Kowloon Hotel

Free Shuttle Bus Service will depart from HKUST at **5:40pm** on **1st August and 2nd August**. Participants staying at other hotels can take the shuttle bus to "The Salisbury" - YMCA Hotel.

Technical Visits - 3rd August 2012

To:

1. MTR Corporation
2. The Hong Kong & China Gas Company Limited (Towngas)
3. Hong Kong Science & Technology Parks
4. Water Supplies Department, Government of the HKSAR

All Shuttle Buses for the visits will leave at **8:40am** on **3rd August 2012** from "The Salisbury" - YMCA Hotel.

There will be no coach service from other hotels.

Post-ANQ Event - 3rd August 2012

IAQ/ANQ Symposium 2012
New Challenges: Quality and Sustainability in Education of Asia Pacific

Date: 3rd August, 2012

Time: 8:45 - 12:30

Venue: Lecture Theatre no. 9 (LT-9), Academic Building I
City University of Hong Kong
Kowloon Tong, Kowloon, Hong Kong

The Shuttle Bus will leave at **8:15am** on **3rd August 2012** from "The Salisbury" - YMCA Hotel. There is no service for the return.

There will be no coach service from other hotels.

ii) Public Transportation

Public transportation is convenient in getting to and from HKUST by taxi, the MTR metro, or bus.

By Taxi

It costs around HK$120 - HK$150 from hotels in Kowloon to HKUST.

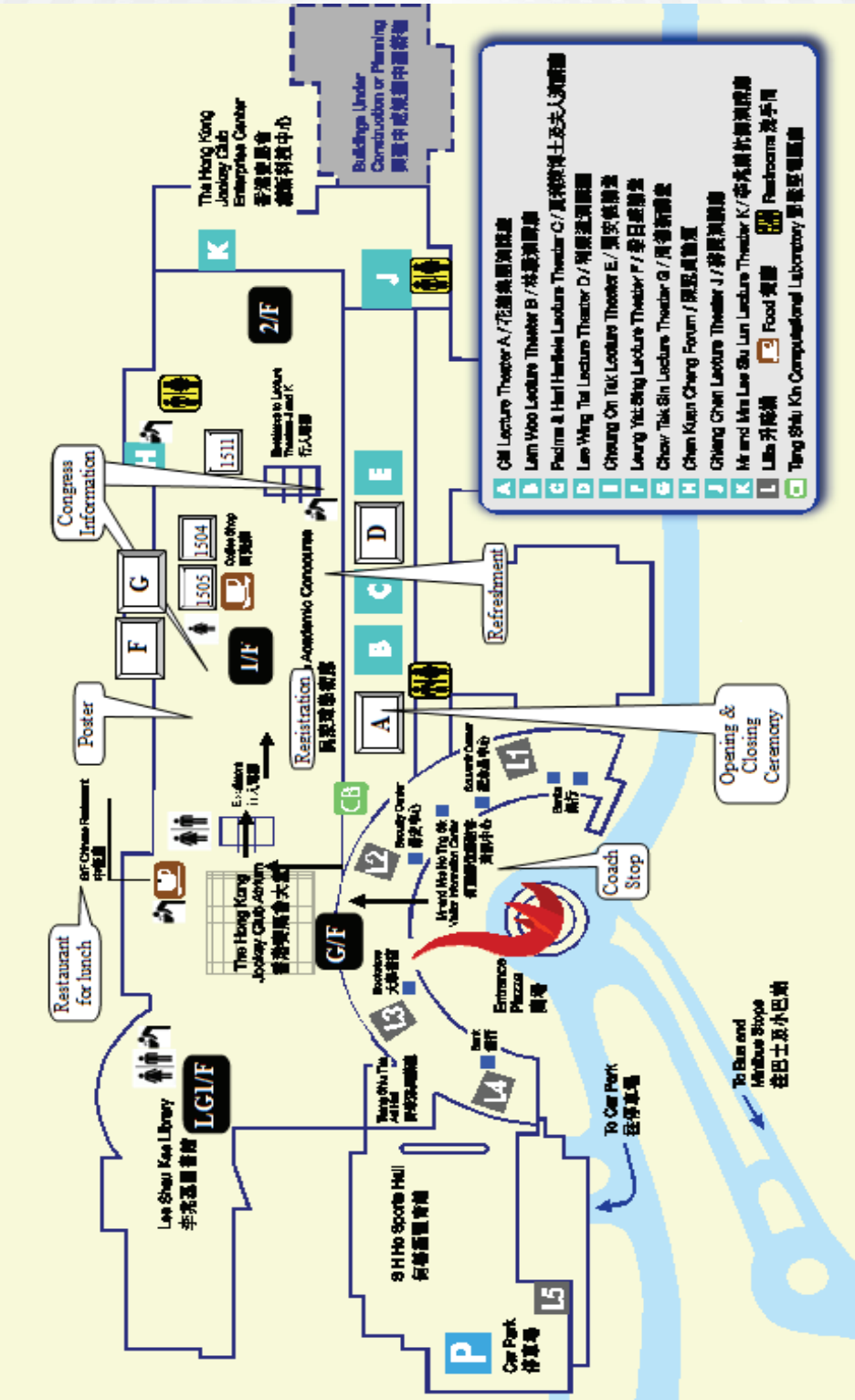
By MTR (subway) and Mini Bus

1. Take MTR (subway) to Choi Hung Station
2. Get off at Exit C1 of Choi Hung Station to take Green Mini Bus No. 11 or 11B to HKUST. (fare: ~HK$6.20)

Note: Tips in using public transportation in Hong Kong

1. Tender exact fare on all buses. There is no conductor and no change is provided.
2. Participants are advised to buy an electronic stored value ticket (Octopus). The initial cost to buy one "Standard Octopus" is HK$150 (with HK$50 refundable deposite and HK$100 stored value).

b. Campus Map of HKUST



c. Notification of Program Changes

Unforeseen and necessary changes to the program will be notified on the notice board near the registration desk. The updated program for each session will be posted outside the lecture rooms.

d. Special Arrangements for Adverse Weather Conditions

When the Amber or Red Rainstorm Warning or Typhoon Signal No. 1 or 3 is in effect, all scheduled progams will be held as usual.

When a Black Rainstorm Warning is in force, all sessions will be canceled. Those in progress will normally continue until the end. Stay indoors wherever you are and do not leave until the warning is canceled and the conditions are safe.

When a Typhoon Signal No. 8 (or above) is to be issued within 2 hours (pre-No. 8), all sessions will be canceled. Those in progress will normally continue until the end. Stay indoors in a safe place or return home if traffic and weather conditions permit.

If Typhoon Signal No. 8 (or above) or a Black Rainstorm Warning is canceled

- At or before 7:00 am, all morning sessions, including Technical visits and IAQ/ANQ symposium, will be held as scheduled.
- At or before 12 noon, all afternoon sessions will be held as scheduled, while morning sessions will be canceled.
- At or before 4 pm, the Banquet and other evening activities will be held as scheduled, while all program sessions will be canceled.

If Typhoon Signal No. 8 (or above) or a Black Rainstorm Warning is still in force at 4 pm, the Banquet and all evening activities will be canceled.

All details of rescheduled events will be posted on the notice broad of Congress venue and the Congress website www.anq2012.org.

Please note that no separate notification will be issued.

Program Schedule

Program Schedule – ANQ Congress 2012 Hong Kong

Welcome Reception and Registration – 31st July 2012 Venue: The Salisbury – YMCA Hotel of Hong Kong	
16:00-19:00	Registration
17:30-19:00	Welcome Reception

Day 1 of Congress - 1st August 2012 Venue: Lecture Theatre-A (LT-A), HKUST	
Morning Session	
8:45-9:00	Registration and Lion Dance
9:00-9:20	Welcome Speeches by Mr. Qi Weiming, ANQ/CAQ by Dr. Lotto Lai, HKSQ by Mr. John Hung, CEDB, Hong Kong Government by Prof. Fugee Tsung, HKUST
9:20-9:50	Keynote Speech I (Prof. Way Kuo)
9:50-10:50	Keynote Speech II (Mr. Masahiro Sakane)
10:50-11:00	IAQ Award Presentation (Chaired by Mr. Janak Mehta)
11:00-11:30	Refreshment Break (outside LT-D)
11:30-12:30	IKA Award Presentation and Awardees' Speeches (Chaired by Mr. Qi Weiming)
12:30-13:30	Lunch (at G/F Chinese Restaurant)
Afternoon Session	
13:30-15:00	Parallel Session I #
15:00-15:30	Refreshment Break (outside LT-D)
15:30-17:15	Parallel Session II #

Day 2 of Congress - 2nd August 2012 Venue: LT-A, HKUST	
Morning Session	
9:00-10:00	IAQ Session: "Quality in Healthcare - Its past, present and future" (Chaired by Prof. Yoshinori Iizuka)
10:00-11:00	Parallel Session III #
11:00-11:30	Refreshment Break (outside LT-D)
11:30-12:30	Parallel Session IV #
12:30-13:30	Lunch (at G/F Chinese Restaurant)
Afternoon Session	
13:30-15:00	Parallel Session V #
15:00-15:30	Refreshment Break (outside LT-D)
15:30-16:00	Keynote Speech III (Mr. Greg Watson)
16:00-16:30	Keynote Speech IV (Mr. Janak Mehta)
16:30-16:45	ARE-QP Award Presentation
16:45-17:00	Best Paper Awards Presentation
17:00-17:10	Invitation to ANQ Congress 2013
17:10-17:15	Closing Remarks and Vote of Thanks (Dr. Albert Tsang, HKSQ)
18:30-21:00	Banquet (**at The Salisbury – YMCA Hotel of Hong Kong**)

 # Parallel Sessions will be held in other venues (please refer to oral presentation schedule)

Poster Session – 1st & 2nd August 2012 Venue: Academic Concourse, HKUST	
Start	12:30, 1st August 2012
End	15:00, 2nd August 2012

Technical Visits – 3rd August 2012

- MTR Corporation
- The Hong Kong & China Gas Company Limited (Towngas)
- Hong Kong Science & Technology Parks
- Water Supplies Department, Government of the HKSAR

*All Shuttle Buses for the visits will leave at **8:40am** on 3rd August 2012 from **"The Salisbury" - YMCA Hotel**.*
There will be no coach service from other hotels

Post-ANQ Event – 3rd August 2012

IAQ/ANQ Symposium 2012
New Challenges: Quality and Sustainability in Education of Asia Pacific

Date:	3rd August 2012
Time:	8:45 – 12:30
Venue:	Lecture Theatre no. 9, Academic Building I City University of Hong Kong Kowloon Tong, Kowloon, Hong Kong

*The Shuttle Bus will leave at **8:15am** on 3rd August 2012 from **"The Salisbury" - YMCA Hotel**.*

There will be no coach service from other hotels.

Oral Presentation Schedule

1st Aug	Parallel Session I					
	LT-D	**LT-F**	**LT-G**	**Room 1504**	**Room 1505**	**Room 1511**
13:30 – 13:45	CAQ-02	IND-24	HK-02	HK-15	KSQ-03	CAQ-04
13:45 – 14:00	CAQ-13	THA-02	TW-17	JP-11	OV-07	HK-08
14:00 – 14:15	HK-16	THA-07	JP-14	JP-15	RUS-02	HK-17
14:15 – 14:30	IND-06	TW-09	JP-21	JP-17	RUS-04	JP-03
14:30 – 14:45	KSQ-01	JP-01	JP-31	JP-29	TW-07	KSQ-15
14:45 – 15:00	JP-10	JP-08	JP-33	JP-30	TW-13	THA-05

1st Aug	Parallel Session II					
	LT-D	**LT-F**	**LT-G**	**Room 1504**	**Room 1505**	**Room 1511**
15:30 – 15:45	IND-28	CAQ-07	SQI-03	KSQ-06	HK-11	HK-23
15:45 – 16:00	KSQ-04	HK-21	TW-11	KSQ-28	HK-24	JP-13
16:00 – 16:15	TW-06	IND-37	JP-34	JP-35	IND-26	JP-46
16:15 – 16:30	TW-19	IND-38	JP-43	JP-47	IND-32	KSQ-12
16:30 – 16:45	JP-16	KAZ-03	JP-44	JP-48	INDO-01	KSQ-16
16:45-17:00	JP-19	JP-18	IND-08	JP-49	KSQ-27	OV-02
17:00-17:15	JP-45	TW-08	IND-41	TW-01	THA-10	SQI-01

2nd Aug	Parallel Session III					
	LT-D	**LT-F**	**LT-G**	**Room 1504**	**Room 1505**	**Room 1511**
10:00 – 10:15	CAQ-17	HK-06	HK-13	CAQ-10	CAQ-01	CAQ-18
10:15 – 10:30	HK-18	KAZ-02	HK-20	CAQ-16	CAQ-03	VIE-02
10:30- 10:45	JP-09	RUS-05	TW-05	HK-10	KSQ-09	JP-04
10:45- 11:00	OV-03	VIE-07	IND-10	IRAN-01	THA-03	JP-23

2nd Aug	Parallel Session IV					
	LT-D	**LT-F**	**LT-G**	**Room 1504**	**Room 1505**	**Room 1511**
11:30 – 11:45	CAQ-05	THA-04	IND-36	HK-01	HK-05	CAQ-11
11:45 – 12:00	CAQ-06	THA-06	IND-46	THA-09	JP-02	IND-40
12:00 – 12:15	HK-04	TW-16	TW-02	JP-24	JP-06	RUS-01
12:15 – 12:30	IND-05	OV-05	KAZ-01	VIE-04	JP-27	VIE-01

2nd Aug	Parallel Session V					
	LT-D	**LT-F**	**LT-G**	**Room 1504**	**Room 1505**	**Room 1511**
13:30 – 13:45	ARE-QP	ARE-QP	ARE-QP	IND-25	JP-07	KSQ-13
13:45 – 14:00				IND-29	JP-26	KSQ-17
14:00 – 14:15	ARE-QP	ARE-QP	ARE-QP	KSQ-14	JP-28	JP-20
14:15 – 14:30	ARE-QP	ARE-QP	ARE-QP	NZ-01	JP-36	JP-22
14:30 – 14:45				SQI-02	JP-41	JP-25
14:45 – 15:00	ARE-QP	ARE-QP	ARE-QP	TW-15	JP-42	JP-32

Parallel Session I

Day 1: 1st August 2012, 13:30 –15:00

LT-D: Customer Satisfaction I (CS-1)

CAQ-02: Improving 15-Minute Arrival Rate for Highway Administration and Rescue Personnel *(WU Shanggan, SHEN Qunzhou, PENG Zhouzhi, LUI Baolin, and CHEN Qiusong)*

CAQ-13: Quality Assurance for Household Appliances in Large-Scale Production with Various Breeds *(LI Ming)*

HK-16: Collecting Customer's Documents through Web Portal *(Pik Chun Doris TANG, Wing Hong Alex LAM, Lily SZE, Wei Yuen Felicia LOW, Yuen Sze Karrie WONG, and Ka Ching Terence LAI)*

IND-06: Avoid "Waiting on Iron" and Enhance Internal Customer Satisfaction by Reducing Off-Chemistry Rejections at Blast Furnaces *(Sandeepan Mukherjee, S K Roy, Debashis Das, and P R Anil Kr)*

KSQ-01: International Comparison of Productivity and Efficiency of Pay-TV Operators Using Firm Level Data *(Yonghee Kim, Jeongil Choi, Sanghyung Ahn, and Younsung Kim)*

JP-10: A Study on Indices for Customer Satisfaction, Service Quality and Fan's Opinion Leader of Professional Baseball Teams in Japan *(Hideo SUZUKI)*

LT-F: Quality Tools and Industry Applications I (QTI-1)

IND-24: TRIZ for Zero Defects by Mahindra Institute of Quality India *(Narayan S. S., Rajinder Singh, Abijit Chakravarty, and Prakash Apte)*

THA-02: Reduce Basis Weight Variation *(SRIWONGSIRIWAT Charat, NANTURAT Seksan, SURASAK Lertsirimongkolsuk, SOMSAK Sothornprapakorn, and SABSEREE Jaran)*

THA-07: Increase C_{pk} of Load Bearing Compress *(KARNKORN Nichachan, SEREEVIRIYAKUL Vithayavut, and SABSEREE Jaran)*

TW-09: An Evaluation of Mahalanobis-Taguchi System and Selective Naive Bayesian Algorithm for Multivariate Pattern Recognition *(Jui-Chin JIANG and Tai-Ying LIN)*

JP-01: A Control Chart Based on Variance of Averages *(Makoto Ono)*

JP-08: A study on the Derivation Method of the Standard Elements of Medical Process Flow Chart *(Kyo FUJIWARA, Masahiko MUNECHIKA, and Masataka SANO)*

LT-G: Process Control and Improvement I (PCI-1)

HK-02: Modeling Daily Patient Arrivals at Emergency Department *(Mai Xu, Tse-Chiu Wong, and Kwai-Sang Chin)*

TW-17: Monitoring of Process and Product Profiles Using Artificial Neural Networks *(Chuen-Sheng CHENG, I-Lin WU, Sih-Yin CHEN, and Yen-Lu LEE)*

JP-14: A Nurse Fair Arrangement Model by Dynamic Programming *(W. Zang and T. Ohno)*

JP-21: The Proposal of the Review System Aiming at the Increase in Efficiency of a Review *(Kohsuke OMORI, Chika KIDOKORO, Takeshi KANEKO, and Shin-Ichiro YOKOYAMA)*

JP-31: A Study on the Methods for Management of Nursing Process *(Satoshi IZUMISAWA, Masahiko MUNECHIKA, and Masataka SANO)*

JP-33: Development of a Method for Designing Management Indicators for Healthcare Operation Processes *(Satoshi ITO, Satoko TSURU, Ryoko SHIMONO, Shogo KATO, and Yoshinori IIZUKA)*

Room 1504: Data Quality and Information Analysis I (DQI-1)

HK-15: Data Quality Issues in Decision Analysis *(Albert H.C. Tsang and S.L. Ting)*

JP-11: An Approximation Method of Binary Principal Points Based on K-means Approach *(Haruka Yamashita, and Hideo Suzuki)*

JP-15: A Study on the Visualisation of Medical Incidents related to Patient's Identifying Information *(Yuki WAKASAKI, Masahiko MUNECHIKA, and Masataka SANO)*

JP-17: The Proposal of the Viral Model of Information which is Considering Social Media Interactivity *(Daisuke SASHIDA1, Shin-Ichiro YOKOYAMA, and Takeshi KANEKO)*

JP-29: The Estimation of Comparing the Minimum Detectable Value with Given Value for Poisson Distributed Measurements *(Tomohiro OIKAWA, Yusuke TSUTSUMI, Hironobu KAWAMURA, and Tomomichi SUZUKI)*

JP-30: Spaciotemporal Interpolation of Temperature Data in Tokyo *(Taro NIGORIKAWA, Tomomichi SUZUKI, and Hironobu KAWAMURA)*

Room 1505: Performance Appraisal and Measurement (PAM)

KSQ-03: Developing R&D Evaluating Model: Business Aspect *(Hyun-Jin Yeo, Sae-Bom Lee, Ju-Young Han, Sang-Chan Park, Sang-Chul Lee, and Kwang-Hyuk Im)*

OV-07: Global Service Process Transformation *(Jane SEDDON and Jan GILLETT)*

RUS-02: Practical Programme of Revolutions in Factories (PPORF): 20 Keys"® in Russia - Holistic Continuous Business Improvement System *(Yury SAMOYLOV)*

RUS-04: Innovative Enterprise Management System *(Orlov KIRILL)*

TW-07: Constructing Performance Appraisal Criteria Based on Spencer Competencies in Small-sized Service Companies *(Ronald SUKWADI and Ching-Chow YANG)*

TW-13: Using Back-Propagation Neural Networks to Explore the Performance Evaluation in the Taiwan Train Quality System *(Yih-Chuan WU, Yung-Tsan JOU, Wei-Cheng LEE, Wen-Tsann LIN, and Ya-Lin SHIEH)*

Room 1511: Product Design and Development I (PDD-1)

CAQ-04: Quality Problem Close Loop Based on Product Characteristic Linkage Model *(WANG Yang and DUAN Gui-jiang)*

HK-08: Increase Riser Inspection Rate of Target Buildings *(Chan Wah Kuen, Yeung Pui Ching, Tang Chi Ho, Chan Ping Man, Tam Wai Chu, and Yee Kai Hung)*

HK-17: Self-developed Coupler/Chain-assisted Cutting Machine *(Chan Yee, Wong Wai Kit, Lau Chi Hong, Chan Chi Wai, Ho Chuen Cheong, Chow Kai Ming, and Kwok Kee Pao)*

JP-03: A Study on a Research Method for Improvement of Bottle Cap Considering Opening and Closing *(Tatsuya MARIKO, Masahiko MUNECHIKA, and Masataka SANO)*

KSQ-15: Case Study on Improving of Design Stage Considering Customer Complaint *(Sangbok Ree and Rohgook Park)*

THA-05: Improve Measurement Performance of Carburization Inspection Robot *(Manaspiti Kolmanas, Rattanangam Phinyakarn, Khandiphanichakul Santad, Lertsirimongkolsuk Surasak, and Kesprathum Jessada)*

Parallel Session II

Day 1: 1st August 2012, 15:30 –17:15

LT-D: Customer Satisfaction II (CS-2)

IND-28: Product Customisation by Requirement Engineering *(A. Vijay.B.S, B. Babu Yuvaraj.J and C. Mohammed Naveed.S.I)*

KSQ-04: Corrective Action Strategy for Service Failure based on SWOT Analysis *(Hyuck Moo Kwon and Agung Sutrisno)*

TW-06: The Assessment on Intelligent Agent *(Wen-Yau LIANG)*

TW-19: Customer Requirement Based Quality Planning and Improvement for Food and Beverage Management *(Chang-Lin YANG, Rong-Hwa HUANG, and Shu-Ju LIAO)*

JP-16: Proposal of Product Recommendation System that Correspond Change of Short-Term Preference *(Akira INOUE1, Takeshi KANEKO, and Shin-Ichiro YOKOYAMA)*

JP-19: Clarification of the Elements which Act on a Brand Loyalty *(Hitoshi SAITO, Shin-Ichiro YOKOYAMA, and Takeshi KANEKO)*

JP-45: A Study on Decision of Segmentation Threshold for Multi Attributes *(Yo TAKAHASHI, and Hideo SUZUKI)*

LT-F: Quality and Business Excellence Model (QBE)

CAQ-07: The Hierarchy Theory of Quality Excellence Management *(Quanfa WANG)*

HK-21: The Learning Organisation Journey in MTR *(David Raymond Chuen-choi LEUNG and Philip Wai-ming WONG)*

IND-37: Transformational Journey of Mahindra and Mahindra - SWARAJ Division through Business Excellence Activities *(Raja Chatterjee and Joginder Jaglan)*

IND-38: Employee Engagement Practices in New Product Development Team *(Shrikant B Kulkarni and Arvind D Lawande)*

KAZ-03: Application of EFQM Excellence Model as a Precondition of Global Leadership and Competitiveness of Medical Organisations *(Abay BAIGENZHIN, Azat ABDRAKHMANOV, Englik KADIROVA, and Zhanat NURAZKHANOVA)*

JP-18: Research on the Quantification of the Effect of Informal Communication to Improve the Quality of Communication *(Hiroki ENDO, Takeshi KANEKO, and Shin-Ichiro YOKOYAMA)*

TW-08: An Overview of Taiwan TrainQuali System (TTQS) and National TrainQuali Prize (NTQP) *(Ta-Cheng CHIANG, Ching-Chow YANG, Ling-Huey SU, and Han-Jung LIU)*

LT-G: Process Control and Improvement II (PCI-2)

SQI-03: Maintenance Scheduling of Plasma Etching Chamber in Wafer Fabrication for High Yield Etching Process *(Le Minh DUC and Cher Ming TAN)*

TW-11: Identifying the Process Status Change Using Independent Component Analysis and Support Vector Machine *(Kuo-Ko HUANG, Chuen-Sheng CHENG, Pei-Wen CHEN, Man-Szu HSU, and Miao-Jing CHIANG)*

JP-34: A Method for Improving Clinical Processes by Providing Feedback on Standard Clinical Guidelines based on Analysis of Clinical Data *(Ken MATSUOKA, Satoko TSURU, Yukikiyo KURODA, and Shogo KATO)*

JP-43: Constrained Bounded Adjustment Scheme *(Hironobu KAWAMURA, Kazuishi HORII, and Tomomichi SUZUKI)*

JP-44: Design of Healthcare Delivery Process Accompanying Human Body Invasion *(Ryoko SHIMONO, Satoko TSURU, and Yoshinori IIZUKA)*

IND-08: Preventive Control of Surface Roughness at Cold Rolling Mill, Tata Steel *(Manish Ambastha, U. S. Patnaik, and Kaushik Basu)*

IND-41: Application of Shainin Techniques for Improvement in Yield in One of Steel Tube Mills (HF#3) of Tata Steel, Tubes SBU *(Nishith Kumar Sinha, B K Srivastava, and Rajesh Kumar)*

Room 1504: Data Quality and Information Analysis II (DQI-2)

KSQ-06: Searching and Discovering Niche Technology Area Using Patent Information Analysis *(Chul-Young Kim, Min-Soo Kang, Dong-Moon Shin, and SungMin Bae)*

KSQ-28: A Study on Optimal Reliability Growth Model of Embedded Systems with Hardware-Software Linkage Faults *(Kyung H. Nam and Do Hoon Kim)*

JP-35: Optimal Time Scale Analysis of Field Reliability Data *(K. TAKESHITA and W. YAMAMOTO)*

JP-47: Visualisation of Nonlinear Multidimensional Quality Data Using Self-organising Map and Bootstrap *(Fumiaki SAITOH and Syohei ISHIZU)*

JP-48: Estimation of Two Ordered Normal Means with Ordered Variances: Part II – A Simulation Study *(Yuan-Tsung CHANG and Nobuo SHINOZAKI)*

JP-49: Predicting the Temperature Distribution of a Piece of Metal in the Crushing Process of Home Electrical Appliance *(Kouta HAYAHI, Ken NISHINA, Naru ISHII, Toshinori SUGAWARA, Masashi OHNISHI, and Hisashi KUBOTA)*

TW-01: The Application of Decision Tree-Based Ensemble Classifiers for Diagnosing the Mean Shift Signals in Multivariate Control Chart *(Hung-Ting LEE, Chuen-Sheng CHENG, Yun TAI, and Yi-Chun HUANG)*

Room 1505: Environmental and Green Operations (EGO)

HK-11: Measurement and Verification of Energy Performance *(William Sin-tong Lau)*

HK-24: Carbon Accounting Harmonisation to Reflect Climate Impacts *(CHAN Pang and William Sin-tong Lau)*

IND-26: Bio Medical Waste Management in Government Hospitals *(S. Fareed Uddin)*

IND-32: Green Lighting for Process Industry *(A. Archit Bajaj and B. Amitabh Bhattcharjee)*

INDO-01: Dust Return as New Materials for PPC Product Development Process By-Pass Technique in Tuban Factory *(Chatur Febrianto, Saiful Mas'an, Afifudin, Zuhri, Nugrahadi, Tri Eddy, Susanto, M. Kharis, and Ahmed Vaival Setiadi)*

KSQ-27: A Study on Development of Green Management System in Korea *(Hyung-wook Kim)*

THA-10: Waste Reduction by using the Screening Waste Management *(Udsanee MEEPRASERTSAGOO, Somnuk PURIPANYAPINUN, Danai CHAROENSUK, and Thanakom SOONTORNCHAINACKSAENG)*

Room 1511: Other Quality-Related Issues (OQI)

HK-23: Quality of Drinking Water in HKSAR, China *(CHEUNG Yun Hing Richard)*

JP-13: Prevention by Prediction: Seven Viewpoints for Achieving Reliability and Safety *(Kazuyuki Suzuki)*

JP-46: The Relationship between Academic Achievement and Ability of the Experiment *(Atsushi HORIGUCHI, Tomomichi SUZUKI, Hironobu KAWAMURA, Akira KOTANI, and Yuzuru HaAYASHI)*

KSQ-12: A study of the Knowledge Sharing Effects on the Project Organisation Characteristic, Management Environment Characteristic, and Project Outcome *(Jae-Young Moon and Won-Hee Lee)*

KSQ-16: Developing Manufacturing Knowledge Sharing Platform: Focus on Korea Root-technology Industry *(Young-Gue Kim, HyoungWook Lee, Young-Mu Huh, and SungMin Bae)*

OV-02: The Application of Policy Deployment in Indian Companies *(Charles A. LIEDTKE)*

SQI-01: Human Capital Risk - Implications on Quality and Productivity *(Roy RIMINGTON)*

Parallel Session III

Day 2: 2nd August 2012, 10:00 –11:00

LT-D: Product Design and Development II (PDD-2)

CAQ-17: Research and Application of 3G Electrical Safety Job Site Intelligent Monitoring Devices *(ZHAO Changqing, ZHAO Chenxu,XU Heng, ZHANG Haijun, and SUN Minghao)*

HK-18: New Design of Collar Electrode *(Cheung Pak Kin, Terry Hui, Tam Kin Wah, Stephen Lee, Chong Yau Chun, Kwok Ngan Hung, Chu Kwok Key, Tam Ying Hung, Siu Chi Keung, Yuen Wing Hei, and Monkey Law)*

JP-09: Robust Parameter Design for Multi Signals-Response System *(K. Tsukuda and Y. Nagata)*

OV-03: QFD + DOE = New Product Quality Excellence *(Ronald D. MOEN)*

LT-F: Quality/Integrated Management System (QIM)

HK-06: Railway Service Delivery with Integrated Management System *(Joseph To-cheung NG)*

KAZ-02: Implementation of Improvement projects within Quality Management System of a Medical University: Methodical Approaches and Strategic Goals *(Tolebay RAKHIPBEKOV and Azat ABDRAKHMANOV)*

RUS-05: The Future of ISO 9001 Standard through the Lens of the System of Profound Knowledge *(Yuri ADLER and Vladimir SHPER)*

VIE-07: ISO 26000 – Showing the Way in Social Responsibility and Sustainability Development *(Ngo Van Nhon and Le Ngoc Diep)*

LT-G: Quality Improvement Tools I (QIT-1)

HK-13: Implementation of Process Standardisation in Multinational Enterprises *(Kwok Ming YEUNG and Kwai Sang CHIN)*

HK-20: QFD for TQM Implementation *(Catherine Y. P. Chan)*

TW-05: A Novel Suggestion System Using Deming 14 Points and Balanced Scorecard *(Pei-Lin JANG, Gary TSAI, Ricky PO, and Alice WU)*

IND-10: A Framework for Cross-Functional Project Implementation Case Study of Indian Tax Administration *(Nilimesh Baruah)*

Room 1504: Quality Culture (QCu)

CAQ-10: Building Zero Defect Quality Culture of Haier *(ZHAO Liguo and MA Chao)*

CAQ-16: The Legal Risks and Compliance Management on Product Quality *(JIANG Suhua)*

HK-10: Cultivating a Staff Engagement Culture by Work Improvement Team "You have a Say" Programme *(Weller Kwok-wai CHAN and Charles Long-chau HO)*

IRAN-01: Quality Way: The Perfect Way to Survive and Grow *(Mohammad Farshad KAVEHPISHEH)*

Room 1505: Quality and Innovation (Q&I)

CAQ-01: Quality and Innovation of the Internet Era *(WANG Jun)*

CAQ-03: Quality Changes the World Service Creates Value *(LIAO Xudong)*

KSQ-09: Service Quality Innovation and Performance in the medical industry: Exploratory Approach *(Gye-Soo Kim)*

THA-03: Reduce Cost of Impact Preventing Roof *(SEREEVIRIYAKUL Vithayavut, SABSEREE Jaran)*

Room 1511: Quality Education and Training I (QET-1)

CAQ-18: Continuing Education: Cherishing Quality for the Future *(DIAO Qingjun, LIU Xianyan and LI Jianbin)*

VIE-02: The Application of Control Theory in Analysing Training Process, Suggesting Methods for the Improvement of Tertiary Training Quality *(Dinh Van Nhuong and Nguyen Thi Huyen)*

JP-04: A Study on Evaluation Method of the Education for Healthcare Safety *(Tsubasa IKI, Masahiko MUNECHIKA, and Masataka SANO)*

JP-23: Quantification of the Autonomy Formation Structure of the Person *(Yasuhito NAKAMURA, Shin-Ichiro YOKOYAMA, and Takeshi KANEKO)*

Parallel Session IV

Day 2: 2nd August 2012, 11:30 –12:30

LT-D: Lean and Six Sigma Methodology I (LSS-1)

CAQ-05: How to Cultivate Six Sigma Master Black Belt Effectively in Enterprises *(ZHANG Dehua)*

CAQ-06: Improve the Charging Capability of Billing System Using Lean-Six Sigma *(LU Dongliang, PAN Jun, Xie Heng, ZHANG Chendong, and LIANG Shihong)*

HK-04: A Study of the Impact of Cultural Factor on Six Sigma Implementation *(Ng Chi Kuen, Ivan)*

IND-05: Case Study: To Reduce the Rejection in injection Moulding process Using Six Sigma GMA-DMAIC Methodology *(K.Kumar, R.B.Madhekar, and Amit Chauhan)*

LT-F: Quality Tools and Industry Applications II (QTI-2)

THA-04: Reduce Water Closet Grindings: A Case Study in SCG *(KANJANAPONGSAWET Watchara, LERTSIRIMONGKOLSUK Surasak, KESPRATHUM Jessada, and SOTHORNPRAPAKORN Somsak)*

THA-06: Improve P_{pk} of 28 Days Strength of OPC for RMC Application *(TREAMSAKSAKUL Sumed, SABSEREE Jaran, LERTSIRIMONGKOLSUK Surasak, and SOTHORNPRAPAKORN Somsak)*

TW-16: Using Modified TRIZ Approach for Quality Improvement *(Chang-Lin YANG, Rong-Hwa HUANG, and Wei-Ling WEI)*

OV-05: Applying Tools of Quality to Quantify the Business Case for Social Responsibility *(Milton KRIVOKUCA)*

LT-G: Quality Management Philosophies (QMP)

IND-36: Enhancing Productivity of the Mortgage Sales Force Using Quality Management Philosophies *(Chinmay Dhoble, Suresh kn Kumar, Atul Sharma, Manuj Mahendra, and Vivek Jain)*

IND-46: Reduction in Branch Operating Expenses *(Sachin Bora, Sunil Agrawal, Ajay Pugalia, and Kaustubh Dani)*

TW-02: A Study on Implementation of Quality Management for Service and Manufacturing Industries *(Ta-Cheng CHIANG, Ching-Chow YANG, Ling-Huey SU, and Han-Jung LIU)*

KAZ-01: Implementation of EFQM Excellence Model in Municipality of Astana City: Methodical Findings and Practical Benefits *(Azat ABDRAKHMANOV, Oleg KAINAZAROV, and Lyudmila TSINOVKINA)*

Room 1504: Quality and Supply Chain Management (QSC)

HK-01: Knowledge Management and Service Quality Capabilities for Performance: A Study of Logistics Service Providers in a Supply Chain Context *(Ivy S.N. Chen and Patrick K.O. Fung)*

THA-09: Enhance Truck Utilisation by Creating Visible Supply Chain Management *(BOONCHAVAL Sirichai and KESPRATHUM Jessada)*

JP-24: Introduction of SCM Proposed by the BPM Approach Considering the BCP *(Yuki IHIRA, Takeshi KANEKO, and Shin-ichiro YOKOYAMA)*

VIE-04: Enhance Service Quality for Distributing System of Retailed Sales in Ho Chi Minh City, Vietnam *(Vo Phuoc Tan and Pham Xuan Thu)*

Room 1505: Health Care Safety and Systems I (HCS-1)

HK-05: Patient Safety Systems between Japan and Hong Kong *(Zoie Shui-Yee Wong and Masanori Akiyama)*

JP-02: A Study on a Method of Improving Working Method in Healthcare *(Haizhe Jin, Masahiko Munechika, Masataka Sano, and Chisato Kajihara)*

JP-06: A Study on the Method for Decreasing Medical Incidents Related to Patients-Provided Medicines *(Keisuke FUKUDA, Masahiko MUNECHIKA, and Masataka SANO)*

JP-27: A Study on Methods to Setting Goals of Problem-solving in Healthcare *(Tatsuro YOKAWA, Masahiko MUNECHIKA, and Masataka SANO)*

Room 1511: Quality Education and Training II (QET-2)

CAQ-11: Improving the Qualification Rate of Staff's Civilisation Service *(GU Jiankai and CHEN Xianqiang)*

IND-40: Generating Business Results through TQM Education and Training *(Rajinder Singh)*

RUS-01: Formation of Quality of Life through Revealing and Development of Inclinations and Bents of Children in Preschool Education Establishments *(A. Volkov Oleg GAVRILOVICH and B. Vorobchenko Yulia ALEKSANDROVNA)*

VIE-01: Construction Standard Training Programme Output and Use Standard for Quality Management Education at Ho Chi Minh City University of Food Industry, Vietnam *(Dang Vu Ngoan and Le Hoang Vu)*

Parallel Session V
Day 2: 2nd August 2012, 13:30 –15:00

LT-D (ARE-QP)
MTR Corporation (HKSQ)
Unimicron Technology Corp. (CSQ)
Taipei Rapid Transit Corporation (CSQ)
Ufa State Petroleum Technological University (ROQ)

LT-F (ARE-QP)
Auto Sector of Mahindra and Mahindra Ltd (ISQ)
National Research Medical Center, Astana city, Kazakhstan (IAQMA)
State Medical University, Semey city, Kazakhstan (IAQMA)
Red Star University, Hai Duong Province, Vietnam (VQAH)

LT-G (ARE-QP)
PTT Public Company Limited (SQAT)
Energy Regulatory Commission of Thailand (SQAT)
Yanzhou Coal Mining Company (CAQ)
Bosideng Co., Ltd. (CAQ)

Room 1504: Lean and Six Sigma Methodology II (LSS-2)

IND-25: Design for Six Sigma (DFSS) Methodology in Product / Process / Service Design and Development *(Sharath Chandra Peddi, Anil Sachdev, and Rajinder Singh)*

IND-29: Pioneering Lean in IT Services for Delivery Excellence: A Wipro Experience *(Devender Malhotra and Rituparna Ghosh)*

KSQ-14: DFSS for Non-manufacturing Industry at the Samsung Group *(Seunghyeon Lee, Eunseok Cheon, Bong Choi, and Chongman Kim)*

NZ-01:Lean Thinking and Six Sigma in Health Care: Challenges and Sustainability Issues within New Zealand *(Nigel P. GRIGG and Mohammad ALSHADIEFAT)*

SQI-02: Improve Straight through Processing Rate of Finance Company by Six Sigma Methodology *(Too Meng KEN and Karthik Vasu KRISHNAN)*

TW-15: A Dependent Model of DMAIC and DMADV Research in Six Sigma Project: A Case Study in ESD Protection Component *(Chi-Ming KUAN and Chuen-Sheng CHENG)*

Room 1505: Health Care Safety and Systems II (HCS-2)

JP-07: Proposal of the Method to Plan Education and Training for Healthcare Safety *(Chisato KAJIHARA, Masahiko MUNECHIKA, Masataka SANO, and Haizhe JIN)*

JP-26: Clarification of Relationship of Work Unit in Analysis Methods for Medication Incidents *(Masataka SANO and Masahiko MUNECHIKA)*

JP-28: Structured Process Model for Providing Rehabilitation Services in a Hospital *(Masaaki KANEKO and Masahiko MUNECHIKA)*

JP-36: A Study on Internal Audit Items and Subjects in Hospitals *(Ryosuke WATANABE, Masahiko MUNECHIKA, and Masataka SANO)*

JP-41: Designing the Structure of a Knowledge Base for the Prediction and Prevention of Trouble in the Healthcare Process *(Daisuke OKAMOTO, Satoko TSURU, Shogo KATO, and Ryoko SHIMONO)*

JP-42: Assessment System for Preventing Patient Falls based on Survival Analysis *(Shogo KATO, Fumio FUKUMURA, Satoko TSURU, and Yoshinori IIZUKA)*

Room 1511: Buying and Users' Behaviour (BUB)

KSQ-13: Difference in Users' behaviour between Present and Past Users Based on Their Personal Traits *(Sae-Bom Lee, Liu Fan, Sang-Chul Lee, and Yung-Ho Suh)*

KSQ-17: A Study on the Wave of K-POP and Its Success Factors *(Wan Seon Shin, Liu Fan, Hyung Wook Kim, and Yun Chung Hong)*

JP-20: Construction of the Media Contact Model in Buying Behaviour in Consideration of Chasm Theory *(Kai IWASAKI, Takeshi KANEKO, and Shin-Ichiro YOKOYAMA)*

JP-22: Model of Consumer Buying Behaviour in Promotional Marketing Considering the Psychological Barrier *(Naoki KAWASHIMA, Kyohei MORISAKI, Takeshi KANEKO, and Shin-Ichiro YOKOYAMA)*

JP-25: A Study of the Structural Design of Easy-to-Use Web Stores Using Detailed Analysis of Buying Behaviour in Brick and Mortar Stores *(Tomotake KARUBE, Masahiko MUNECHIKA, and Masataka SANO)*

JP-32: A Study of Factors Contributing to the Use of Seasoning in Japan *(Chiaki HARA, Masahiko MUNECHIKA, and Masataka SANO)*

Poster Presentation (sorted by Region)

Poster Session
Venue: **Academic Concourse, HKUST**
Start: **12:30, 1st August 2012**
End: **15:00, 2nd August 2012**

BS-01: Quality Management in New Product Development: Pharmaceuticals Aspect *(Dr. A. S. M Ansarul ISLAM)*

CAQ-08: Improve the Labor Productivity of Ronggui Toll Station *(HE Jianjun and WANG Junbiao)*

CAQ-09: Reducing the Lost Rate of Password Card between Two Non-Networking Sites on the Shenzhen – Guangzhou Highway *(WU Shanggan, TAN Fei, YANG Shaotian, YAN ZhuoWang, LIANG Xiaoying and LIN Qingsheng)*

CAQ-12: Increasing Outfield Equipment Intactness Rates of Mainline Closed Circuit Televisions *(WU Shanggan, QU Zheng, LI Rongai, LIU Bibo, JIN Wenmin, and XU Xianwei)*

CAQ-14: The Quality Economic Model and Strategy based on the Generalized Quality and Customer Value *(XUE Chao)*

CAQ-15: The Continuous Improvement Method for Oilfield Engineering Technical Service Enterprise Quality Management *(Jianzhu GONG)*

HK-03: Principals' Perception of Quality and Accountability: A Case Study of Lasallian Schools *(Peter P.K. KWOK)*

HK-07: The Effects of Teamwork Quality, Team Goals and Personality on Project Success: An Empirical Study *(Shing-Chung NGAN, Yung-Sin CHENG, Hon K. YAU, and T.C. WONG)*

HK-09: Evaluation of the Practice of Quality Assurance in Greater China Construction Industry *(Philip H.E. CHAN, Prosper BERNARD, Michel PLAISENT, and James Ming-Hsun CHIANG)*

HK-14: Perceptual Influence of Problem Solving Approach to the Student Learning from Mistakes *(Hon Keung YAU, T. C. WONG, and S. C. NGAN)*

HK-22: The Impact of Blaming on the Effectiveness of Error-based Learning in Hong Kong Higher Education *(T. C. WONG, H. K. YAU, and S. C. NGAN)*

HK-25: Elected Leader Capability based on Eight Quality Management Principles – Hong Kong Case in 2012 *(Lotto, Kim Hung LAI)*

IND-02: Science of Quality Education for Social Excellence *(Dr K Nithyanandan)*

IND-23: Application of Human Error Prevention *(Rohit Pathak, Rajinder Singh, and Milind Deshpande)*

IND-33: Internal Quality Assurance Cell: A Platform to Sustain and Enhance Academia-Industry Interaction *(Dr. B. S. Madhukar and Mr. I. H. Jahagirdar)*

IND-34: Exploitation of Fume Extraction Dust for the Development of Paving Blocks using Eco-Friendly Geopolymerisation Process *(Sanjay Kumar, K. B. Gaud, S. K. Nath, YVSC Chowdhary, and R M Kamat)*

IND-35: Aligning Our Water Goal to National Water Policy 2020 *(N P Singh, K. B. Gaud, S B Bhapkar, P N Gawade, and D M Patil)*

IND-42: Improving Turnaround Time for Loan Disbursement Process *(Yogesh Gaat, Usha Dutta, Brijesh Shukla, and Sunil Y Jadhav)*

IND-44: Creating Business Value *(Rajesh Sehgal and Gopal Aggarwal)*

IND-47: Doing Things Right, the First Time and Every Time to Enhance Customer Satisfaction *(Sachin Bora, Manoranjan Sahoo, Pankaj Shrivastava, and Rajmani Singh)*

IND-48: To Reduce the Rejection in Seat Belt Assembly: A Case Study *(Dr K. Kumar, Sagar Vashisht, Sudipta Sarkar, and Praveen)*

IND-49: To Reduce the Damping Force (D.F.) Rework of Shock Absorber Assembly: A Case Study *(Dr K. Kumar, Sagar Vashisht, Narender Gaba, and Vivek Gupta)*

JP-12: Semantic Analysis of the Customer Inquiry Data Based on Text Mining Using Ontology *(Hodaka NAKAMURA, Fumiaki SAITOH, and Syohei ISHIZU)*

JP-37: Improvement of Work Sensitivity in Keyboard Input Operation by Neurofeedback *(Kazuki TAKEUCHI, Raita OHORI, Fumiaki SAITOH, and Syohei ISHIZU)*

JP-39: Construction of Quality Function Deployment Ontology Involving Logical Restriction among Qualities *(Ken TOMIOKA, Fumiaki SAITOH, and Syohei ISHIZU)*

JP-40: Algorithm for a Family of Evaluation Attributes Sets Representing Customer Preference Relation *(Takuya MOGAWA, Fumiaki SAITOH, and Syohei ISHIZU)*

KSQ-02: A Study on Shopping Value and Performance in Online Auctions in Korea (*Chul-Ho Cho)*

KSQ-05: Choice Change in Future Context: Focusing on Temporal Construal Theory *(Jun-Sik, Kwak and Kwang-Ho, Ahn)*

KSQ-07: Incorporating Platform-based Product Development into Systems Engineering Process *(Hee-Kweon Yoon and Jai-Hyun Byun)*

KSQ-08: Measuring the Quality Cost in Service Industry *(Liu Fan, Sang-Chan Park, Yung-Ho Suh, and Sang-Chul Lee)*

KSQ-11: Analyzing Clinical Patterns of the Integrative Medical Service *(Hyung-Lae Lee, Sang-Chan Park, and Sang-Chul Lee)*

KSQ-18: Public Online Service and Customer Satisfaction in U-City *(Insu Cho and Heejun Park)*

KSQ-19: A Study on Effects of the Manufacturer's Market Orientation on Innovative Activity and Business Performance *(Hanjoo Yoo, Jong-Woo Park, and Gwangsuk Song)*

KSQ-20: Fuzzy Relation Analysis on the Core Competence of CEO and Management Index *(Jignesh Panchal, PARK Bong-Gyeong, HWANG Seung-Gook, and PARK Young-Man)*

KSQ-21: Developing a TPM Model for Quality Management *(Ju-Young Han, Liu Fan, Sang-Chul Lee, Sang-Chan Park, and Yung-Ho Suh)*

KSQ-22: Developing the Qcost System in Service Company *(Kwang-Hyuk Im, Liu Fan, Sang-Chul Lee, Sang-Chan Park, and Yung-Ho Suh)*

KSQ-23: Developing a Method for Integrative Medical Service by using Decision Modeling Method *(Ka-Eun Oh, Sang-Chan Park, and Sang-Chul Lee)*

KSQ-24: Developing R&BD Evaluation Systems *(Young-Tae Kim, Ka-Eun Oh, Hyung-Lae Lee, Sang-Chan Park, Sang-Chul Lee, and Kwang-Hyuk Im)*

KSQ-25: Efficiency Analysis of Public Organizations Management Assessment Criteria in Korea *(Wan Seon Shin, Jae Yeon Park, Sung Hoon Hong, and Eun Ki Jung)*

KSQ-26: A Semantic Web Approach to Improving the Quality of XBRL Business Report *(Pyo Jin Jeon, Young Gon Bae, and Dae Won Kim)*

KSQ-29: Determining the Most Profitable Target Values for a Tool Wear Process based on a Correlated Variable *(Cheol-Eun Jeong, Hyuck Moo Kwon, Sung-Hoon Hong, Taeho Park, and Min Koo Lee)*

KSQ-30: A Continuous Screening Procedure using Performance and Surrogate Variables with a Specified AOQL Value *(Sung Hoon Hong, Eun Ki Jung, Hyuck Moo Kwon, and Min Koo Lee)*

OV-06: Development of Knowledge Management Capabilities for ISO 9001 Certified Enterprises: A Research Agenda *(Kit Fai PUN and Man Yin Rebecca YIU)*

OV-08: Measuring Knowledge Management Performance in Industrial Enterprises: An Integrated Model *(Man Yin Rebecca YIU and Clement K. SANKAT)*

RUS-03: Comparison between the Desirability Function by E.C. Harrington and the Loss Function by Genichi Taguchi *(Dr. Yuri ADLER and Galina STASOVA)*

SQI-05: Flow Improvement in Histopathology Laboratory through Resource Leveling *(NG Yun Suan Melissa and Ilyana Huda Bte Mohammed Hussain)*

SQI-06: To Reduce Pain and Discomfort for Patient with Scrotal Swelling *(LEE Teng Teng, XU Yi, HONE Swee Mui, HENG Pei Boon, MUHAMMAD Najib Bin Ngasewan, TAN Wu Meng, NORHAYATI Bte Mohd Dali, and KOU Seow Wei)*

SQI-09: To Eradicate Splint: Associated Problems at SGH Neonatal to Zero within 6 Months *(JULIET LEE WAI KHENG)*

SQI-15: Order Up! To Reduce the Time Taken for A1/B1 Diet Ordering Process in Ward 73 by 50% within 6 Months *(LEE, C. W., ROSLAN, S., and OSMAN, H.)*

TW-10: The Diffusion of Voluntary ISO 26000 among SMEs in Taiwan: Exploratory Evidence from the National Survey *(Yen-Chun Jim WU and Chih-Hung YUAN)*

TW-12: Assessing the Effects of Experimental Marketing and Image on Customer Satisfaction and Loyalty in Extensive Education *(Ling-Lang TANG and Yun-Chung YEH)*

TW-14: National Logistics Competitiveness and Corruption: Evidence from Emerging Country *(Yen-Chun Jim WU and Chih-Hung YUAN)*

TW-18: Analysis of Critical Evaluation Factors of the EWPS Scale for Boundary-Spanners using DEMATEL *(Hsuan-Kai CHEN, Shang-Ping LIN, Tsai-Ding LIN, and Hsin-Hung WU)*

TW-21: Development and Implementation of the Hazardous Substance Process Management *(Gary TSAI, Chia-Fu CHANG, and Ya-Hui CHAN)*

TW-22: Applying Lean Thinking to Develop a Customer Value Analytic Model for the Service Industry *(Chang-Hsi YU, Chi-Hsun TSAI, Chi-Kuang CHEN, and An-Jin SHIE)*

TW-23: A Study on the Relationship between Organizational Slack and Quality Performance: The Mediating Role of Ambidexterity *(Che-Hung LIN and Guo-Chang CHUNG)*

TW-24: A Study of Consumer Behavior of Taiwan in “Topical Pain Reliever” Products *(CHEN Hsuan-KAI, CHEN Long-Sheng, HUANG Yueh-Chuen, and WAN Wei-Ping)*

TW-25: The Efficiency Evaluation in Taiwan Commercial Banks *(Iuan-Yuan LU, Wei-Wen HSIAO, and Da-Zheng HSIAO)*

TW-27: Discuss the B&B Industry on the Employee Variability versus Customer Variability *(Ching-Chow YANG, Ping-Shun CHEN, and Yu-Hui CHIEN)*

TW-30: An Empirical Study of the Measurement of Eco-Component of Service Quality in Taiwan’s International Tourist Hotels *(Iuan-Yuan LU, Chih-Yun YANG, and Cheng-Jui TSENG)*

VIE-03: The Innovation of Training Curriculum Focusing on Training Skills – A Method of Improving the Training Quality at Red Star University *(Vu Quang Thap, Phi Dang Tue, and Nguyen Thi Huyen)*

VIE-08: Mentoring ELT Teachers into the Learner-Centered Approach to Improve Students' Oral English Proficiency at Red Star University *(Nguyen Thi Huyen and Phi Dang Tue)*

VIE-09: Society's Needs Attach to School Development Program in Thua Thien Hue College of Education *(Hoang Ngoc Quy)*

VIE-10: The Advantages and Disadvantages of using Smart Pens for Young Children's English Learning *(Le Ngoc Diep and Ngo Van Nhon)*

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  Presented by Mr. Janak Mehta

Keynote Speech I

Reliability and Survivability: The Future of Energy

Professor Way Kuo
President and University Distinguished Professor
City University of Hong Kong

Abstract

Energy is no longer a luxury, but rather a necessity. A reliable supply not only guarantees economic development, it improves the quality of life.

All existing energy sources have their pros and cons. We have to consider safety and waste management when developing nuclear energy, and strike a balance between supply, reliability, sustainability and economic development in the development of other sources.

Hydropower is defined as environmentally friendly, but droughts and floods make it unreliable. Bioenergy is upheld as clean, but it may cause food shortages. Solar power is considered one of most sustainable of energy sources, but the silicon used to make the solar panels is poisonous.

This talk will elaborate on the development of, and the complementary relationship between, new and existing energy sources. It will also propose plausible solutions to today's energy problems.

About the Presenter

Professor Way Kuo is President of City University of Hong Kong. He received the B.S. degree in Nuclear Engineering from National Tsing Hua University in Taiwan in 1972, and the Ph.D. degree in Engineering from Kansas State University in 1980, specializing in reliability engineering. His early work, *Optimal Reliability Design*, is deemed a classic in reliability research.

Professor Kuo is acknowledged as a pioneer in designing reliability of electronics systems & nuclear energy and has made breakthroughs in nano reliability research. He was elected a Member of the US National Academy of Engineering in 2000, the youngest ethnic Chinese member at the time. He is also a Member of Academia Sinica, Taiwan, and a Foreign Member of the Chinese Academy of Engineering, one of the very few scholars awarded with such honours by academies in the US, Taiwan and mainland China.

Professor Kuo pioneered the evidence-based assessment of teaching and research and has been invited by over 50 universities around the world to give talks on the result of the research. In recent years, the research report has been published in both bilingual format of English and traditional Chinese and simplified Chinese by the two Tsinghua universities in Beijing and Taiwan respectively, entitled *Clarifying Some Myths of Teaching and Research.*

He currently serves as Editor-in-Chief of *IEEE Transactions on Reliability*.

Keynote Speech II

"DANTOTSU Management"
A Company that Builds on Strengths from Generation to Generation

Mr. Masahiro Sakane
Chairman, Komatsu Ltd.

Abstract

Komatsu, which recorded an operating deficit in 2001, carried out a bold reform of the business structure and achieved a V-shaped recovery. The four keywords of the reform are “Visualization of management”, “Separation of costs from growth”, “Reinforcement of strong points & Reform of weak points” and “Only one big surgery”. The three keywords of growth are “Coexistence & Co-prosperity with Asia”, “Reduction of fixed cost” and “DANTOTSU products (featuring Environmental friendliness, Safety and ICT)”.

The definition of “DANTOTSU” is “To have superior advantages with which competitors won’t be able to catch up in a few years”. Today, Komatsu is providing customers with “DANTOTSU products” and “DANTOTSU product support” around the world. Komatsu is currently working to become a company that builds on strengths from generation to generation as a "Japan-based global company". Komatsu defines it corporate value as the “Total sum of trust given to Komatsu by all stakeholders”, and all Komatsu employees share “Komatsu’s strengths, beliefs that support the strengths, basic patterns of behavior as prescribed in the “Komatsu Way”.

What is the leadership in promoting the reform? What can a company do to win in the global manufacturing industry? What is the “DANTOTSU management”?

About the Presenter

I. Business Career

June 2010	Chairman of the Board
June 2007	Chairman & Representative Director of the Board
June 2003	President & CEO
June 2001 – June 2003	President
June 1999 – June 2001	Executive Vice President
June 1997 – June 1999	Executive Managing Director
June 1994 – June 1997	Managing Director
November 1990 – June 1994	COO of Komatsu Dresser Company (Currently, Komatsu America Corp.)
June 1989 – June 1994	Director
April 1963	Joined Komatsu Ltd.

II.. External Activities

Keidanren (Japan Business Federation)

Vice Chairman	from May 2010 to present
Chairman, Committee on Environment and Safety	from May 2008 to present
Chairman, Committee on Policy Review	from May 2010 to present
Co-Chairman, Special Committee for Recovery and Restoration	from March 2011 to present

III. Special Recognition

June 2003	Awarded the National Commendation for Invention (Japan Institute of Invention and Innovation)
November 2008	The Deming Prize for Individuals (Union of Japanese Scientists and Engineers)

Keynote Speech III

Understanding Excellence: Imperative for Performance Sustainability

Mr. Gregory H. Watson
Immediate Past Chairman
International Academy for Quality

Abstract

What does it take to have a truly excellent organization that is able to sustain a high level of performance as compared to its peers? Aristotle declared that excellence comes from habit. For an organization this means it has a disciplined way of doing its work; a habit that comes from following processes and procedures to the point of excellent control. But, some claim that an organization can come into a state of over-control where it is no longer innovative or flexible so it is also no longer able to agilely respond to changes in its environment. This also happened to the dinosaurs as they lacked the inability to rapidly fit new circumstances and it caused them to become extinct. Truly, organizations can change into rigid structures that are not responsive to competitive market forces and then they will lose their customers over time as more aligned alternatives break into the market. What is required to keep such a state of rigor mortis from happening to your organization?

To achieve excellence, organizations must master two change processes: breakthrough change that creates new products, applications of products, services, or technologies that improve the way customers can do their work. This is the innovative side of management. However, it is also an imperative that organizations manage the quality and consistency of its current market offerings to control the outcomes so they remain predictable, correct problems that occur in the production, delivery, installation, and maintenance process, and improve the performance and cost-competitiveness of the product through continual efforts at improvement. This is the control side of management. Excellent organizations that sustain their performance, as judged by marketplace competitiveness, must master both the innovative and control dimensions in the process of management.

This presentation will describe the theory of management control, expanding upon the theory of statistical control developed by Walter A. Shewhart and later expanded upon by W. Edwards Deming. The achievement of excellence is the objective where excellence is defined as the sustained performance of an organization as achieved incorporating innovation and control in a seamless operational strategy for advancing its profitable growth and market attractiveness.

About the Presenter

Gregory H. Watson is an Academician and Chairman of the International Academy for Quality. He is a past-President and Fellow of the American Society for Quality and a Fellow of the Institute of Industrial Engineers. He operates a Finland-based management and engineering consulting company, Business Excellence Solutions, and is an Adjunct Professor, Industrial Engineering and Management, Oklahoma State University. Previously, Mr. Watson held executive positions at Hewlett-Packard, Compaq and Xerox. He is known for his long-term consulting to Nokia Mobile Phones in the mid-1990s turnaround of its quality crisis which enabled both its phenomenal growth and achievement of the European Quality Award. Among the honors

that he most deeply prizes is being the first non-Japanese recipient of the Deming Medal from the Union of Japanese Scientists and Engineers when in 2009 he received the Deming Distinguished Service Award. He is also a recipient of the Distinguished Service Medal from ASQ and has received over twenty awards from regional and national professional quality organizations.

Keynote Speech IV

Quality – The Essence of Being!

Mr. Janak Mehta

President, International Academy for Quality (IAQ)
Chairman, TQM International Pvt. Ltd. (TQMI)

Abstract

Total Quality Management is a transformational process for building the Constitution of an organization for its long term sustenance in a competitive environment. Alignment of individual values with the organizational values in consonance with natural laws that govern the Planet Earth will be necessary to overcome its degradation caused by unbridled consumption. As the population grows and demographic profile changes the burden on Planet Earth grows.

In this context it may help to understand the basic nature of human being and its transformational experience that contributes to the way the person behaves with respect to the surrounding environment. This study may help us to develop means to influence this behavior of an individual and the organization that would cause less harm to the environment thereby preserving Planet Earth for future generations.

This is a practical guide to first understand the true nature of human being, identify the obstacles and how to substitute negative quality characteristics with the positive quality characteristics so as to unfold the essence of human being.

Organizations have a role in influencing individual behavior and each individual has an obligation to strengthen the constitution of the organization and the society.

About the Presenter

Work Experience: Business: 25 years
1963 to 1988 in various industries culminating as Chief Executive of BECO
Professional contribution towards quality, productivity and social aspects

Current position:
Consulting: 24 years
TQM International Pvt Ltd., Chairman & Managing Director since 1992
Confederation of Indian Industry (CII) TQM Division as Advisor 1988 to 1992

Honorary Work:
President – International Academy for Quality (IAQ) 2011 onwards
Honorary Director – Asian Network for Quality (ANQ)
Chair – Coordination Committee of World Alliance for Quality (WAQ) since 2011

Former:
Chairperson – Asian Network for Quality (ANQ) 2009-10
Founding President – Indian Society for Quality (ISQ) 1996-2003
Founder and Advisor – TQM Division of Confederation of Indian Industry (CII) 1988-1992

Chairman – Engineering Services Committee of Confederation of Indian Industry (CII) responsible for promotion of quality movement in India 1983-1988
President Nasik chapter of Chinmaya Mission, India 1980-1985
Janak Mehta has been involved in setting up various institutions for quality promotion in India and overseas.

Recognition:
Lancaster Medal – American Society for Quality (ASQ) 2012

Public speaking:
He has been an invited speaker and Keynote speaker at conferences across the world in over 27 countries including Japan, USA, Europe, China, Middle East, South East Asia, Central Asia, South Asia, Africa and South America.

Guide:
He has guided over 220 organizations from multinationals to large and medium private and public companies in India, the Middle East, the South East Asia, Europe and South Africa in their endeavor to enhance business performance through the application of TQM principles, concepts and techniques. He has been associated with various companies in India that have won the coveted Deming Application Prize of Japan.

IKA Awardees

List of Ishikawa-Kano Awardees 2012

Ishikawa-Kano Award

Criteria for IKA Award

- The awardee(s) of the IKA is not restricted to one person. Any candidate who meets the standard of IKA can be awarded.
- The person(s) chosen for the award shall have made contributions to the advancement or promotion of excellence through the theory and/or practice of quality management in Asian countries.
- He/she should have made contributions to quality-centered excellence in any organized human endeavor – manufacturing, infrastructure, services, health care, research/, education, social service or any other.
- He/she should have made significant contributions in the field of quality management in at least two Asian countries, preferably three or more.
- The contribution could be through research, publications, teaching, consultation, counseling, guidance and/or advice.
- He/she should have worked in this field for at least fifteen years, preferably longer, thus demonstrating commitment over a long period of time.
- The contribution is to be evaluated by the Award Committee as representing a high level of significance in terms of actual past results, but also considering potential for future application.
- The current members of the Award Committee and/or the current members of the ANQ Board shall not be eligible for consideration for the Award during their terms.

IKA Awardees

Ms Dong Mingzhu

Mr Liang Haishan

Mr Venu Srinivasan

Ms Dong Mingzhu, President of Gree Electric Appliances

Ms. Dong Mingzhu has devoted herself to Gree since 1990 from sales manager, senior manager, Vice GM, GM to President and Vice Chairman of Board. In May 2012, Dong was unanimously elected as Chairman of the Board, and reappointed as President of Gree Electric. Appliances Inc. of Zhuhai. Dong is also the member of 10th and 11th National People's Congress.

With Dong's great leadership, Gree has topped No.1 market share in China since 1995 and globally from 2005. In 2011, Gree's total annual sales is 83.5 billion in RMB yuan, net profit is 5.2 billion in RMB yuan, and tax paid exceeds 5.3 billion in RMB yuan.

Technology innovation is the key factor for Gree's success. With its own core technology, now Gree is a leading air conditioner brand from "Made in China" to "Created in China".

Mr Liang Haishan, Executive Vice President of Haier Group

Mr. Liang Haishan, joined Haier in 1988, is Executive Vice President of Haier Group, President of White Goods Group, Vice Chairman and General Manager of Qingdao Haier Co., Ltd.

Having closely followed the strategic objective of Leader and Regulator of Global White Goods, Mr. Liang leads the company to innovative the practical operational model to realize win-win result and leading achievement globally. On December 15, 2011, Euromonitor International released that Haier White Goods was listed No.1 with global market share of 7.8% for the third consecutive year. Haier's white products take eight No.1s home.

Mr. Liang received many honors including National Outstanding Entrepreneur and Excellent Champion at Shandong Light Industry etc.

Mr Venu Srinivasan, Chairman of TVS Motors

Date of birth: December 11, 1952

Marital Status: Married with two children, Wife - Industrialist - Mrs.Mallika Srinivasan, Chairman of TAFE Ltd., one of India's largest manufacturers of tractors and farm equipment

Qualifications: Bachelor of Engg (Madras University) - 1974
MSM (M.S. degree in management) - 1976
From Purdue University, U.S.A.

Positions

Sundaram-Clayton Limited, Chairman, Leading manufacturers of auto components
TVS Motor Co Ltd. , Chairman, India's third largest manufacturer of powered two-wheelers
Director of TVS & Sons Ltd , Lucas-TVS Ltd, Sundram Fasteners Ltd, Cummins (India) Ltd
Tata Coffee Ltd, Oriental Hotels Ltd
Honorary Consul General of Republic of Korea, Chennai
Member, Prime Minister's Council on Trade & Industry, Government of India
Member, Prime Minister's National Integration Council, Government of India
Member, Prime Minister's Scientific Advisory Council, Government of India
Member, National Manufacturing Competitiveness
Council, Government of India
Member, National Institute of Design, Government of India
Chairman, National Institute of Fashion Technology, Government of India
Chairman, National Safety Council, Government of India

Awards

Conferred "Padma Shri" in the field of Trade & Industry, by the President of India, for the year 2010.
"Order of Diplomatic Service Merit" by the President of the Republic of Korea, 2010.
Conferred with the honorary "doctorate degree in science" by the University of Warwick, U.K. for excellence in manufacturing and contribution in the field of technology and R&D, in 2004.
Jamsetji Tata Life Time Achievement Award for the year 2004 by the Indian Society for Quality.
J R D Tata Corporate Leadership Award for the year 2004 by All India Management Association.
Doctor of Science (Honoris Causa) by IIT Kharagpur, India, for outstanding contribution to the field of Quality Movement and Manufacturing Excellence in India, in 2009.
Sundaram-Clayton Ltd, First company in India to have been awarded with the Deming Prize by the Union of Japanese Scientists and Engineers, in 1998.
Awarded with the Japan Quality Medal by the Union of Japanese Scientists and Engineers, in 2002.
TVS Motor Company Ltd, awarded Deming Prize by the Union of Japanese Scientists and Engineers, in 2002.

Services

Education - TVS Educational Society runs three schools as well as a vocational & advanced training centre to provide training in the disciplines of industrial machinist, mechanical maintenance and electrical & electronics.
Agriculture and social welfare - A leader in the area of corporate social responsibility. Have been carrying out integrated rural development programmes in over 700 villages across India. This is done in a sustainable manner to support the self-help groups for income generation and employment catering 30,000 families below the poverty line. TVS Agriculture Sciences Research Institute has successfully promoted organic and eco-friendly agricultural practices.

ARE-QP Awardees

List of ARE-QP Awardees 2012

ANQ Recognition for Excellence in Quality Practice (ARE-QP) Award

About ARE-QP Award

Launched in 2011, the Award aims to recognize good quality practices among ANQ organizations. The scope of the Award covers specific activities in an organization, rather than the whole organization. The systems, approaches, philosophies and so forth designed to achieve one or more of the objectives listed below can be a basis for granting the ARE-QP Award:

- Enhancing senior leadership and enabling organization management effectively and efficiently
- Enhancing and supporting improvement of quality, cost, delivery, safety, environment and so forth
- Supporting standardization and daily management for effective and efficient implementation
- Supporting new product, service and technology development effectively and efficiently
- Collecting, analyzing and implementing quality information for effective and efficient TQM
- Deploying small group activities, as well as education and training system
- Others for TQM promotion

Criteria for ARE-QP Award

- Effectiveness: It is implemented in the organization and it improves performance
- Repeatability: It is formulated as a system that enables performance improvement in other similar situations
- Innovativeness: It contributes to TQM progress because of its innovativeness

There are 12 organizations nominated for the ARE-QP Award 2012:

CAQ

Bosideng Co., Ltd.

Yanzhou Coal Mining Company

CSQ

Taipei Rapid Transit Corporation

Unimicron Technology Corp.

HKSQ

MTR Corporation

IAQMA

National Research Medical Center, Astana city, Kazakhstan

State Medical University, Semey city, Kazakhstan

ISQ

Auto Sector of Mahindra and Mahindra Ltd

ROQ

Ufa State Petroleum Technological University

SQAT

Energy Regulatory Commission of Thailand (ERC)

PTT Public Comapany Limited (PTT)

VQAH

Red Star University, Hai Duong Province, Vietnam

NON-STOP PURSUIT OF EXCELLENCE

Bosideng Co., Ltd. CHINA

Bosideng Co., Ltd (hereinafter referred to as Bosideng) is an enterprise focusing on designing, manufacturing and selling of down apparel with its own research and development facilities. The company has six manufacture plants in China, with a staff of 11827 people. In 2010, Bosideng had a sale revenue of 15.8 billion RMB. The four brands owned by the company, “Bosideng”, “Snow Flying”, ”Kangbo” and ”Bengen” down apparel products achieved a combined market share of 35.4% in China. Bosideng is the leading down apparel brand in China, with the brand value of 18.016 billion RMB in 2010. The sale of down apparel held the NO. 1 record in China for 16 consecutive years from 1995 to 2010, and the numbers were far higher than all the competitors. For 15 consecutive years (from 1997-2011), Bosideng introduced the latest fashionable Fall/Winter apparel trends to the world on behalf of China at the “China International Clothing and Accessories Fair”. The company won three awards, including “World-Famous Brand”, “China Industry Award” and “China Quality Award”, and no other counterparts in Chinese industry had similar achievements.

A. Brand Management, Structure Optimization & Brand Value Maximization

Guided by the spirit of “Non-stop Pursuit of Excellence”, Bosideng highly values innovation, structural adjustment, industrial redirection and upgrading, as well as resource integration. We are trying to shift from manufacturing goods with low added value to creating an industrial value chain featured with high-added-value commodities. We not only provide quality products, but more importantly establish a well-known brand driven by innovation. The company now expands the product lines to man, woman, child and leisure clothes. Based on our previous strategy of “multiple brands for one product and multiple products under one brand”, we now have a new strategic path of developing clothes suitable for all seasons and for all nations, and we will establish more than one brand. Our ultimate goal is to become a world-famous comprehensive clothing corporation. In terms of our efforts in diversified development, Bosideng menswear entered the British market, becoming the first Chinese menswear manufacturer in Europe. We acquired the ownership and sale right of Rocawear – an American brand for leisure clothing–in the greater China Region. We also launched a lady’s wear line – RICCI – for clothes not limited to winter wear. In July and October, 2010, we won the titles of “China Top 10 Brand” and “Most Valued Chinese Brand”. We are striving to realize our vision through industry redirection, brand extension and diversification.

A distinctive brand system was established through innovation and continuous practices. Our subsidized brands all have their own features and fulfill their different roles for the development of the company. The company has reorganized the existing four brands by consulting Roland Berger – a world known consulting company. Each brand is assigned with its specific role. Now, product design, image, promotion, and sale channel around each brand is unified and coordinated under the guidance of the brand system and scientific operation. The company will focus on innovation in bid to create a brand culture in line with personal needs of target customers. We are striving to become a high-end brand, featured with design and fashion, with great influences in both domestic and overseas markets. We are trying to innovate the international sales channels model, pay special attention to potential brands and overseas sale networks in global market, and we plan to accelerate our development through merger & acquisition, equity investment and other forms of international cooperation.

B. Comprehensive Quality Management System

1. We focus on listening to the voice of our customers and believe that high-quality design derives from understanding customer needs exactly. Therefore, we have extensive researches on customers' needs, expectations and preferences, through service tracking, customer questionnaire and satisfaction monitoring. All the researches are designed according to different customer groups and different sale regions. Specialized companies are often hired to help us gather the information.

2. We implement reliability engineering during product design process to prevent serious problems in mass production. When developing a new product, the new raw material will be tested first and only the one meeting Bosideng standard will be used. Designer Center will examine the design draft, technology applied and samples, to prevent any quality problems that might occur during manufacture. When sample clothes are completed, the Raw Material Inspection Center will apply washing tests to make sure customers will not have any further problems. And we are the first company who applied such test in the industry.

3. We scrutinize our suppliers' qualification and product quality strictly according to ISO9001:2000 standard in supply chain management process. We send technicians and quality inspectors to all our suppliers, to verify their scales, equipments, facilities and quality control procedures. Before purchasing, we guarantee the quality of the materials through a systematic inspection and examination. The purchase fails our inspection will be rejected. Our purchase department is wholly responsible for all purchases. The person in charge will be punished if any quality problem occurs. We also have an appraisal for all suppliers once a year, to guarantee the quality of products and the credibility of the suppliers, and we will sift the suppliers again based on the appraisal.

4. We have three levels of quality inspection and sampling inspection in producing process to make sure that all products are under control. We also welcome all staff and customers to give us suggestions on how to better control qualities and improve our technologies through well-established channels. Now, the whole production is closely monitored to make sure every product is of excellence. From the moment raw materials are purchased, to the design and production, and to the final inspection, every single step is guaranteed problem-free.

5. The company has customer service department to offer consulting, repairing, exchanging and refunding services. All customer letters, emails, and calls are documented and processed. We hire specialized people to pay visits to our customers for feedbacks. We organize meetings with customers, open hot lines, and have campaigns on Mar 15th Customer Day. We collect, analyze, and summarize customers' complaints and suggestions, in order to improve our products. This information is also valuable for new product development.

C. JIT Management, Higher Efficiency and Lower Costs

1. We carry out lean process management, collect real-time data from every single production control point, to keep all production links work at the same pace, in order to maximize our efficiency. We expect more than 3.12million products in 2010 and 10 million ones within the next three to five years.

2. We establish a modern logistics management system, and achieve the coordination of the whole supply chain. We invested over 200 million RMB in our new logistics center, introducing WMS system. Now the whole storage can be documented and tracked digitally. Within the next one to three years, the delivery and inventory capacity will be increased by

20 to 40 percent. The warehouse capacity will reach 500,000 pieces a day. The delivery accuracy will reach 100%. We will have more effective control over OEM excess inventory and outstanding-order-delivery in branch companies.3. We established supply chain management department, introduced agile supply chain management tools, and integrated the process of factory management, supplier appraisal, cooperation policy made, performances evaluation and so on. In this way, the agility and efficiency of supply chain will be improved in line with the fast-changing markets.

D. Support Industry Standard, Increase Influences

We established Scientific Technology Association to introduce and apply advanced international standards. At the same time, a group of senior management led by vice manager of quality department is working on the draft and execution of standard-adoption plan of the company. The company has obtained the "Certification of Adopting international standard" issued by Standardization Administration of the PRC (SAC). For example, we adopted the Oeko-Tex Standard 100 – an advanced international eco-textile clothing standard, and modified it into our company standard – Q/320581AUW003-2004. In 2008, China Clothing Standardization Technology Council has its secretariat office in Bosideng, signifying that we have become the leading company in setting the national standard. In July 2010, the sixth Convention on ISO/TC133 Clothing Size and International Standard Code decided to have China and South Africa to co-shoulder the responsibilities as ISO/TC133 Secretariat and to draft international standards. Bosideng was actively involved in helping the Secretariat settle in China, promoting Chinese industry's contribution in this field. Now, we are involved in the drafting of one international standard, 5 national standards and 2 industrial standards, and we have drafted 218 enterprise technological standards too.

APPLYING PERFORMANCE EXCELLENCE MODEL, ACHIEVING QUALITY DEVELOPMENT

Yanzhou Coal Mining Company Ltd. CHINA

Yanzhou Coal Mining Company Limited (hereinafter referred to as the Company), is a company engaged in coal production, washing processing, sales of coal, railway transport, coal chemical, electric power and other business. Located in Eastern China, the most economically developed area in China and the frontier of “North to South Coal Transfer “project, the Company is one of the largest, profitable and safe coal mining enterprises in Eastern China. At present, the Company has 63684 employees, produced 49.4 million tons of raw coal in 2010 and made a total income of 34.844 billion RMB and a total profit of 12.114 billion RMB in 2010. The Company is currently the only coal mining enterprise listed in three locations both domestic and abroad. The Company is the first enterprise in China’s coal industry which completed s acquisition of oversea coal resources and the Company is also the first company in China coal industry who outputs coal mining technology and equipment to developed countries. The company won China Quality Award twice, and was selected by the standard &poor's index as one of the 30 stocks most valuable for investment.

A. Establishing of technology innovation system and enhancing of core competency

The Company adheres to independent innovation, establishes and perfects multi-leveled innovation system combining production, study and research. Based on the national technical center, enterprise postdoctoral research stations, national key laboratory for coal liquefaction and coal chemical industry, national engineering research center for coal water slurry gasification and coal chemical industry and so on, the Company set up a high level development platform and made a series of developments: the Company’s independent research and development of the full-mechanized caving technology for thick seam has continuously made new breakthroughs; the Company has fully independent intellectual property rights of the "two pillar type caving hydraulic support", which was patented both in Australia and China; "the research of full-mechanized and information caving mining level highly reliable equipment and technology with an annual output of 6 million tons " has reached the international advanced level, which further established the Company’s international leadership in core technology of fully mechanized caving coal. During the last three years, the Company has completed 234 major scientific and technological achievements, including 70 achievements which reached the international advanced level. The Company gained 2 second prizes of national science and technology progress prize, 101province or ministry level science and technology progress prizes. The company has filed 71 patent applications and obtained 65 patent licenses. The company actively involved in formulation of national, industry and local standards and presided over the formulation of one industry and 12 local standards. Leading technology and strong independent innovation ability provide strong support for the Company to build a main-industry highlighted international large-scale enterprise with strong core competitiveness.

B. People oriented, establishing of safe production management system

The company sets up a "three as" (that is people as the principle, safety as the priority concern and prevention as the main method) safety concept; enforces a process of the "six pre” (pre-teaching, pre-determination, pre-thinking, forecast, pre-warning and pre-control) in which prevention is the core concept ; implements of five risk pre-control systems (idea

guidance, system standard, mechanism guarantee, scientific and technology support and quality promotion); revised and perfected 17 system standards; compiled and formulized safety knowledge manuals for different work posts and multimedia simulation teaching materials. The company safety quality has been standardized, the safe and effective mine construction continues to keep the advanced level of the industry. From the second half of 2006 until present, the Company has kept a record of zero death with a raw coal production of one million tons, reached a leading level among the domestic counterparts.

C. Emphasizing Environmental Protection, fulfilling social responsibilities.

The Company actively performs social responsibilities in environmental protection, circular economy, takes various measures such as strengthening environmental protection and energy saving goals and responsibilities management and control system construction, strengthening the environmental protection and energy saving key projects management, conducting environmental protection and energy saving technology research and application, deepening clean production examinations, energy examination and environmental management system operation and promoting construction of ecological civilized mining area. The Company has made a series of achievements and among other honors, the Company has been given the honor of "the environmental friendly enterprise". During the twelfth Five-Year plan period, the Company’s environmental protection and energy saving work will continue the company’s development idea and closely combine with the development planning of the Company. With technology innovation as the support, comprehensive utilization as the core, energy conservation and emission reduction as the goal, management system as the grantee, efficiency improvement as the power, the Company will on a basis of three stages and surrounding four systems, try to achieve a goal of "four achievements" and eventually realize the Company’s "green mining, scientific mining" development vision.

D. Strengthening process management and improving process efficiency

During the production process, the company applies advanced technologies, tools and method, and takes effective control measures to ensure the achievement of the performance target. In the coal production process, the Company undertakes the quality standardization construction, customized management, process control, lean management, etc.; during the washing and selecting process, the Company implements microcomputer and industrial television monitoring, main process automation, production ash content online monitoring. Through the use of full-mechanized caving technology for thick seam, the Company basically realized the intellectualization and automation of coal mining, coal storage, coal transportation and other production process; the Company’s full-mechanized caving technology for thin coal seam has made major breakthrough, realized mechanization of coal cutting, support, transportation and the whole process, creating the highest daily production. Compared to blasting mining of the same type, the efficiency increased by 296% with the cost reduced enormously. At present, the recovery rate within the Company’s mining area is at the industrial advanced level.

E. Innovative Financial Management, strengthening risk control

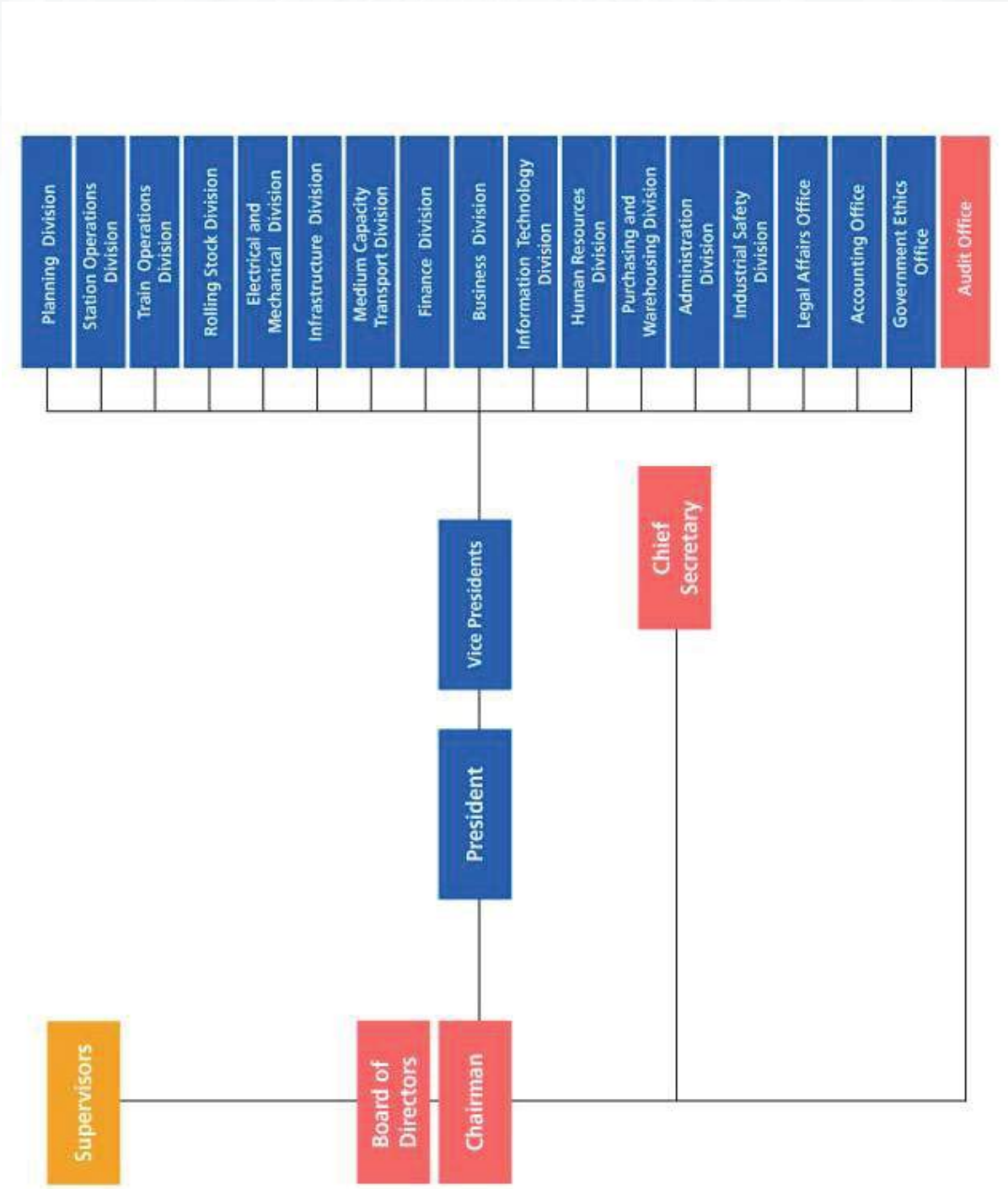
The Company has set up a new financial management system with a character of “level 3 accounting, level 4 management and six levels analysis", and perfected, a united, comprehensive, integrated and real-time share management information platform with finance as the core. The Company implements levels 4 cost control responsibility system and carries out full stuff, full elements and whole process cost control. The Company has

established a unique budget management mode which emphasizes sales, cash and cost. The Company tightens control of unproductive spending and perfects budget input and control process and strengthens standard budget adjustment and evaluation redemption. The Company adopts innovative financing, designs and implements offshore financing plan of “inside guarantee and outside loan”. The Company has established a global cash management system, in which domestic subsidiaries promote ZPG cash management system while the offshore subsidiaries perfect production and management scheduling control system and implements offshore accounts management system to ensure the domestic and offshore subsidiaries’ financial funds to be integrated and centralized managed, hence improving the capital operation efficiency. The effective management of financial resources provides reliable funding for the company’s strategy implementation. The company emphasizes strengthening internal control system and the Company digests the 120 focus as to the five aspects of environment control, risk assessment, control activities, information and communication and internal supervision, formulized the internal control basic standards and continues to comb internal control standard process. The Company also designed a set of internal control system in accordance with both domestic and offshore listed company. Therefore, the company’s ability to perform overall risk management has been improved and further laid out the foundation for the establishment of scientific and effective international operation control mode.

INTRODUCTION TO TAIPEI RAPID TRANSIT CORPORATION

Wen Chao Su and Yen Ping Huang, Taipei Rapid Transit Corporation

ORGANIZATION



Activities Performed to Get Outstanding Results

TRTC has striven to provide a safe, convenient, and comfortable travel environment. It continued to enhance its existing facilities and equipment and raise service quality, so passengers could enjoy better and more considerate service.

System Safety

To improve service quality and establish a safe transport environment, apart from carrying out system equipment and train maintenance and repair work, TRTC strives to reduce the occurrence of metro delays that last five or more minutes, find the cause of each incident and make improvements. It also holds disaster simulation drills and works to strengthen employee training.

Passenger-friendly Services

TRTC has always worked hard to offer a convenient and comfortable travel environment for its passengers, and the public has approved of previous measures it has implemented to improve services. TRTC continued to put forward innovative and friendly service policies. Key measures included:

24-Hour Customer Service: TRTC provides a diverse range of communication channels, including a 24-hour customer service hotline and an electronic company mailbox.

Breastfeeding Rooms: To meet passenger needs and assist women in their right to breastfeed in public places, TRTC added breastfeeding rooms at transfer stations, where capacity tends to be higher.

Bringing Bicycles onto the Metro: Passengers can take their bicycles on or off the metro on weekends and holidays before 4pm at 15 designated stations.

Wi-Fi Access and Free Battery Charging Service in Metro Stations: 276 Free Wi-Fi access points installed. The charging sockets are set up above the wireless Internet connection table.

Launch of Free Metro Newspaper: 190 newsstands located by the gates of all stations.

Barrier-free Access for disadvantaged groups: Installing more elevators and escalators in stations, voice announcement about which side train doors will open, power wheelchair recharging service in stations and Visually-impaired passengers guide service.

Innovative Measures

Platform Screen Doors: Installation of more PSD on operating metro lines.

Track Intrusion Detection System: Integrated Infrared Beam Sensor, Motion Detector and Dome Camera to detect the track intrusions, alert station agent and inform the driver.

R&D Center: Repairing electronic circuit boards ourselves to ensure smooth operation and saving tremendous maintenance time and cost.

Interactive Emergency Evacuation Exhibition Center: Installed with 18 theme activities for educating citizens and staff to operate emergency equipment which cannot be easily accessed in stations.

INTRODUCTION TO UNIMICRON TECHNOLOGY CORP.

Tzyy-Jang Tseng, Chairman & CEO, Unimicron Technology Corp.

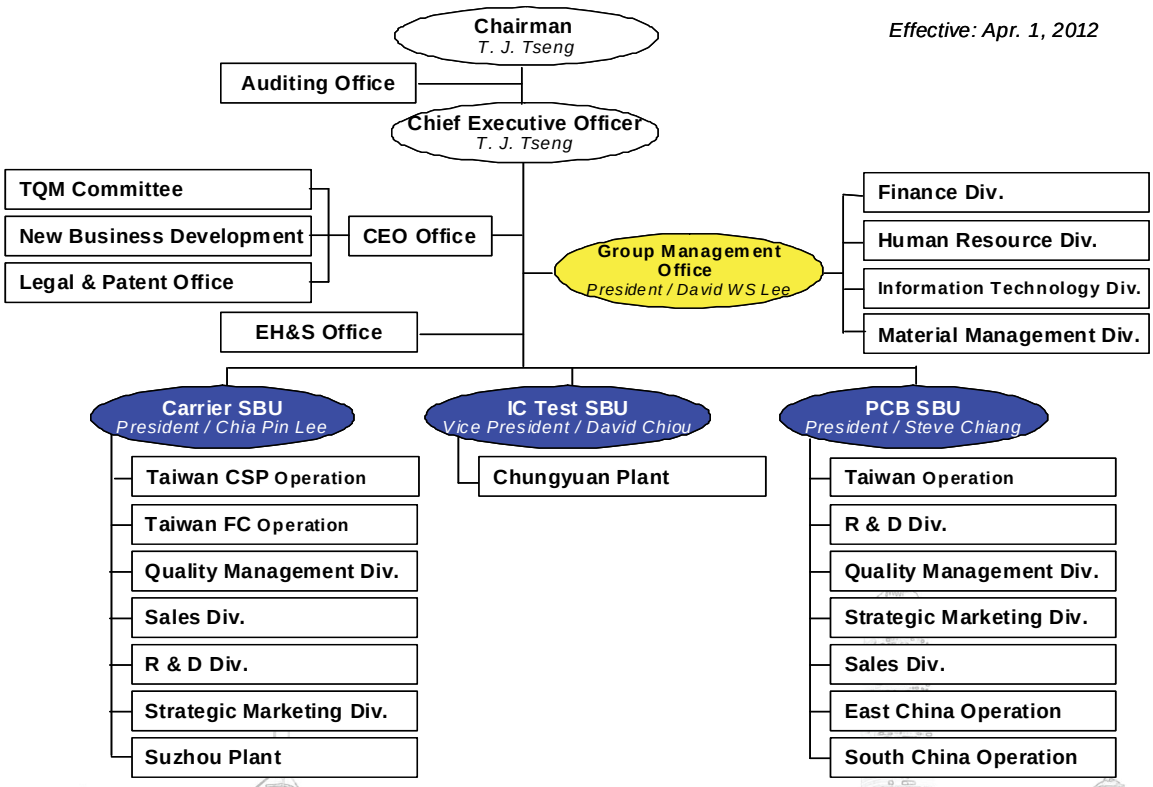
Mission

- Service and quality oriented to fulfill customers' satisfaction.
- Become the most successful electronic component and material supplier in the world.
- Create an energetic and harmonious working environment for employees.

Established	Jan., 1990
Location	**Taiwan:** Taoyuan, HsingFeng **China:** Shenzhen ,Suzhou, Kunshan
Registered Capital	NT$15.39B (US$508M)
Strategic Business Unit	PCB / Carrier / IC Test
Employee **(Jan.31, 2012)**	**Taiwan: 9,408 China: 11,726**
Main Products	**PCB SBU :** Conventional PCB, HDI (High Density Interconnection), Rigid-flex, FPC (Flex PCB) **Carrier SBU :** CSP (Chip Scale Package), FC (Flip Chip) **IC Test SBU :** IC Burn-in and Testing
Sales figure in 2011 (Consolidated)	Revenue: NT$66B (US$2.25B)
	Pre-tax Profit: NT$5.6B (US$0.19B)

Organization

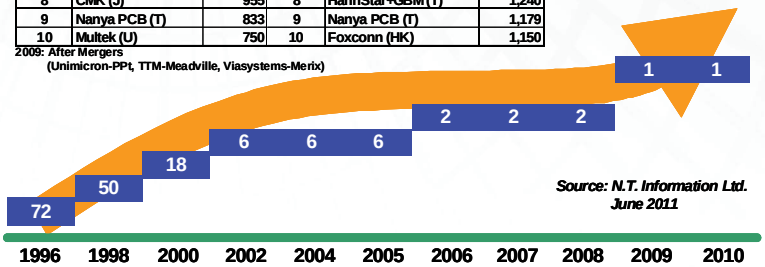
Effective: Apr. 1, 2012

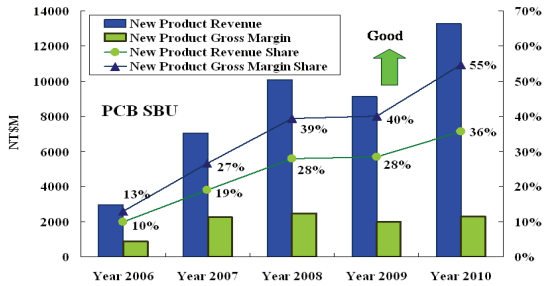


Activities	Outstanding Results
Ⅰ.Satisfy customer needs and beyond customer expectation through "VIP Customer Service System."	1. All 10 VIP customers satisfaction ranking in No.1 and No.2 in 2009. 2. Became PCB industry worldwide ranking No.1 Company.

2009			2010		
Ranking	PCB Supplier	Revenue (US$M)	Ranking	PCB Supplier	Revenue (US$M)
1	Unimicron Group (T)	1,763	1	Unimicron Group (T)	2,179
2	Ibiden (J)	1,722	2	Ibiden (J)	2,114
3	Samsung E-M (K)	1,277	3	Nippon Mektron (J)	2,106
4	Nippon Mektron (J)	1,205	4	Tripod (T)	1,370
5	TTM (U)	1,160	5	TTM (U)	1,366
6	Tripod (T)	1,010	6	Samsung E-M (K)	1,280
7	KB Group (HK)	985	7	KB Group (HK)	1,240
8	CMK (J)	955	8	HannStar+GBM (T)	1,240
9	Nanya PCB (T)	833	9	Nanya PCB (T)	1,179
10	Multek (U)	750	10	Foxconn (HK)	1,150

2009: After Mergers
(Unimicron-PPt, TTM-Meadville, Viasystems-Merix)



Ⅱ.Successful to develop advanced HDI / Carrier technology for advanced mobile device application.	1. New products sales revenue contribution.  2. Mobile device application shipment ranking

Year	2005	2006	2007	2008	2009	2010
Global HDI production ranking	3	1	1	1	1	1
Global cellular PCB shipment ranking	3	2	1	1	1	1

Ⅲ. TQM Promotion	1. 2005 won Taiwan National Quality Award 2. 2008 Chairman T.J. Tseng won Taiwan NQA Individual Award. 3. 2011 won Deming Application Prize.

CUSTOMER EXPERIENCE INITIATIVES IN PURSUIT OF RAILWAY SERVICE EXCELLENCE

Adi Tin-shing LAU, Chief of Operating, MTR Corporation

Profile of MTR Corporation

The government-owned Mass Transit Railway Corporation created in 1975 was reestablished as MTR Corporation on 30 June 2000 to prepare for its listing on the Stock Exchange of Hong Kong on 5 October that same year. Its principal business is to build and operate safe, reliable and efficient mass transit railways to meet public transport needs.

In December 2007, the operations of MTR Corporation and Kowloon-Canton Railway Corporation were merged to form one of the most efficient and far-reaching railway networks in Asia.

The expanded system extends all the way from the heart of the Central Business Centre and shopping hub Causeway Bay to the New Territories and Lantau Island. Its 218.2km of track covers 82 stations on the Kwun Tong, Tsuen Wan, Island, Tung Chung, Tseung Kwan O, East Rail, West Rail, Ma On Shan and Disneyland Resort lines. MTR Corporation also operates a 35.2km Airport Express service and a 36.2km Light Rail network which can take people to Hong Kong International Airport and 68 stops in the North West New Territories. It also provides speedy through train services to major cities across the Mainland of China. Helping more than 4 million people reach their destination every weekday quickly and efficiently, the MTR is regarded as one of the world's leading railways for safety, reliability, customer service and cost efficiency.

2. Customer Focus as Corporate Strategic Intent

2.1 Vision, Mission and Values

Before the merger, the two companies had different sets of Vision, Mission and Values (VMV) and working culture. To signify the start of the merged company and set an aligned direction for all staff, a new set of VMV was required in the cultural change process. The *Vision* of the merged company is enshrined in a new corporate statement – "**We aim to be a globally recognized leader that connects and grows communities with caring service**" whilst the *Mission* is to:

- **Enhance customers' quality of life and anticipate their needs**.
- **Actively engage in communities we serve**.
- **Foster a company culture that staff can learn, grow and take pride in**.
- **Provide sustainable returns to investors**.
- **Set ourselves new standards through innovation and continuous improvement**.
- **Grow in Hong Kong, Mainland of China and capture opportunities in Europe by extending our core competencies**.

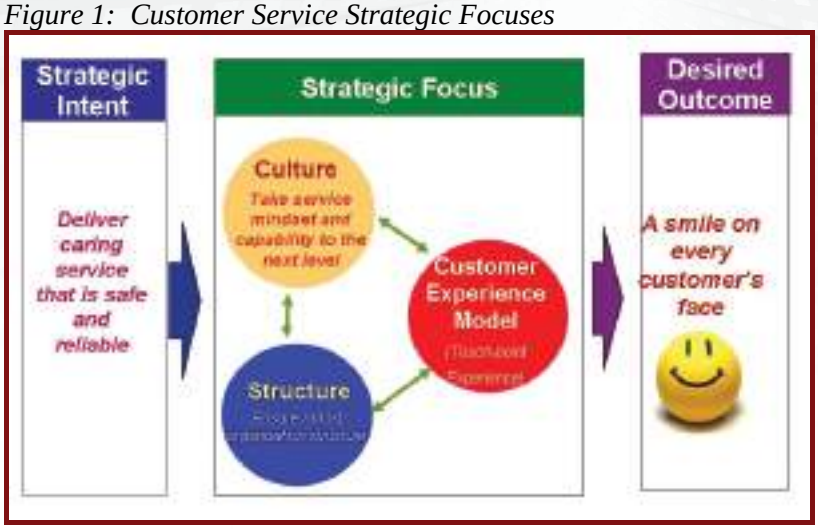
The corporate *Core Values* of "**Excellent Service**, **Value Creation**, **Mutual Respect** and **Enterprising Spirit"** are also developed to balance the interests of the Corporation's key stakeholders. With this new set of VMV, the merger has placed the Corporation in the best position to extend its active promotion of sustainable development for both the economy and society. An integrated rail network allows for improved planning, design and construction of new extensions, providing the best possible connection and cost-efficiency. The five new railway projects currently under design or construction in Hong Kong will extend the Corporation's services to new districts and further integrate its network into that of the Mainland of China, including the rapidly expanding high speed rail network.

2.2 Customer Service Strategic Focuses

MTR Corporation's VMV and its core competencies serve as the foundation for determining and innovating its services to meet the requirements and exceed the expectations of its customers. For example, "To deliver caring service that is safe and reliable" (illustrated in Figure 1) is one of the

strategic intents among the Corporation's customer service strategies. Strategic focuses are then identified to take service mindset and capability to the next level, and enhance the customer experience.

Figure 1: Customer Service Strategic Focuses



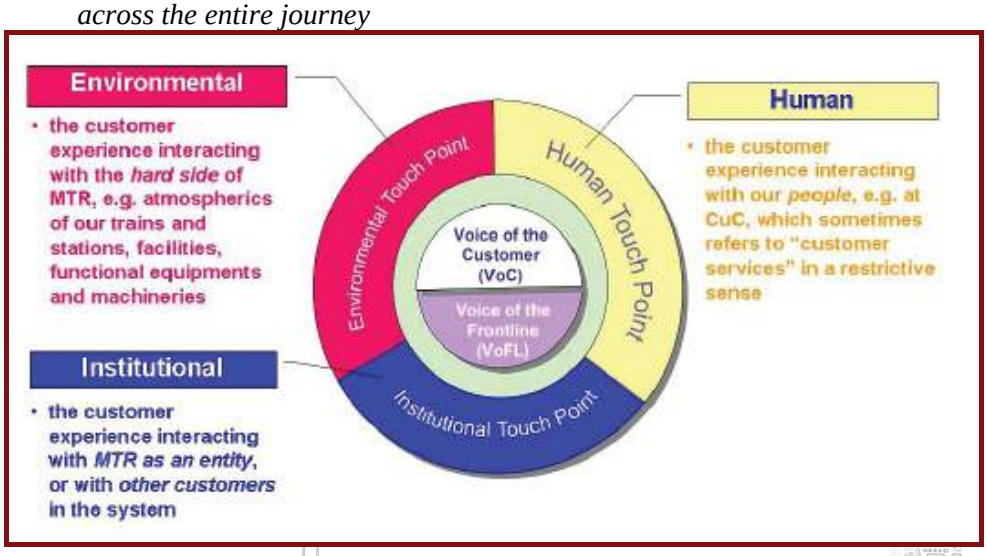
3. Customer Experience Model

Being a customer-oriented railway, MTR Corporation places high priority on identifying and meeting the requirements, expectations and preferences of its customers.

The Corporation uses a variety of methods to keep its approaches for identifying / innovating its services and providing customer support current with business needs and directions. For example, customer service strategic focuses are reviewed by the Customer Service Steering Committee (CSSC) every year. The review is taken through a robust process.

The Corporation adopts the Customer Experience Model (Figure 2) as a management tool to drive service excellence. The goal is to establish a common language for communicating the desired culture across the Corporation. The Model helps to identify key levers for managing continuous improvement in the customer experience, as well as reinforcing an empathetic mindset among staff.

Figure 2: Customer Experience Model – Managing for Service Excellence at touch points across the entire journey



3.1 Human Touch Point

The Human Touch Point is essentially related to the staff–customer interaction, e.g. at the Customer Service Centre.

Through the integration of its customer-focused VMV into all aspects of its business running, MTR Corporation has built a culture that fosters customer engagement and facilitates a consistently positive experience for its customers. For example, to promote a service culture across the Corporation and service excellence with safe, reliable and efficient railway operations, all staff are committed to providing warm and caring service to the customers from the heart. The launch of the corporate-wide campaign, Year of the Customer since 2006 has enhanced customer care among frontline staff through the pledge that "As one team, MTR staff serve you deep from the heart".

The Corporation has designed its workforce performance management system to support its VMV including the manifestation of our staff empathy culture and behaviours. Annual appraisals of staff are linked to the VMV.

3.2 Environmental Touch Point

The Environmental Touch Point refers to the customer experience in interacting with the hardware of the MTR, specifically the atmospherics of the trains, stations, facilities, functional equipment and machinery.

As an integral part of the customer service strategies, MTR Corporation always considers ways to improve overall service including station facilities and the environment. Among the major recent initiatives for the MTR are upgraded service headway, refurbished station toilets and public trials for MTR Mobile using iPads. Regarding accessibility, the installation of external lifts, additional wide gates, and associated facilities and aids for the provision of wheelchairs reflect the Corporation's continuing enhancements at stations for the elderly and passengers with disabilities.

3.3 Institutional Touch Point

The Institutional Touch Point is about presenting the MTR as an entity to individual customers and the community, as well as the customer-to-customer interactions within the system. This comprises the corporate and social components of the service that can impact the customer experience.

The Corporation fully recognizes the interrelationship between its growth as a company and the well-being of the communities it serves. A key objective of the MTR Corporate Responsibility Policy is to enhance the quality of life and actively engage in the communities where it operates. These efforts fall under its Community Care Action programme, which focuses on Youth Development, Community Outreach, Art & Culture and Green & Healthy Living.

The Corporation's initiative "'Friend' for life's journeys" targets secondary school students. It aims to broaden their horizons and equip them with useful life skills through a variety of activities. Launched in December 2009 and continuing into 2012, the programme pairs about 100 secondary school students each year with 100 young staff volunteers who act as mentors, sharing insights and bringing the students a new perspective. The other youth initiative is "'Train' for life's journeys", which provides more than 120 secondary school students a year with personal development and hands-on experience of railway operations. In addition, more than 350 students have benefitted from the learning experience through participating in the Customer Service Ambassadors programme since 2006.

The Corporation's "More Time Reaching Community" scheme has again seen enthusiastic support from staff who participated in a total of 206 volunteering community service projects during 2011 involving over 5,600 volunteers. Visits to and from schools, community centres, aged homes, etc. are regularly made so as to enhance the corporate image and the public's understanding of the Corporation's services.

The Corporation maintains its support for local art and culture through the "art in MTR" programme. It also often supports community events by providing free advertising space to non-profit making organizations.

3.4 Voice of the Customer (VoC)

MTR Corporation uses various means to engage customers by building a customer-focused culture for long-term success and also to listen to the voices of the customers in order to meet their requirements and exceed their expectations.

For example, annual passenger surveys and half-yearly customer satisfaction studies (VoC surveys) are conducted to keep track of customers' demographic and travel characteristics as well as their levels of satisfaction regarding MTR services. Mystery customer surveys are also conducted to monitor the "moment of truth" of the customers encountering the MTR system. To identify and meet the expectations and preferences of customers and the market at large, different channels are also established to allow customers to express their views and experience with the MTR. These include:

- MTR Hotline
- MTR Opinion Zone at stations and on train
- MTR Club
- MTR Facebook
- Phone-in Radio programme, and
- Customer Opinion System to lodge and use the customer feedback for improvement.

A Corporate Customer Service Steering Committee (CSSC), composed of senior managers, is in place to set direction and regularly monitor and review the customer service initiatives (illustrated in Figure 3).

Figure 3: Customer Service Strategic Focus & Initiatives Formulation by VoC

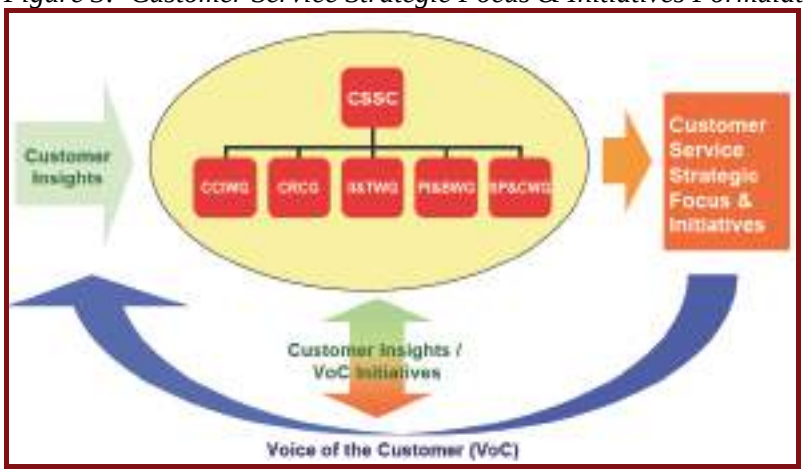


Figure 4: "Voice of the Customer" Tools Map

Orientation / Approach	Evaluative	Proactive
Unstructured	• PSR: Customer complaints and compliments; • Social media monitoring; • MTR Hotline; • Monthly Phone-in Radio Program	• MTR Opinion Zone; • PSR: Customer suggestions
Structured	• Customer Service Performance; • Mystery Shopper Survey; • Regular and ad hoc customer surveys	• VoC Survey • Focus Group Studies • Suggestion Box and feedback form at Stations

The current channels (highlighted in Figure 4) provide a multi-dimensional capturing of VoC, which enables synthesis into actionable customer insights. Take the latest digital technology that brings more digital passenger information as an example.

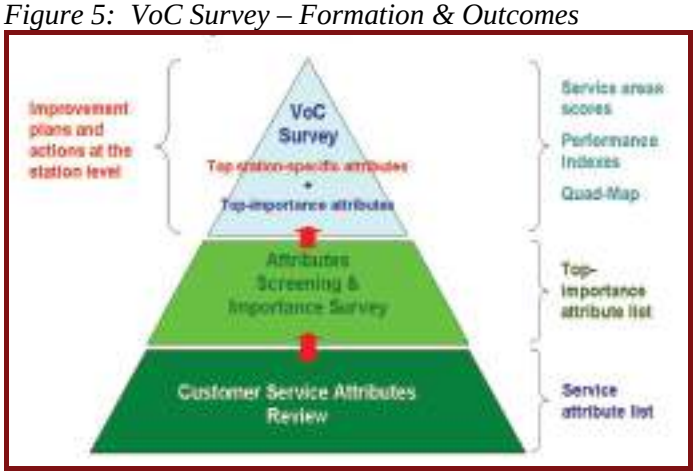
MTR customer service is continually evolving along with technology and the Corporation always keeps it current with customer needs. During 2011, the Corporation introduced MTR Mobile, as well as iPhone, iPad and Android applications for the benefit of passengers. These user-friendly tools help the customers to plan journeys and access information about stations, MTR Club, MTR shops, as well as landmarks and facilities en route. With the popularity of smartphones, the Corporation has also been exploring ways to build on the success of the 'MTR Mobile' App to deliver timely information directly into the hands of its passengers.

3.5 Voice of the Frontline (VoFL)

For the voice of the customer (VoC) to be addressed as expeditiously and precisely as possible, the voice of the frontline plays a vital role. As a counterpart of the VoC, the voice of the frontline (VoFL) reflects the well-being and know-how of serving customers through the lens of the frontline team. It reveals the frontline's experience in interacting with customers and therefore serves well as a litmus test for any improvement initiatives. That's how "happy staff" always goes with "happy customers" and vice versa.

VoC surveys are conducted twice a year in all stations to foster station ownership of the customer feedback and improvement actions taken at the station level (shown in Figure 5).

Figure 5: VoC Survey – Formation & Outcomes



Continuous service improvement leverages on listening to these "Two Voices", with "One Heart", i.e. "Customers at Heart". This "One Heart" harnesses the whole organization including the frontline team to continuously gain deep understanding about customers (i.e. customer insights) as revealed by the "Two Voices", and seek to enhance the customer experiences in totality, i.e. the customer experiences across all the touch points as captured by the "Three Touch Points".

With "Served from our Hearts", our frontline people are empowered to strive for service excellence by working through the levers of "Two Voices" and "Three Touch Points". That is why the journey of caring service has so much to do about having mindset change throughout the organization – from station to support and from frontline to management.

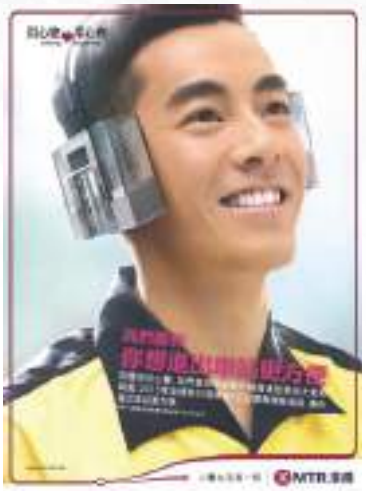
4. Momentum of Customer Experience Initiatives Gathering Strength

4.1 MTR Listening • Responding Programme

In early March 2012, Mr Jay Walder, CEO of MTR Corporation, announced the 用心聽 Listening 用心做 Responding, a major new initiative for the Corporation to further enhance its focus on service delivery in Hong Kong.

Listening and responding to customers as well as anticipating their future needs are critical in continuing to strengthen the strong inter-relationship between the MTR and the community.

The initiatives under the Listening • Responding programme, carry costs of around $1 billion over a few years, are designed to respond directly to what the community would like to see from the Corporation. It brings enhancements in train service frequencies, more staff at stations, more external lifts and wide gates. The Corporation is also committed to adding public toilet facilities at interchange stations when they undergo major renovation, putting in extra platform seating and bringing forward the installation of Automatic Platform Gates at Ma On Shan Line stations by a year.



With the programme starting immediately after its announcement and in less than 2 months' time, some encouraging results have been visible, especially with regard to reducing crowds at busy stations. Five new trains were added to the Tsuen Wan, Kwun Tong and Island lines to boost service by 368 weekly trips. The Tsuen Wan Line enhancement has eased crowding, especially during peak hours, at some of the busiest interchanges. Of particular note is the evening rush at Admiralty Station where 75% of Tsuen Wan bound passengers can now board the first arriving train, with the balance quickly picked up by the second train. The new trains also make Saturday and Sunday travel more enjoyable with less congested rides on the three lines. Also, additional staff were deployed at stations, yielding more attentive service for passengers. When customers have their questions answered thoughtfully and in a timely manner, it reduces their anxiety and, in turn, cuts down on the number of complaints.

4.2 LEAP Transformation Programme

"LEAP" is a transformation programme launched by the Corporation to address the upcoming challenges that the operating railway will be facing. The four letters of the word represent the motto "Leading for Excellence, Actions for Pride".

This programme is not a one-off exercise. It aims at transforming the existing operation mode and renewing the way the operating railway works in 6 key areas, namely *Embrace Customers; Engage Stakeholders; Enhance Competitiveness; Explode Innovation; Elevate Efficiency; and Excite Leadership*, thereby achieving breakthroughs and enabling the business to reach new heights of success.

The vision of the programme is that all these transformations will bring about long-lasting and far-reaching benefits such that staff will be proud to work with MTR, and Hong Kong will be proud to ride with the MTR!

So far 16 transformation teams across 6 themes have come on board since the launch of the "LEAP" programme in July 2011.

As for the theme of *Embrace Customers*, a number of theme objectives (shown in Figure 6) have been formulated for their planned achievement.

The Customer Engagement Transformation Team has most recently introduced the ACE (Amaze Customer Everyday) campaign whereby Operating and Intercity staff are motivated to go the extra mile for excellent customer service delivery every day and then to submit their amazing customer encounter experiences to station landlords for encouragement award assessment and good practice sharing among other station colleagues.

Figure 6: Objectives of Theme of Embrace Customers

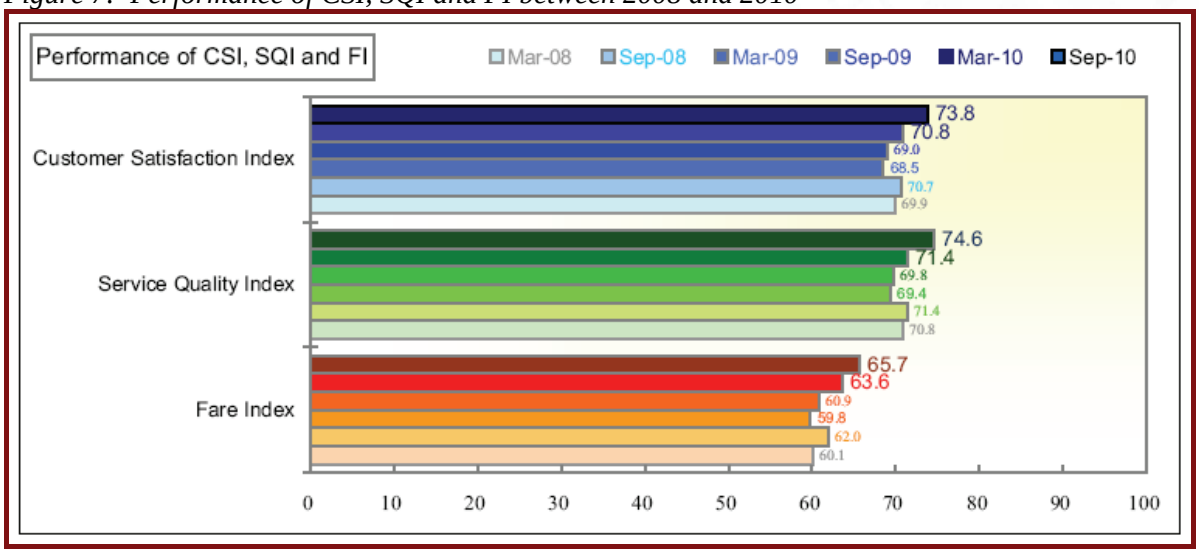
目標 Objective	我們有甚麼地方可以做得更好？ What can we do better?	我們要如何演變？ How do we transform?	我們要達到甚麼成效？ What do we want to achieve?
1 事事以客為先 Transform to customer-oriented mindset	我們的思維尚未完全以客為先 Our mindset not fully customer-oriented	-加強有關顧客服務的督導及溝通 -Strengthen supervision and communication on customer services	事事以客為先，成為卓越的服務供應者 Excellent Service Provider with customer-oriented mindset
2 優化資源運用 Optimize resource utilization	太多活動及缺乏資源推行車站的顧客服務措施 Too many activities and inadequate resources for local customer services initiatives	-精簡現有的活動，並撥出資金來提升各車站的顧客服務 -Rationalize existing activities and assign funding for local customer service enhancements	有足夠的資源來提升各車站的顧客服務 Enhanced customer services with adequate resources for local improvements
3 加強顧客服務的運作流程 Strengthen customer service delivery process	以營運為本的服務流程 Operation-oriented processes	-重新規劃主要的顧客服務流程例如票務處理 -Revamp key processes such as ticket handling	以客為先的流程令投訴減少 Customer-oriented process with less complaint cases
4 主動連繫顧客 Proactively engage customers	缺乏與顧客互動的平台 Lack of platform for customer interaction	-主動與顧客溝通，讓他們參與和作出貢獻 -Proactively communicate with customers; engage them to participate and contribute	顧客對我們更了解及支持我們 More customers understand us and stand for us
5 回應顧客群的轉變 Address change in customer segments	顧客類別正在轉變，尤其是遊客和長者正不斷增加 Changing passenger mix e.g. enlarged tourist and elderly segments	-提供設施以回應遊客和長者的需要 -Provide hardware facilities to address demand in tourists and elderly	能夠滿足不同顧客群的需要 Needs of different segments are satisfied

5. Results

As the initiatives were executed, customer satisfaction showed a surge in 2010, a 1.9% to 3.4% increment in Customer Satisfaction Index **(CSI)** and Service Quality Index **(SQI)** across all business segments (MTR, AEL, LR and MTR Bus) based on the survey conducted in March to April 2010 for instance.

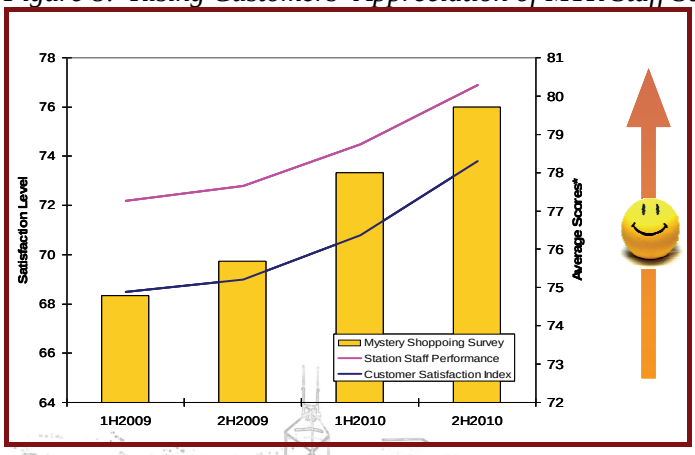
The **CSI**, which shows the overall satisfaction level towards the consolidated performance of the MTR service based on the top 40 important service attributes, was **73.8** in September 2010. This represented a remarkable improvement as compared to the results in March 2010. The **SQI**, which indicates the aggregated performance of the 36 service related attributes of the MTR, was **74.6**. The (Fare Index) **FI**, an index showing the satisfaction level towards the 4 fare related attributes of the MTR, was **65.7**.
All three indices (in Figure 7) registered the highest scores in September 2010 since the merger of the two railways.

Figure 7: Performance of CSI, SQI and FI between 2008 and 2010



The VoC survey conducted in September 2010 also recorded a 2-year high in customer satisfaction for MTR, with improvements in the satisfaction index (shown in Figure 8) for 8 out of the 11 service areas (such as *station staff*, *air-conditioning*, *essential station facilities & services*, *feeder facilities & services*, *recovery* and *crowding level*). The performance also showed a continuous upward trend in recent years.

Figure 8: Rising Customers' Appreciation of MTR Staff Service Performance



The customer experience initiatives not only enable MTR Corporation to meet the targets of the Customer Service Pledges, it has also enabled the Corporation to maintain a leading position in areas of customer service, service reliability and efficiency in the international Community of Metros (CoMET) benchmarking studies over the years.

Figure 9: Benchmarking Comparisons – MTR Performance vs. Best Performance

The Corporation's commitment to excellent railway service delivery over the years has been recognized through our winning a myriad of coveted management / service awards such as The "Best Metro Asia-Pacific" award and the "Best Customer Experience Initiative" award at the prestigious 2012 Metrorail Awards held in London and the Hong Kong Management Association Quality Gold Award in 2011.

6. Way Forward

MTR has always been recognized as a world-class railway in terms of safety, quality, reliability and comfort. However, the external environment is continuously changing. There are ever-escalating customer demands compounded with scrutiny from media and politicians, which requires more effort to provide satisfactory responses.

Adding to these external pressures, 5 new lines are being commissioned in the next few years. With a more complex and demanding network, there are likely more challenges ahead for us.

While the various customer experience initiatives we have introduced have earned us recognition, there is still more to do. We must continuously strive to anticipate the needs of our customers and other stakeholders. We also need to listen to them and respond. To maintain our leadership position in the industry and to enhance job satisfaction among our staff, we must "LEAP" out of our comfort zones.

APPLICATION OF EFQM EXCELLENCE MODEL AS A CONDITION OF GLOBAL LEADERSHIP AND COMPETITIVENESS OF MEDICAL ORGANIZATIONS

Abay Baigenzhin, Director of National Science and Medical Research Center
Azat Abdrakhmanov, President of IAQMA-Kazakhstan

About Organization

Achieving leadership and sustainable competitiveness can be only enabled through implementation of modern quality management methods. National Science and Medical Research Center of Ministry of Healthcare of Kazakhstan (NSMRC JSC) is a leading multi-sectoral science and clinical organization of the Republic of Kazakhstan. For last 6 years an organizational quality management system has been successfully implemented and maintained within the organization which is certified based on ISO 9001:2008.

In 2009 a project on implementation of EFQM Excellence Model was initiated that included following activities: collection and review of information relating stakeholder requirements and expectations with the aim to revise organizational strategy and policy as well as development of strategic map; application of balanced score card towards NSMRC activity to establish short and long-term priorities of the organization; employee training on EFQM fundamental concepts of excellence, model criteria and applicable assessment methods based on RADAR logic; development and defining effective risk management mechanisms on the way to excellence (risk neutralization charts).

A working group was created to implement the project which developed a specific questionnaire form based on 9 main criteria of EFQM excellence model with consideration of NSMRC business characteristics and operating quality management system. The questionnaire form was used for employee survey for one month. The survey covered 190 people. In 2009 we performed the 1st self-assessment based on 9 criteria of EFQM excellence model through application of a combined assessment method with involvement of EFQM excellence assessor.

Employee perception results have been reviewed and presented at operational meeting. Both strengths and areas for improvement were discussed and identified to improve organizational activity. Further a detailed improvement action plan was developed and approved in line with the form offered by EFQM which included three projects: Identification of quality indicators for high-tech medical services; Implementation of e-document management system; Implementation of effective HR policy.

To ensure further improvement of medical service quality, facilitation of all the stakeholder satisfaction implementation of EFQM excellence model was initiated 4 years ago. In 2010 NSMRC has successfully passed external EFQM assessment at Recognized for Excellence, Level 4*. NSMRC has become the healthcare organization No1 in Kazakhstan where EFQM Excellence Model was implemented which was designed to create an integrated approach to sustainable development based on application of tools for self-assessment of current activity. EFQM fundamental concepts of excellence have been successfully implemented within the project as well as all major criteria along with systematic application of self-assessment tools based on RADAR logic. To implement improvement projects business process owners were defined as well as project responsible executives; appropriate budget was established and action plan developed.

Application of benchmarking with the aim to transform governance culture and adoption of best global practices was defined as a main area for improvement of the organization. Personal employee competence, application of innovation technologies, comparative analysis of the organization against external benchmarks in the industry, system application of conceptual approaches and criteria, extensive collaboration with domestic and foreign partners, continual learning and focusing on all the stakeholder needs have been established as key factors of change implementation as well as corporate culture improvement.

To Excellence Model through Quality Management System

It is well known that a quality management system implemented based on requirements of ISO 9000 helps organizations to focus on maximal customer satisfaction. Taking this into consideration and to ensure better compliance with all the stakeholder requirements Mission and Vision were developed and approved at NSMRC which imply planning and achieving balanced score card for main and supporting activities of the organization in both long and short term perspectives.

Business results of NSMRC have demonstrated long-term sustainable and positive trends: highly qualified employees with maximal involvement to project management; conditions were created for continual advanced training and increased employee motivation; process management approach was implemented; the organization is provided with modern medical equipment; innovative technologies are used; higher customer satisfaction has been achieved as a result of consistent improvement of medical service quality. In 2009-2010 we have carried out the following tasks:

- Defining strategic business direction for next 5 years and updating strategic objectives with consideration of stakeholder requirements;
- Identification of strategic and supporting partners; science partnership was defined as a key one. Cooperative implementation of a project “Integrated national healthcare system” with a strategic partner represented by Ministry of Healthcare of Kazakhstan;
- Development and approval of strategic plan for 5 years with consideration of risk assessment;
- Delivery of EFQM Excellence model 2010 training for leaders at all levels of the organization;
- Analysis of NSMRC business in terms of business processes based on key results for 2006-2010;
- Consideration and comparison of NSMRC results with best global practices in the field of research activity and medical technologies; consideration of societal perception of NSMRC;
- Implementation of three improvement projects and development of a detailed report on NSMRC activity which was structured based on 32 elements of 9 excellence model criteria.

In 2010 we changed the organizational status in line with our strategic goals: the national government enterprise was transformed into joint stock company with implemented corporate governance; we have also achieved our strategic objectives for improvement of cardiologic and cardio surgery functions in Kazakhstan. A complete transfer of technologies for delivery of cardio surgery services to regions was carried out with further creation of dedicated centers with professional training facilities in 19 regions and cities of Kazakhstan.

In 2011-2012 we reviewed the structured external assessor and validator report with the aim to identify areas for further improvements that were prioritized as follows: further improvement of HR policy, implementation of a project on strengthening corporate social

responsibility, implementation of international standards for information security, improvement of leadership based on continual training and implementation of leadership evaluation system to enhance their motivation. In 2011 over 30 leaders of the organization attended a seminar “Leaders for Excellence” delivered by IAQMA-Kazakhstan as EFQM partner organization. The leaders disseminate knowledge and experience in application of EFQM excellence model among NSMRC employees.

Thus application of EFQM Excellence Model has provided NSMRC with an effective tool for business process management that enables conditions for sustainable development in all major business directions; development of multi-level leadership facilitated integration of formal and informal leaders throughout the organization that enabled their active involvement to development of organizational excellence culture. Our strategic goals are clearly focused on meeting stakeholder expectations; they provide maximal opportunities for timely implementation and enable our competitiveness in long-term perspective. For the first time in our practice we initiated using tools for effective control of organizational key results with the aim to achieve business sustainability. These are: risk management, benchmarking and CSR approaches.

EFFECTIVE AND EFFICIENT IMPLEMENTATION OF INNOVATION APPROACHES WITHIN EDUCATION PROCESS MANAGEMENT

Tolebay K. Rakhipbekov, State Medical University of Semey, Kazakhstan
Azat Abdrakhmanov, President of IAQMA-Kazakhstan

The university is one of leading and oldest medical higher education organizations of Kazakhstan (Since 1952). Focusing on application of innovative education technologies as well as good base for world level research activities enables dynamic development of the organization. The university disposes of modern material and technical resources, highly qualified employees and abundant spiritual and science heritage. At present the university delivers educational services to nearly 4000 students based on 8 special subjects within 36 departments.

Retraining is delivered by the faculty of doctor advanced training. Teaching staff of the university is represented by highly qualified professionals including 1 academician of National Academy for Science of Kazakhstan, 8 correspondent members of the academy, 37 doctors of science, 1 PhD and 160 candidates of science.

The teachers of the university attend advanced training courses on annual basis as well as complete trainings and practical training courses at educational institutions of USA, UK, Japan, Belgium, Israel, Singapore, Denmark, Germany and Australia. Over 60 teachers possessing 2nd philological education deliver their lectures in groups with English as teaching language.

Nearly 90-95% of graduates of the university are employed annually. There is a high demand for professionals trained at the university in Pakistan, India, Palestine, Sudan, Morocco, Jordan, Israel, Syria and Russia. The Medical University of Semey has its own training and clinical center that enables student to develop practical skills. Many manikins of the center are used as virtual simulators. There is a phantom classroom for dentistry. There is also an integrated training and science laboratory that includes physiological, morphological, biochemical, hygiene and microbiological departments. The university has its own clinical base – a medical center that includes multi-profile hospital for 530 beds (320 for grown-ups and 210 for children), consultancy polyclinic with a capacity of 250 customers per shift. A training resource center with Internet access to public Library named after Mr. Kokhranovsky was also created on the base of the medical center.

The university has a high status of research center in the field of medicine, biology, biochemistry and carries out science and technical program titled «Development of scientifically grounded technologies for minimization of environment risks and prevention of adverse impact on population's health». International collaboration is continually enhanced: contracts for cooperation were signed with 13 overseas science and educational organizations.

Quality management system of the university has been certified twice: in 2005 by Medeu Consulting, an SGS authorized certification body (Kazakhstan) and in 2009 by Total Quality Certification Services International, another authorized certification body. Responsibility for sustainable future of the university is ensured through implementation of strategic development program titled «State Medical University of Semey as a Research University for 2011-2015» where organizational Mission, Vision as well as Quality Policy and objectives have been defined. Vision of the university – to join Top 600 universities of the world and Top 200 Asian Universities by 2020. In 2012 a strategic decision on implementation of EFQM Excellence Model was made by management team of the university.

Annual business self-assessment performed by the organization has enabled to identify areas for improvement which have been implemented within the framework of improvement projects. Prioritization criteria for the projects included: significance for implementation of government strategy for innovation development of the Republic of Kazakhstan, national programs for healthcare development; significance for organizational strategy (with consideration of all areas for improvement and key strategies). As a result 3 improvement projects were defined: №1 – Improvement of quality management system through transition to EFQM Excellence Model (Committed to Excellence Level); 2 – Implementation of new education technologies with the aim to enhance competence of 4th course students (general medicine faculty); №3 – Development and improvement of training and clinical center for neonatal resuscitation skills. Implementation of improvement project № 1 has enabled the university to achieve its quality objectives: introducing principals of strategic planning and corporate governance through self-assessment and successful validation based on EFQM excellence model at Committed to Excellence level.

As a result of the project implementation and interrelated process system has been built, principals and concepts of EFQM excellence model were learnt and introduced to increase business performance of education service delivery. Results of the project implementation included: optimization of internal paperwork (reduction of quality forms bank by 65%; delivery of training for 80 employees based on newly developed and approved program of 24 hour workshop; analytical report was developed based on internal auditing of departments performed with application of updated questionnaire forms that reflected concepts of EFQM excellence model; acquisition of additional practical experience in learning best practices during preparation and participation in National Golden Quality Award established by President of Kazakhstan; internal self-assessment based on EFQM criteria; successful validation (external assessment) and receiving certificate of conformity in Feb 2012; successful government certification in March 2012.

In addition, implementation of the improvement project has enabled to enhance the university image at regional, national and global levels through external assessment based on EFQM criteria (validationи) and receiving certificate of conformity. At regional level the Medical University of Semey is the organization No1 that acquired such a certificate. At national level the university is one of two EFQM certified organizations in Kazakhstan. Thus the university demonstrates pro-active compliance with external and internal customer needs in terms of education services delivered by the organization.

Implementation of improvement project №2 has enabled organization to create new competences and enhance performance qualitative indicators for 4th course student of general medicine faculty as well as improve teachers' competences and scores through application of CBL (Case based learning) and TBL techniques. Results of the project implementation include: approval of a new program for introducing and monitoring of CBL and TBL techniques (objectives, tasks, resources, expected deliverables); creation of working groups with involvement of creative teachers of 4th course based on survey results; results of 88 faculty members trained on СИД and TBL techniques verified by availability of a timetable, training registers, video materials and expert reviews; analysis of CBL and TBL technology implementation performance based on survey results (including teachers and students of 4th course of general medicine faculty, performance results (report).

The project enabled the university to increase customer satisfaction (4th course students) with the education results (from 82% to 93, 4%); enhance number of creative teaching staff with improved competences and scores (up to 87% faculty members).

Implementation of improvement project №3 is a direct achievement of a major organizational business quality objective based on Research program – Development of science and medical infrastructure and modernization of material and technical support for medical and education organizations. Implementation of this project has enabled the university to: improve students' clinical skills with introducing best practice principals and modern achievements of clinical medicine; provide 100% of intern-pediatrics students with neonatal resuscitation skills and improve their performance by 80%; develop 5 clinical scenarios for neonatal resuscitation with application of high-tech manikins.

Thus implementation of improvement projects as an effective education process management tool has enabled the State Medical University of Semey to develop new effective ways for adding value to customers and achieving higher level of stakeholders' satisfaction in terms of delivery of guaranteed quality education services.

TOWARDS GLOBAL QUALITY

Pravin Shah and Mr. Subir Das, Automotive Sector, Mahindra and Mahindra Ltd

Mahindra & Mahindra Ltd:

Mahindra is now a US $14.4 billion Indian multinational, which employs more than 1,44,000 people in over 100 countries.

The Mahindra Group focuses on enabling people to rise. Mahindra operates in the key industries that drive economic growth, enjoying a leadership position in tractors, utility vehicles, information technology, infrastructure and vacation ownership. Mahindra has a presence in the automotive industry, agribusiness, aerospace, components, consulting services, defense, energy, financial services, industrial equipment, logistics, real estate, retail, steel and two wheelers.

Also in 2011, Mahindra featured on the Forbes Global 2000 list, a listing of the biggest and most powerful listed companies in the world. Dun & Bradstreet also ranked Mahindra at No. 1 in the automobile sector in its list of India's Top 500 Companies. In 2010, Mahindra featured in the Credit Suisse Great Brands of Tomorrow. The Mahindra Group today is an embodiment of global excellence and enjoys a strong corporate brand image.

Mahindra is also one of the few Indian companies to receive an A+ GRI checked rating for its Sustainability Reports for the year 2007-08, 2008- 09 and 2009-10.

Automotive Sector:

Mahindra and Mahindra Ltd. Automotive Sector is the biggest of the 10 Business Sectors in Mahindra Group of Companies. The Automotive Sector is in the business of manufacturing and marketing utility vehicles (UV, MUV & SUV), cars (midsize sedan) and commercial vehicles (3W, LTV, LCV & HCV). It is the market leader in utility vehicles in India since inception, and currently accounts for more than 60% of India's market for utility vehicles.

Few of the successful models Mahindra produces are XUV5oo, Bolero, Scorpio, Xylo, Verito, Bolero Pikup, Bolero Maxi Truck, Maxximo, Thar, etc.

The Automotive Sector has six vehicles manufacturing plants at Kandivali (Mumbai), Igatpuri, Nashik (state of Maharashtra), Zaheerabad (state of Andhra Pradesh), Haridwar (state of Uttarakhand) and a new plant at Chakan in the state of Maharashtra, together employing more than 10,000 employees.

Apart from manufacturing, Auto Sector has three R&D facilities at Nashik, Kandivali and the new state of the art Mahindra Research Valley at Chennai.

The company has joint ventures with Navistar Inc. USA for the manufacture of Heavy Trucks and Large Engines for commercial applications. It has recently formed a new company Mahindra Reva Electric Vehicles Pvt Ltd by acquiring a majority stake in the Electric Car Manufacturing Company, Reva Ltd. It has also acquired a majority stake in Korea's SsangYong Motor Company.

The company has in the recent past articulated its long term vision to `Be a Top Ten Global Automotive Brand'.

The activity/activities performed to get outstanding results**.**

Key Initiatives	Results Achieved
1. Launch of 'Mahindra Quality System' I. Introduction of NOVA –C for evaluating and monitoring outgoing quality. II. Institution of cross functional Plant Vehicle Teams (PVT) to address customer concerns. III. Institution of MQS Quality Awards based on assessments of Mfg plants, Materials Management, NPD projects, Dealership Repair Quality. IV. Initiation of sector-wide Quality System Alignment meetings (QSA) V. Institution of Supplier Quality Assurance cells in all manufacturing plants. VI. Institution of Quick Concern Resolution Team (QCRT) VII. Institution of i4 teams to promote workmen involvement in improvements VIII. Institution of Mahindra Yellow Belt and DFSS for problem solving **2. Institution of Quality Planning in NPD projects** I. Deployment of Mahindra Product Development System and Quality Planning for NPD projects II. Institution of Gateway clearance by independent cell in NPD projects. III. Jury evaluation of product at different stages of NPD by external and internal Juries IV. Institution of Launch Quality Operating System (LQOS).	**1. Evolved as the vehicle of 'TQM' in the Auto Sector to manage Business Process integration through globally competitive practices for sustained growth and Customer Satisfaction** I. Alignment of product/ process quality with Customer expectations II. Significant reduction in Warranty Incidences and Cost III. High motivation and competition in plants to excel in quality and win coveted MQS Awards. IV. Standardized deployment of MQS practices across the sector V. 95 % Improvement in Supplier PPM VI. Improved speed of concern resolution. Improvement in NOVA-C score & Supplier PPM. VII. Significant increase in number of employees involved in improvements leading to improvement in Q, C, D. VIII. Standardization of QC story as problem solving tool across all locations **2. Improvement in launch quality leading to lesser spikes in warranty post launch of new products.** I. Development of successful products like Scorpio, Xylo, XUV5oo and Maxximo redefining Mahindra brand. II. Identification, escalation and mitigation of risks in the NPD projects. III. Assuring Customer Requirements are addressed in the product from prototype stage to Launch stage IV. Early involvement of manufacturing teams in NPD projects leading to smoother launches **Overall Sector Results: (Period F 2002 to F 2012)** • **Warranty concerns reduced by 95%.** **95 % Improvement in Supplier PPM (base F2005)**

DEVELOPMENT AND IMPLEMENTATION OF INNOVATION MANAGEMENT SYSTEMS IN USPTU FOR QUALITY ASSURANCE IN TRAINING OF OIL AND GAS ENGINEERS IN THE URALS AND WESTERN SIBERIA

Yuri Matveev, Deputy Rector on Scientific Innovation System,
Ufa State Petroleum Technological University (USPTU)

The Organization

Ufa State Petroleum Technological University is a State Educational Institution of Higher Professional Education. It has been offering educational services since 1948.

At present University provides educational services for the following categories of students: exploration of oil and gas deposits, drilling of oil and gas wells, development and exploitation of oil and gas deposits, transport and storage of petroleum and others. University trains specialists in more than 70 areas of study. USPTU has 8 Faculties (Pipeline Transportation, Oil Mining, Technology, Economics and oth.) and 65 Chairs (Construction and Maintains of Oil&Gas Pipelines and Storages, Automatisation of Chtmical Engineering Processes, Machines and Devices of Chemical Production and other.).

Research and development activity is a most important way to train highly qualified specialists at USPTU and helps the university to cooperate with industrial enterprises, academic and industry research institutes of Russia.

The most important fields of research and development at USPTU are design works, diagnostics of oil and gas, petrochemical equipment and constructions, activities in the field of fire and industrial safety of oil and gas, petrochemical and other types of production.

Research is carried out at USPTU chairs and at more than ten its departments – special research and design institutes and centres.

The main ordering parties for research and development and scientific and technical services are industrial enterprises: Gasprom, Rosneft', Transneft', Lukoil, Bashneft', TNK-BP, Tatneft'. USPTU has concluded long-term cooperation agreements with most oil and gas and industrial companies and enterprises.

Innovative activity at USPTU is considered as continuation of research and development work that is aimed at integration of new developments in industry and provides training of specialists in priority fields of engineering and technology. Innovative activities at USPTU are based upon patents that USPTU got in the Russian Federation and other countries.

One of the main tasks of the University in the research and development sphere is maintenance and growth of scientific and educational schools that have been created during the life of the University and that have received wide recognition in Russia and abroad.

Training of Candidates of Sciences (3 years of postgraduate studies) and Doctors of Sciences in science and engineering at USPTU provides the University, various Russian (and foreign) enterprises and research centres with highly qualified staff. There are 29 specialities and 5 scientific tracks for training of Candidates of Sciences and Doctors of Sciences in USPTU, and more than 450 Russian and foreign students are enrolled on these programmes.

At present, there are 5 boards at USPTU where these Candidates and Doctors of Sciences can be defended. From 70 to 100 theses are defended annually at our University.

The activity/activities performed to get outstanding results

In 2006 USPTU began its work on the implementation of innovation management system ensuring the quality training of graduates. The University offers educational programs based on unique unparalleled ways of training. The educational programs are focused not only on professional competence, but also on the innovative entrepreneurial thinking and modern organizational technology.

Innovation management system is a tool for implementing the strategy of USPTU aimed at sustainable development of the university as a continuing education center providing services at all levels of professional education.

Innovation management system of USPTU includes five major elements:
- Transfer of innovative knowledge, technology, competent and qualified personnel to the enterprises of oil and gas industry;
- Development and implementation of innovation-oriented educational programs;
- Continuous improvement of management system and all processes of the university;
- Communication with all interested parties on the basis of the openness principle;
- Evaluation and certification of management systems, educational programs and research output of the University by external independent agencies.

Innovation management system is supported by an innovative infrastructure of USPTU. A special university project launched the center of technology transfer, business incubator, such innovation centers as "Chemistry and Biotechnology", "Inter-University Centre for communities," Nedra "," Laboratory Nanotechnology cement systems named after Professor AM Polak and NH Karimov ", " Pipeline Technology Center "," Petroleum Technology Center "and a number of small innovative enterprises established by USPTU which are successfully oriented to promote the integration of production, science and education. It allows to reduce the time lag between the creation of innovations, their introduction and transfer of required competences for students to use them.

The innovation management system of USPTU is organized so that each employee, each department and each laboratory could be involved in innovation activities, under the guidance and technical support of the technology transfer center and business incubator. In particular for these purposes the annual competition is held in two categories "Innovation, business ideas and business plans" and "Innovative projects on major scientific fields of USPTU."

The entire life cycle of innovations: from the appearance of ideas to their implementation is organized within the bounds of end-to-end business process "Innovation Management " integrated into the overall management system of USPTU.

Staff training in the area of university innovations is conducted systematically. To do this, the Institute of Economics in USPTU developed and implemented every six month training program in five areas: "Strategic management and marketing innovations for small and medium-sized businesses", "Investment strategy and business planning, innovation in small and medium-sized businesses", "Risk Management in innovation projects of small and medium-sized enterprises ", " Financial management of innovation of small and medium-sized businesses ", " Human resource management and intellectual property in innovative small and medium businesses."

The purpose of this training is to provide all departments, laboratories and administrative units of the university with qualified specialists in the field of innovation who can work effectively to achieve the goals and objectives of the Innovation Development of USPTU.

ENERGY REGULATORY COMMISSION OF THAILAND (ERC)'S MODEL TO EXCELLENCE

Preeyanee Tooparoi, Office of the Energy Regulatory Commission

The Energy Regulatory Commission of Thailand

The Energy Regulatory Commission (ERC) is the national independent energy regulatory body, established by the Energy Industry Act B.E. 2550 (EIA 2007). The ERC operates under the government policy framework of providing fair and transparent competitions, power reliability and security, appropriate quality of service in energy business operations. Energy industries under EIA 2007 are composed of electricity and natural gas. Electricity industries under the responsibility of the ERC are power generation, power transmission, power distribution, metering and billing, and system operation. While in the natural gas industries, the ERC regulates natural gas transmission, natural gas distribution only for power and industrial usage, and the liquefied natural gas (LNG) business.

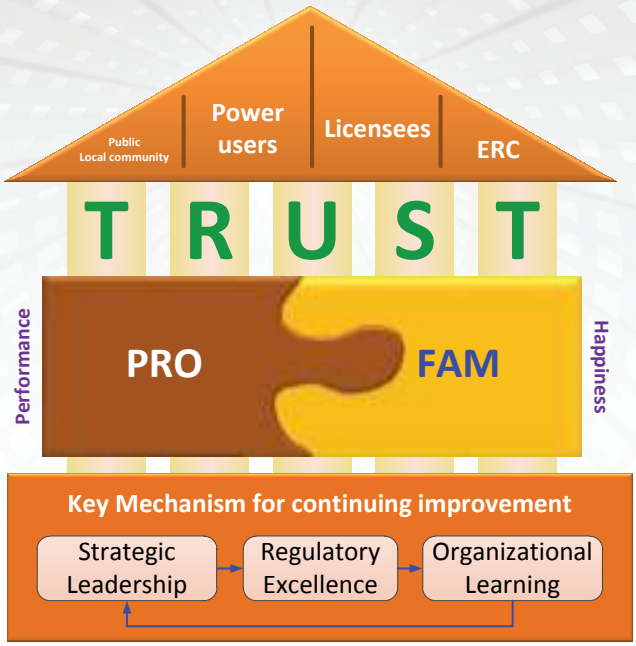
ERC's regulation applies mainly to four state enterprises; Electricity Generating Authority of Thailand (EGAT), Metropolitan Electricity Authority (MEA), Provincial Electricity Authority (PEA) and PTT Public Company Limited (PTT). In 2011, the power system under the ERC's regulation were composed of 35,368.21 Megawatts (MW) of power generation capacity producing 144 Terawatt Hours (TWh) of total generated energy, and 19,759.801 circuit-kilometers of transmission lines covering more than 99% of the country area and servicing about 19 million consumers - about 3 million in metropolis area responsible by MEA and about 16 million in provincial area responsible by PEA. The natural gas system under the ERC's regulation were composed of 3,915 kilometers of natural gas transmission pipeline, and five million tons per year of LNG.

The ERC regulates the sector through licensing authority. To date, the ERC has issued more than 950 licenses to electricity and natural gas industry's operators, both state-own and private. ERC's responsibility is to ensure sustainable development, fair and transparent competition.

Activities Performed to get Outstanding Results

ERC deploys the House of Quality concept with these elements :

- Base : Continuous Improvement via Organizational Learning
- Walls : Professionalism and Quality of Work Life
- Columns : Trust, via Ethical Practices and Transparency
- Roof : The Stakeholders (Public, Users, Licensees and ERC Staff)



ERC's Model to Excellence.

Besides the Model to Excellence, ERC also applies IT technology to enhance effectiveness and efficiency. In 2011, we have thirteen IT system supporting most of the routine works in the office. For example portal system for electronic license (E-license), electronic petition resolution (E-petition), electronic power development fund (E-PDF), data warehouse, E-meeting and E-document.

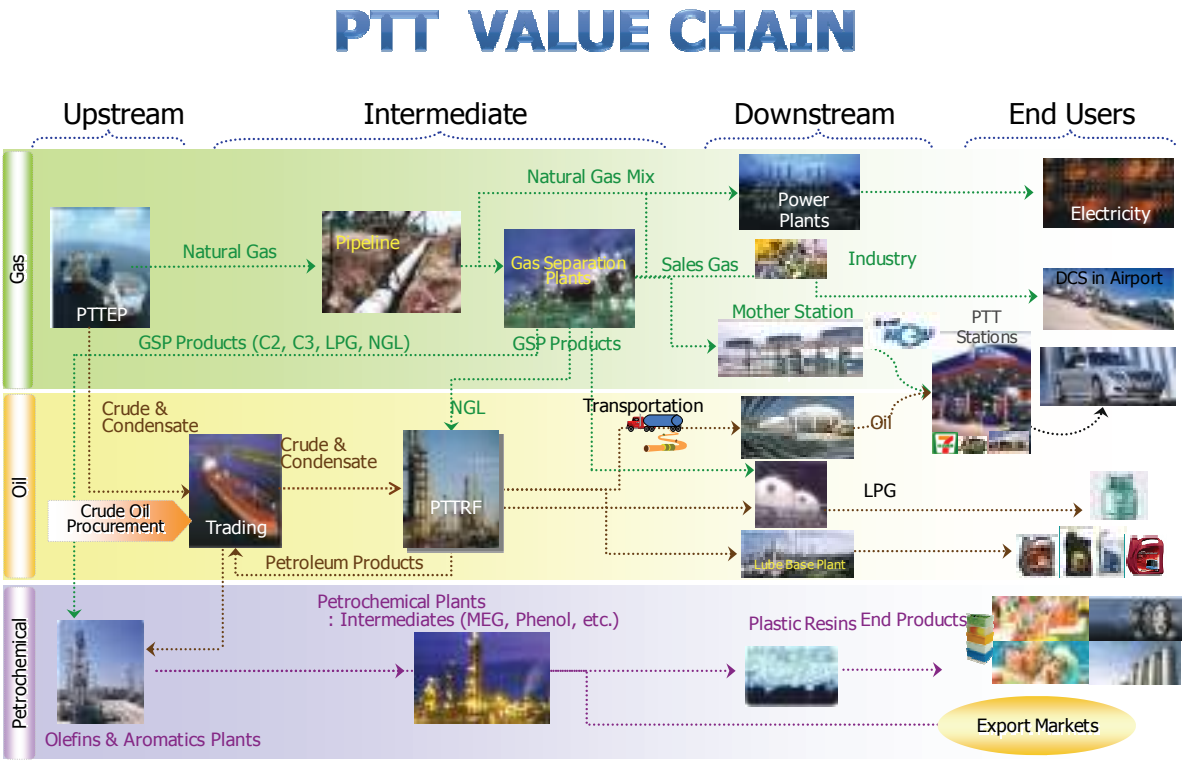
ERC's Model to Excellence and the novel IT systems have been thoroughly and reasonably applied in all works. The model also meets or exceeds the standard criteria of the Thailand Quality Awards (TQA). This is the level of excellence highly expected of the ERC since the inception in 2007.

PTT CRISIS TO OPPORTUNITY

Pailin Chuchottaworn, President and CEO, PTT Public Company Limited

The Organization : PTT Public Company Limited

On October 1, 2001, the Petroleum Authority of Thailand was transformed into PTT Public Company Liminted (PTT Plc), with scope of operations covering integrated petroleum and petrochemical businesses, ranging from exploration for natural gas in the Gulf of Thailand and processing of that gas into value-added products like ethane, propane, liquefied petroleum gas (LPG), and natural gas liquids (NGLs). These products serve as petrochemical feedstock for various manufacturing plants. The methane component of the gas is delivered by a gas transmission pipeline system to power plants and industrial plants to serve as a fuel for heating or power generation, and as natural gas for vehicles (NGV). PTT also sources crude oil for refineries to process it into various petroleum products, stores them at terminals, and transports them to service stations across the country, apart from products like LPG and lubricating oil. Because of limited indigenous reserves of natural gas and the steady rise in the oil price, PTT has needed to find other reserves of energy, including coal and oil palm, to fulfill its mandate concerning national energy and national economic strength, which would foster Thailand's growth and lead the country to sustainable power.



The Activities Performed to get Outstanding Results

Guided by the vision of the current President & CEO (Mr. Pailin Chuchottaworn), PTT has consistently commanded assorted aspects of development evolving around three salient characteristics: smart (HPO : High-Performance Organization), conscientious (CG : Corporate Governance), and caring for society (CSR).

PTT's path to organizational development for strength and competitiveness at both the domestic and international levels falls into three periods:

1. 1993-1996: Implementation of quality and safety tools, including 5S, Suggestions, and QCC activities
2. 1997-2001: Implementation of internationalized standards of quality, safety, health, and environmental work at all operation sites
3. Since 2002: Implementation of Thailand Quality Awards (TQA) criteria to upgrade the approach to management excellence as an organization.

Award	***2008***	***2009***	***2010***	***2011***
Corporate Governance Asia	• *Recognition Awards 2008 , The Best of Asia*	• *Recognition Awards 2009 , The Best of Asia*	• *Recognition Awards 2010 , The Best of Asia*	• *Recognition Awards 2011 , The Best of Asia*
Finance Asia	• *Best Managed Company* • *Best CFO* • *Best Corporate Governance* • *Most Committed to a Strong Divided Policy*	• *Best Managed Company* • *Best CFO* • *Best Corporate Governance* • *Best Corporate Social Responsibility*	• *Best Investor Relation* *By Thai Company 2010 Awards*	• *Best Investor Relation* *By Thai Company 2011 Awards*
The Asset	• *The Asset Triple A Awards 2008 Best in Corporate Governance*	• *The Asset Triple A Awards 2009 Best in Corporate Governance*	• *The Asset's "Platinum Corporate Awards"*	• *The Asset's "Platinum Corporate Awards"*
Thailand Quality Award & Etc.	• *Thailand Quality Class (TQC) for Gas Transmission Pipeline*	• *Thailand Quality Class (TQC) for Gas Transmission Pipeline*	• *Thailand Quality Award (TQA) for Gas Transmission Pipeline* • *Asian Energy Award 2010 TPM Excellence Award to 6 Oil & Gas Terminals of Oil Business From JIPM*	• *Thailand Quality Class (TQC) for Oil Business* • *Thailand Quality Class (TQC) for Gas Business* • *Thailand Quality Class (TQC) for International Trading Business*

APPLYING THE EFFECTIVENESS OF ISO 9000:2008, EFQM AND TQM, FOCUSING ON QUALITY AND AIMING AT LEARNERS AND ALL THE RELATED PARTIES ARE EQUAL, OPEN AND TRANSPARENCY

Vu Thanh Chuong and Nguyen Thi Huyen, Red Star University

RED STAR UNIVERSITY

Red Star University is a public university under the management of Ministry of Industry & Trade, founded in 1969. With 43 years of development, the school has provided for the country the well-qualified labor force to fulfill the requirement of the country's development. Red Star University has been granted with many awards. The teaching staff are enthusiastic. Many teachers have been granted with many awards such as Distinguished teachers, awards for well-teaching in Teaching Contests at National, Provincial… levels.

The school has 2 campuses with the total area of 26.8ha. The lecture halls and workshops are equipped with modern facilities. Currently, the University has conducted the process of Multi-major and Multi-level training with the purposes of providing the country with the high-qualified labor force who are energetic and able to corporate in life and work. For the past years, the University has been renovating the training objectives, training curricular, and training content. Many projects on training new majors have been opened to create more opportunities for learners. Up to now, the total number of students at the University of over 15,500 students. Almost graduates are able to find jobs with good salary after school. Sao Do University is on its way of development to become a famous university in the region, the country as well as in ther world.

QUALITY MANAGEMENT ACTIVITIES OF THE UNIVERSITY ACCORDING TO THE CRITRIA

1. Idenfitying the management

To identify the management of the Director Boards, the University has applied ISO 9000:2000 to the management. The Board of Directors for ISO 9000:2001 system under the decision No. 577/QĐ-CĐCNSĐ and the decision of founding of ISO controllers No. 578/QĐ-CĐCNSĐ, each facultiy and department of the University has one ISO controller. In addition to this, the decision No. 738/ QĐ-CĐCNSĐ has signed on 29/9/2006, which allows the faculties and deparments to self-control in its management process. Since 2008, the management system of ISO 9001:2008, a new version of ISO 9001 has been applied for the Univesity's activities.

2. Identifying and supporting the activities for quality improving

Continuous renovation in training quality is always given the first priority to fulfill the sustainable development of the society. The second step is to maintain the effectiveness of the quality management system ISO 9000 heading to the overall quality country system , to be certified for the Ministry of Education and Training for the training quality. The third step is to establish to outcomes for 17 training majors at University Training levels, and 16 training majors at Colleges Levels. Publishing on the University's to the public all activities of the University as stipulated in the Circular No. 09/2009/TT-BGDĐT of the Ministry of Education and Training.

3. Standardized supporting and daily managing to perform effectively and efficiently

The university tried its best to achieve success as well as international certificates about social responsibility. TQM overall quality is applied at the university. Quality policy "Applying the effectiveness of ISO 9000:2000, EFQM, TQM, focusing on quality and aiming at learners and all the related parties are equal, open and transparency"

The new version of ISO 9001:2008 was updated on 26, 27/6/2009 to all the members of the Board of Director, Dean/ Deputy Dean of Departments, Head of the departments, ISO secretary, and document control staff, lecturers, and teachers. This course was organized at Sao Do University by IQC International Quality Center. The university has built total 204 procedures and 265 work instructions

4. Support for new products, new services and development of technological effectively and efficiently

The university continues to invest budget for research, application, and science and technology innovation. Many ministry graded research and university graded research have completed on time and achieved excellent results.

5. Collecting analysis, applying information quality to bring effective, efficient TQM

With the motto of training to serve social needs, not training what the schools can. The university organized a job fair to attract companies, enterprises, corporations to create employment opportunities for students after graduation. Conducting surveys, collecting information to assess the effect of quality management for students, graduates and businesses which achieve good results.

Thanks to effective application of quality management that students can obtain employment increased rapidly through each year. The size of students the school is constantly developing. Total annual turnover also increased the income of officials and employees constantly improved.

6. Informing the group work and training and education system

We inform the clubs such as young creative clubs, Robocon clubs, auto forum of Red Star University students, designs on the computer clubs.

Establish the education quality self-evaluation and verification to judge the activities of the university basing on the Ministry of standard of university education quality set by the Ministry of education and training.

7. Other works that support TQM

The university has taken part in the ANQ Congress in the years 2007, 2008, 2009, 2010, 2011 and on forward 2012. We had 3 papers to present at the ANQ Congress 2011 Ho Chi Minh City, of all one won "BEST POSTE AWARD". In 2012, VQAH commended us to ARE-QP awards at the ANQ Congress 2012 Hong Kong.

We applied the quality management according to EFQM model. According to the EFQM measurement in 2012, Sao Do University ranks the second level.

We were elected to VQAH board and the Rector was voted as the board executive member term 2011-2015.

Applying the QMS, ISO 9001: 2008 to evaluate the university education quality is very logical and expresses the uniformity, creativity and the urgency in training with any universities.

IAQ Session Panelist

IAQ Session Thursday, August 2, 2012, 9:00-10:00am

Quality in Healthcare - Its past, present and future

Moderator Yoshinori Iizuka, IAQ VP-Publication, JSQC
Panelists Fugee Tsung, IAQ Academician, HKSQ
Janak Mehta, IAQ President, ISQ
Bob King, IAQ Academician, USA

Profile of the Panelists

Yoshinori Iizuka

Dr. Yoshinori Iizuka is Professor Emeritus, University of Tokyo. He was Professor until 2011 and is currently Project Researcher at the same university. His research has focused on quality management, including TQM, ISO 9000, structured knowledge engineering, healthcare social system engineering, software quality, and nuclear safety. He has played important roles, including President of JSQC for 2003-2005, Chair of Deming Application Prize Committee for 2008-2011, Vice President Publications of IAQ, and a board member of Japanese Society for Healthcare Quality and Safety (JSQSH). He was awarded Deming Prize for Individuals in 2006 and ASQ/Freund-Marquardt Medal in 2011.

Fugee Tsung

Dr. Fugee Tsung is Professor and Head of the Department of Industrial Engineering and Logistics Management (IELM), Director of the Quality Lab, at the Hong Kong University of Science & Technology (HKUST). He is an Academician of IAQ, Fellow of ASQ, IIE, and HKIE. He is Department Editor of the IIE Transactions, Associate Editor of Technometrics and Journal of Quality Technology (JQT). He is an ASQ Certified Six Sigma Black Belt, and ASQ authorized Six Sigma Master Black Belt Trainer. He is also the winner of the Best Paper Award for the IIE Transactions in 2003 and 2009.

Janak Methta

Janak Mehta is currently the President of International Academy for Quality and the Chairman of TQM International Private Ltd., India. He has been the pioneer in promotion of modern quality management in India since 1982. He was the founding President of Indian Society for Quality, India from 1996 to 2002. He was also involved in the formation of Asian Network for Quality (ANQ) in 2002 and later became the Chairperson of ANQ for 2009 – 2010. He has been an invited keynote speaker at various quality conferences in over 25 countries. In recognition of his contribution to the quality movement in the world he was awarded the Lancaster Medal by the American Society for Quality in 2012.

Bob King

Bob King is co-founder, chairman, and CEO of GOAL/QPC. In the early 1980s, he was the first to launch a regional Deming users group. In the late 1980s, he led the research of advanced Japanese quality methods. He was the first to publish books in English on Quality Function Deployment and Hoshin Planning. He led the adoption of these methods at many U.S. organizations, including Ford, Intel, Procter & Gamble, Hewlett-Packard, IBM, Bethesda Hospital, General Motors, Motorola, Harvard University, and many others. He has written three books: Idea Edge, Better Designs in Half the Time, and Hoshin Planning: The Developmental Approach. He also publishes a quarterly peer-reviewed journal, the Journal of Innovative Management, which is designed for experienced practitioners of quality management and continuous improvement systems. He has a bachelor of arts degree from St. John's College and an S.T.M. from Boston University.

Abstracts

Service Science in Healthcare – Fugee Tsung, Hong Kong University of Science & Technology
Driven by a new business environment including globalized economy, business automation, and business and technology innovations, the service sector keeps growing and now accounts for more than 50 percent of the labor force in the developed economies. With the shift in economic focus from manufacturing to service, industrial and academic research facilities may need to apply more scientific rigor to the practices of service, such as discovering better methods to use statistics and mathematical optimization to increase quality, productivity, and efficiency to meet the challenges in the service sector. This talk will focus on the development of quality techniques to the service science and engineering, in particular to the healthcare area. Several technical challenges and recent extensions in healthcare service, especially the application of Six Sigma in healthcare, will be discussed."

IAQ Initiatives on Healthcare – Janak Mehta, TQM International / Bob King, GOAL/QPC
Think Tanks concentrate IAQ member resources on the contemporary applications of quality that require focus and coordinated support to advance knowledge and to leverage lessons learned in order to accelerate the development and adaptation principles and methods to improve performance for the benefit of society or to improve applications of core quality-related methods.

The think tank on healthcare takes up the work begun 10 years ago by Academician Bob King and others to significantly improve health for those suffering from chronic illness and reduce the cost. Hundreds of millions around the world may benefit from this work.

The process has been driven by the Pareto principle. Based on the work of Bob King and Don Berwick in 1992, it focuses on the triple aim of improved outcomes for patients, improved quality of care and cost control.

Chronic illness affects the most people and drives the cost. Only 15% of people practice self-care (take meds, check blood pressure and blood sugar and take their meds). The 85% who don’t practice self-care go to emergency room and hospital and consume more than 50% of medical care costs in the US.

This project is bringing together the world’s top pharmacists and physicians with leading quality experts to bring this process to the next level and to help develop appropriate standards for this work with the necessary certification and accreditation of those involved in this work.

Healthcare as a Socio-Technology – Yoshinori Iizuka, University of Tokyo
With the successive reports on adverse events in healthcare, social needs for the assurance of healthcare quality and safety has been increasing. Along this line, healthcare society has initiated variety of activities for quality and safety, including joint researches which have been performed through the collaboration of experts from a various science. This approach is expected to result in the establishment of a new science of “healthcare safety and relief”, which is significant to establish a sound healthcare social system.

It should be noted that healthcare is a “socio-technology”. Socio-technology is defined as a technology, i.e. a reproducible methodology to achieve an objective, to be owned collectively by whole society.

Healthcare quality and safety needs to be supported by a series of socio-technologies including;

- Social common sense about principles of healthcare quality and safety,
- Social knowledge infrastructure for structured clinical knowledge, safety technology and healthcare management system model, and
- Implementation of these knowledge and technology in hospitals.

This paper discusses overall picture of healthcare quality and safety as a “socio-technology”, including its meaning, significance, scheme and mechanism.

Discussion – All panelists and Audience

Abstract of Papers

Sorted by Region

1. Bangladesh (BS)
2. China (CAQ)
3. Chinese – Taipei (TW)
4. Hong Kong (HK)
5. India (IND)
6. Indonesia (INDO)
7. Iran (IRAN)
8. Japan (JP)
9. Kazakhstan (KAZ)
10. Korea (KSQ)
11. New Zealand (NZ)
12. Overseas (OV)
13. Russia (RUS)
14. Singapore (SQI)
15. Thailand (THA)
16. Vietnam (VIE)

BS01

QUALITY MANAGEMENT IN NEW PRODUCT DEVELOPMENT: PHARMACEUTICALS ASPECT

Dr. A. S. M Ansarul ISLAM

Supreme Pharmaceuticals Ltd., Dhaka, Bangladesh.
E-mail: dr_ansar67@yahoo.com

Abstract: *Supreme Pharmaceuticals Ltd. (SPL) is a medicine manufacturing company engaged in designing, developing, manufacturing and marketing of pharmaceutical products. The vision of SPL is pharma tech prosperity, being envisaged as well-being health sector by providing high quality pharma products with time and with increase product quality. Patients started using new products for various specialized applications. The changes in customer profile and new usage patterns called for major up-gradation & innovative products we have produced.*

SPL's 100 products are available in Bangladesh. To meets the demands of patients, a dynamic SPL new product development process is formulated. Major steps of SPL Processes are identifying product positioning, quality function deployment, product conceptualizations, business case, detailed designs, prototypes evaluations, product launch etc. Quality control tools and techniques and design reviews are extensively used and strictly adhered to productivity, operation cost, serviceability, safety and regulatory norms are strictly maintained.

Keywords: *Customer, New Product Development, Quality Function Deployment (QFD), Productivity, Concurrent Engineering (CE). Design Review (DR).*

CAQ01

QUALITY AND INNOVATION OF THE INTERNET ERA

WANG Jun

Qingdao Haier Quality Conduct Company, Postcode: 266103, Tel: 0532-88939615, Email:wangjun@haier.com

Abstract: *In the internet era, the business fragmentation requires for individuation of enterprises. Quality should not only be limited to the product quality standards, but also should meet with customers' needs. The current quality development of Haier mainly includes the following three characteristics:1) change from the warranty period to the guarantee period, as the necessary condition for quality from the perspective of product quality:2) change from the guarantee period to the meeting with individual needs, as a sufficient condition for quality from the perspective of quality of users:3) creation of internationally competitive brands by occupying a commanding point of innovation with the leading standards. Brand concept ran through the 27-year brand development of Haier. The quality focuses on brand building for epochal character, internationalism and great value of the brand.*

Keywords: *Internet, Quality and Innovation, Customer Requirement*

CAQ02

IMPROVING 15-MINUTE ARRIVAL RATE FOR HIGHWAY ADMINISTRATION AND RESCUE PERSONNEL

WU Shanggan, SHEN Qunzhou, PENG Zhouzhi, LUI Baolin, and CHEN Qiusong

Guangzhou-Shenzhen-Zhuhai Highway Company Limited
Beizha, Humen town, Dongguan City, Guangdong Province, China
E-mail：984699936@qq.com

Abstract: *Shenzhen - Guangzhou Highway is a main traffic line connecting the Pearl River Delta and Hongkong and Macao regions, of which the daily designed traffic capacity of the section is 80,000 and it has reached to 89,000 in 2011. At present, any traffic accident, if not effectively handled within 15 minutes by the road management and salvation personnel, will likely slow a large-scale traffic stream for a long time. Through years of practice and conclusion, the Shenzhen - Guangzhou Highway administrators have formulated an assessment objective that the road management and salvation personnel must arrive at the accident scene within 15 minutes after the traffic accident occurrence. This QC topic is about researching on improving 15-minute-arrival rate for road management and salvation personnel, in order to find out the restraint factors, and carry out corresponding measures.*

Keywords: *Shenzhen - Guangzhou Highway, Large Traffic Flow, Road Management and Salvation, Keep Passage Clear, 15-minute arrival*

CAQ03

QUALITY CHANGES THE WORLD SERVICE CREATES VALUE

LIAO Xudong

Sany Heavy Industry Co. Ltd, Changsha, Hunan 410100, China
Tel: +86-731-84031888
Email: liaoxd@sany.com.cn

Abstract: *This paper mainly gives an introduction to the background, product characteristics, customer requirement and current situation of service of the Chinese engineering machinery industry, and the innovative ECC-centered service system of Sany Heavy Industry which is characterized with Integration of Heaven, Earth and Man and Collaboration of Three Lines. It also gives a description to the achievements and prospect in the service industry of Sany, aiming at promoting the service of the whole engineering machinery industry, creating more value for the customers and helping them achieve success.*

Keywords: *ECC, Engineering Machinery, Customer Service, Sany Heavy Industry*

CAQ04

QUALITY PROBLEM CLOSE LOOP BASED ON PRODUCT CHARACTERISTIC LINKAGE MODEL

WANG Yang and DUAN Gui-jiang

School of Mechanical Engineering & Automation
Beihang University, BUAA
Beijing, China
buaawangyang@gmail.com；gjduan@buaa.edu.cn

Abstract: *To support the application of quality problem closed loop (QPLP), a framework of quality problem analysis based on product characteristic linkage model is proposed. Firstly product function structure model was established and component function flow matrix was generated by reconstructing function structure model. Then the abnormal function flow was recognized and abnormal component function flow matrix was extracted. In the following, the key characteristics of each component were identified and characteristic linkage model was built. After that the quality problem was dealt with in a direct or an indirect way on the basis of characteristic linkage model. Finally an application case of a carrier robot moving structure was provided to validate the effectiveness of this method.*

Keywords: *quality problem close loop; function structure model; function flow matrix; characteristic linkage model; propagation network*

CAQ05

HOW TO CULTIVATE 6 SIGMA MASTER BLACK BELT EFFECTIVELY IN ENTERPRISES

ZHANG Dehua

Qingdao Haier Quality Conduct Company, Postcode: 266103, Tel: 15854213108, Email: zdh1207@tom.com

Abstract: *6sigma Master Black Belt (MBB) is an expert for application and methodology of 6sigma tools in enterprise strategy, process, quality and other aspects. The duty of MBB includes: communicate and cooperate with the corporate senior executives, identify key quality characteristics in business processes according to the corporate mid-term and long-term strategies; choose suitable projects; select., train and guide green and black belts, improve and optimize the business procedures at various levels, so to promote greatly the operation level of the corporate business procedures and maintain the performance of procedures at a high level of meeting the customer demand. MBB is the disseminator of corporate six-sigma gene and the spokesman of its transform. The ability to have MBB is the symbol of a six-sigma company with the perfect management system. This paper established the training process according to the strategic needs of the enterprises, and started the systematic development with personnel, selection of personnel, curriculum setup, lecturer engagement, process control, OEC, examination and evaluation, project practice and so on.*

Keywords: *6sigma; master black belt; system construction; project practice; certification management*

CAQ06

IMPROVE THE CHARGING CAPABILITY OF BILLING SYSTEM USING LEAN-SIX SIGMA

LU Dongliang[1], PAN Jun[2], Xie Heng[3], ZHANG Chendong[4], and LIANG Shihong[5]

Guangxi Branch of China Unicom, No.8, Jinpu Road, Nanning, Guangxi, China,
[1]donglianglu@chinaunicom.cn, [2]junpan@chinaunicom.cn, [3]xieheng1@chinaunicom.cn,
[4]chdzhang@chinaunicom.cn, [5] liangshihong@chinaunicom.cn

Abstract: *Lean-Six sigma is a practical set of theory of analyzing and controlling. Firstly in manufacturing industry, it is widely used in various fields to enhance the efficiency of production and management by recent years. The efficiency of CDR charging indicates the capability of a telecoms operator whose service-support nodes and billing system successfully generate and charge the consume records of subscribers. Based on Guangxi Branch of China Unicom's Lean-Six sigma project, this paper demonstrates a practical application of analyzing, controlling, managing and optimizing the process of billing, by using the typical DAMIC flow of Lean Six-sigma, to improve the IT operational level therefore.*

Keywords: *Lean, Six sigma, Management, Billing, Telecommunication*

CAQ07

THE HIERARCHY THEORY OF QUALITY EXCELLENCE MANAGEMENT

Quanfa WANG

Advanced Manufacturing Management Dept, Xizi Research Institute, Zhejiang University, 4F, East Crescent House, Zijingang Campus, Zhejiang University, Hangzhou, Zhejiang, China
Email: wangqf814@hotmail.com

Abstract: *There are so many quality models and methodologies evolved in the past that people in enterprises are frustrated how to select appropriate ones for their application to achieve quality excellence. To answer this question, a concept, called Quality Excellence Management (QEM), is coined. The bases of QEM are customer-oriented awareness and putting people first. Other QEM factors are healthy quality organization and function, strong quality competence, continuous quality improvement activities, a set of quality operating system, companywide quality KPIs and quality incentives based on the KPIs. The author categorized QEM into 3 levels: Preliminary, Intermediate and Advanced. Different enterprises in different levels should adopt different portfolio of quality models and methodologies. It is called the Hierarchy Theory of Quality Excellence Management (HT-QEM).*

The author sorted out more than 50kinds of popular quality models and methodologies applied in leading companies, and divide them into 3 groups. Different kind of QEM level is corresponding to the different group of quality models and methodologies.

Keywords: *Quality Models &Methodologies, Quality Excellence, QEO, QEM, HT-QEM*

CAQ08

IMPROVE THE LABOR PRODUCTIVITY OF RONGGUI TOLL STATION

HE Jianjun and WANG Junbiao

Guangdong Guangzhou-Zhuhai West Superhighway CO.,LTD, No.180,Kanghe Fang, 1st Nandi Road, Rongbian Community, Ronggui Town, Shunde District, Foshan City, Guangdong, China, 188632691@qq.com

Abstract: *Improving labor productivity is an effective way to reduce operating costs. Using QC group activities methods and tools, the group analyzed and researched how to increase labor productivity of the Ronggui toll station with all the members of wisdom. With the help of PDCA each link, include the steps of setting scientific target, decomposing and screening end factors which is effected the labor productivity by causality diagram, using statistical methods to confirm main factors and making detailed measures with the factors, strictly implementing and timely feedback. At last the original scheduling has made adjustment, formed a new scheduling system to consolidate the implementation effect. Through the group activity it obviously improved the labor productivity, and achieved the target, but also for the company whole labor productivity rise laid the foundation.*

Keywords: *Labor Productivity, Operating Cost, QC Team, The Causal diagram, Main factors*

CAQ09

REDUCING THE LOST RATE OF PASSWORD CARD BETWEEN TWO NON-NETWORKING SITES ON THE SHENZHEN - GUANGZHOU HIGHWAY

WU Shanggan, TAN Fei, YANG Shaotian, YAN ZhuoWang, LIANG Xiaoying, and LIN Qingsheng

Guangzhou-Shenzhen-Zhuhai Highway Company Limited
Beizha, Humen town, Dongguan City, Guangdong Province, China
E-mail：984699936@qq.com

Abstract: *As the most important access medium in the operation of highway network toll collection, highway password card (IC card) is used by all highway operation units. Though highway operation unit has taken a series of measures to use and management of the IC card, the effect of controlling IC card lost rate is not ideal in actual operations. That is not only caused the rising of tolling management cost and the loss of highway toll, but also significantly affected the order of networking toll. The study of paper is mainly research lost rate of IC card between two non-networking sites on the Shenzhen - Guangzhou Highway (Taiping Toll Gate northbound to Guangzhou Toll Gate, Changan Toll Gate southbound to Huanggang Toll Gate). Analyzing various reasons for the loss of IC card seriously and looking for solutions to the problems so as to set up scientific effective measures by highway operation unit to maintain the normal operation charge order.*

Keywords: *Reduce Highway IC Card Loss*

CAQ10

BUILDING ZERO DEFECT QUALITY CULTURE OF HAIER

ZHAO Liguo and MA Chao

Qingdao Haier Air conditioning Electronics Co. Limited, Postcode: 266555, Tel: 18653259856, Email: zhaolg@haier.com

Abstract: *Quality culture is an important part of the construction of enterprise culture, and is also the core of enterprise culture. Good quality culture atmosphere can enhance the core competition of the enterprises. This article focuses on the "zero defect" quality culture process and the method of commercial air conditioning of Haier starting from the quality culture. Perfect zero defect quality management system, promote a Win-Win Business Mode of Order-Employee Correspondence, and learn Six Sigma methodology through the establishment of an inverted triangle organization. Build "zero defect" quality culture of the full participation and continued improvement from the work of organization，system，method，labor so as to construct first-class quality management and skilled team, improve the product quality and customer satisfaction, and also enhance the core competition of enterprises.*

Keywords: *Quality culture; zero defect; Inverted triangle Win-Win Culture; Six sigma*

CAQ11

IMPROVING THE QUALIFICATION RATE OF STAFF'S CIVILIZATION SERVICE

GU Jiankai and CHEN Xianqiang

Guangdong Guangzhou-Zhuhai West Superhighway CO.,LTD, No.180,Kanghe Fang, 1st Nandi Road, Rongbian Community, Ronggui Town, Shunde District, Foshan City, Guangdong, China, 691064540@qq.com

Abstract: *Civilization service is highway operation enterprise's important embodiment of quality service brand; civilization service directly affects the company's image. The group discusses how to improve civilization service qualifying rate, with the aid of QC group activities, through the PDCA cycle, continuous improvement, and realize the target early set. This topic activity set the target scientifically, by system chart layer upon layer to make the selection at the original factors; by the way of investigation, statistics, interview to identify the main factors; and developing detailed feasible countermeasures table on that basis which we discussed, implement strictly and check feedback timely. With the system form curing, consolidate the implementation effect. Effective in ensuring civil service qualifying rate reached about or above toll target, improving the service level for the company provides direction.*

Keywords: *Civilization Service, Qualification Rate, QC Team, The system chart*

CAQ12

INCREASING OUTFIELD EQUIPMENT INTACTNESS RATES OF MAINLINE CLOSED CIRCUIT TELEVISIONS

WU Shanggan, QU Zheng, LI Rongai, LIU Bibo, JIN Wenmin, and XU Xianwei

Guangzhou-Shenzhen-Zhuhai Highway Company Limited
Beizha, Humen town, Dongguan City, Guangdong Province, China
E-mail：48227432@QQ.COM

Abstract: *Mainline closed circuit TVs are mainly used for real-time monitoring of mainline traffic conditions of highways so that traffic control personnel will find traffic congestion and abnormal events on highways, and provide highway drivers and conductors on a timely basis with road traffic information by information release and information display, and carry out traffic dispersion and traffic diverging. For outfields of Guangzhou-Shenzhen Highway, 96 sets of traffic control closed circuit TV equipment are installed, and such equipment is exposed to the sun and rain and is greatly impacted by lightning strokes and shocks of bridges, so there is higher frequency of equipment failures. In this Article, the actual repairs of mainline closed circuit TV equipment for Guangzhou-Shenzhen Highway are taken as the subject, with in-depth analysis of causes for failures in equipment and effective actions taken to increase intactness rates of equipment.*

Keywords: *Highway; Outfields; Closed Circuit Tvs; Intactness Rates; Enhancement*

CAQ13

QUALITY ASSURANCE FOR HOUSEHOLD APPLIANCES IN LARGE-SCALE PRODUCTION WITH VARIOUS BREEDS

LI Ming

Hefei Haier Washing Machine Co. Ltd. Postcode：230601 Tel: +86-551-7135116 Email:liming.xyj@haier.com

Abstract: *When consumers' individualized needs of products and rapid popularization of home appliances take the home appliances on the features of various kinds and large-scale manufacture. This manufacture pattern meets the needs of customers, but brings the grim challenge for the quality control. This paper tries to study how to improve the quality of products under the large-scale production to increase the customers' satisfaction from the three perspectives: the new System of Quality Control, quality assurance innovation system under the background of large-scale production and quality assurance pattern improvement.*

Keywords: *Large-scale Production with Various Breeds; quality assurance; customers' satisfaction*

CAQ14

THE QUALITY ECONOMIC MODEL AND STRATEGY BASED ON THE GENERALIZED QUALITY AND CUSTOMER VALUE

XUE Chao

Downhole Services, Daqing Oilfield Co.,Ltd xuechao@petrochian.com.cn

Abstract: *this paper makes a incisive analysis and elaboration about the generalized quality and customer value. It establish a concise and specific quality economic model through analyzing the correlation between quality upgrade, quality cost, customer value and corporate earnings combining with the situation of market operation. It also defines the conceptions of outstanding quality effect, quality cost-quality upgrade hysteresis, customer value-market response hysteresis and quality economy load zone, this paper also gives the advice for the quality management strategy of enterprises according to the quality economic model.*

Keywords: *Generalized quality, customer value, quality economic, quality cost, corporate earnings*

CAQ15

THE CONTINUOUS IMPROVEMENT METHOD FOR OILFIELD ENGINEERING TECHNICAL SERVICE ENTERPRISE QUALITY MANAGEMENT

Jianzhu GONG

Daqing Oilfield Down Hole Service Sub-company, Daqing City Heilongjiang Province China
Email: jx_gongjzh@petrochina.com.cn

Abstract: *The paper objectively analyzes the present situation of oilfield engineering technical service enterprise quality management; confirms the enterprise quality management successful practice; and shows out the existing problems and insufficiencies in the quality management. The paper also makes suggestions on quality responsibility and awareness, overall control, performance improvement, etc.*

Keywords: *Oilfield, Enterprise, Quality, Improvement, Method*

CAQ16

LEGAL RISKS AND COMPLIANCE MANAGEMENT ON PRODUCT QUALITY

JIANG Suhua

Beijing YingKe Law Firm, 6/F Tower C, Dacheng International Center,No.76, 4th Ring Middle Road, Chaoyang District, Beijing, China. jshaoe@hotmail.com, jiangsuhua@yingkelawyer.com; 010-5718 3458

Abstract: *The value of Company's existence is to offer satisfied products or service to relevant interested parties. The company is also supposed to assume social responsibility. If the product quality has some problems, it will put the company in big risks, even in crushing situation. So a quality compliance management system, which is good, practicable, and suitable for the company's own situation, can prevent, control, find, solve the product quality problems, and can improve its social image and make profit for the company and this society. The article will mainly discuss compliance management, product quality risks, why the company should found a compliance management system on product quality and how?*

Keywords: *Company's Value, Social Responsibility, Product Quality Risks, Compliance Management, Product Quality Compliance Management*

CAQ17

RESEARCH AND APPLICATION OF 3G ELECTRICAL SAFETY JOB SITE INTELLIGENT MONITORING DEVICES

ZHAO Changqing[1], ZHAO Chenxu[2], XU Heng[3], ZHANG Haijun[4], and SUN Minghao[5]

The Bayannur power Bureau of Inner Mongolia Electric Power Group Co.Ltd,
[1]zhaochangqing339@126.com, [2]bmzcx99@sina.com, [3]18604896111@163.com, [4]nmgzhj@163.com,
[5] nmgsmh@163.com

Abstract: *The paper describes the shortcomings and difficulties of power company security construction site management for construction site security monitoring personnel is limited, in recent years , rural power grids and Urban Network alteration Faced with new situation. The use of advanced science and technology and communication terminal in order to better strengthen the means of power construction site safety supervision, improve the level of safety production supervision, design and development of a new electrical safety job site intelligent monitoring devices. The device consists of three parts of the remote wide angle 360 degrees of portable video surveillance equipment and 3G smart terminal equipment and portable battery. Through the application of such a device, professionals can remotely monitor the construction job site safety, diagnose, and effectively improve the security of the electricity sector management and reduce security risks and personnel on-site monitoring costs for improving the security of the entire power industry field operations with significance.*

Keywords: *Safety, Electrical, intelligent monitoring, application*

CAQ18

CONTINUING EDUCATION: CHERISHING QUALITY FOR THE FUTURE

DIAO Qingjun[1], LIU Xianyan[2], and LI Jianbin[3]

[1]School of Continuing Education, Tsinghua University, 4th Floor, Tower A, Chuangxin Plaza, Tsinghua Science and Technology Park, Beijing 10084, China
Email: diaoqj@mail.tsinghua.edu.cn
[2]School of Continuing Education, Tsinghua University, 4th Floor, Tower A , Chuangxin Plaza, Tsinghua Science and Technology Park, Beijing 10084, China
Email: luthyialiu@gmail.com
[3]Administration of professional training, 2nd floor, Jing Hall, Tsinghua University, Beijing 10084, China
Email: lijianbin@mail.tsinghua.edu.cn

Abstract: *The world is changing faster with accelerating advancement of science and technology and the future will be full of competitions and complexities. As a part of lifelong learning, continuing education will certainly play an increasingly important role for individuals and organizations since it is taking on new meanings and will shoulder more responsibilities in the future. With relevance with the eight forces of change which will vastly and deeply impact all industries and shape the future of quality, continuing education will meet with new challenges and opportunities while quality will always be its cornerstone for its development to satisfy the needs of just-in-time learning in the future. From perspective of future continuing education quality will certainly have new connotations. China, a developing nation with the largest population in the world, will exert special-featured demands for continuing education, which is expected to undertake its own mission for the future of the nation. School of Continuing Education, a subsidiary school of Tsinghua University, driven by a spirit of innovation, had realized what social responsibilities to shoulder and had achieved initial success by producing and enforcing quality system requirements. To perform one of the main functions of Tsinghua University to serve the society, we will always cherish quality for our brighter future on the way of globalization.*

Keywords: *Continuing Education, Quality, Future, Opportunities, Challenges, Cornerstone*

TW01

THE APPLICATION OF DECISION TREE-BASED ENSEMBLE CLASSIFIERS FOR DIAGNOSING THE MEAN SHIFT SIGNALS IN MULTIVARIATE CONTROL CHART

Hung-Ting LEE, Chuen-Sheng CHENG, Yun TAI, and Yi-Chun HUANG

Department of Industrial Engineering and Management, Yuan-Ze University
135 Yuan-Tung Rd., Chung-Li, Taoyuan, Taiwan, R. O. C
E-mail: s978907@mail.yzu.edu.tw

Abstract: *The Hotelling T^2 control chart is an important tool for monitoring process shift is in multivariate statistical process control (MSPC). In addition to the detection of out-of-control situation, there is also a need for diagnosing the out-of-control variable, or variables, when a multivariate control chart signals.*

This paper presents a decision tree-based ensemble model to address the diagnosing issue in multivariate process control. The commonly used ensemble methods, including bagging and AdaBoost, are considered in this paper. To improve the classification performance, we propose using a set of features extracting from process data. The results of comparative studies indicate that the proposed ensemble classifiers together with the proposed features can significantly improve the classification performance. The proposed approach contributes to process monitoring and identifying the source of mean shifts in multivariate statistical process control that could effectively assisting engineers in identifying the responsible variable(s) and accelerating the generation of improvement actions.

Keywords: *multivariate statistical process control, mean shift, ensemble learning, decision tree*

TW02

A STUDY ON IMPLEMENTATION OF QUALITY MANAGEMENT FOR SERVICE AND MANUFACTURING INDUSTRIES

Ta-heng CHIANG[1]*, Ching-Chow YANG[1], Ling-Huey SU[1], and Han-Jung LIU[2]

[1]Department of Industrial and Systems Engineering, Chung Yuan Christian University, Taiwan, CSQ (Chinese Taipei), *email: g9902410@cycu.edu.tw
[2]Retired professor of National Cheng Kung University, Taiwan, CSQ (Chinese Taipei)

Abstract: *Consumers constantly have high demands on qualities of both products and services; therefore, it has become fairly common to import a quality-control system to a service-oriented business that acts positively towards quality-control issues. In many cases, the quality control methods utilized by the service sector were initially developed by the manufacturing industry and further adjusted, if needed, by the service sector. The objective of this study is to present the difference in implementing the quality management by the two industrial sectors. Proceeding first with a literature review, this study divides the quality management activities into 5 stages: the product quality, the process quality, the system quality, the total quality, and the business quality. Through modifications by experts and scholars, the quality control managements for different stages have been integrated. By aid of relevant questionnaires, the extent and difference in quality-management implementation with any stage or all five stages may be elucidated for both service and manufacturing industries. It is hoped that the result from this study may serve as a useful reference to business sectors for ultimately promoting the performance qualities and competitive advantages.*

Keywords*: Service industry, Manufacturing industry, Quality management*

TW05

A NOVEL SUGGESTION SYSTEM USING DEMING 14 POINTS AND BALANCED SCORECARD

Pei-Lin JANG[1], Gary TSAI[2], Ricky PO[3], and Alice WU[4]

Taiwan Semiconductor Manufacturing Company, Ltd. Hsin-Chu Science Park, Taiwan, R.O.C
[1]E-mail: PLChang@tsmc.com
[2]E-mail: YCTSAIX@tsmc.com
[3]E-mail: YHPO@tsmc.com
[4]E-mail: HCWUZD@tsmc.com

Abstract: *It is a common practice to use an employee suggestion system to collect employees' ideas for improvements in the working areas. An effective suggestion system will improve the innovation culture and increase the competitiveness of the company. This article introduces the practices of using 8 of Deming 14 Points of management in the employee suggestion system. We use these concepts to build up a continual improvement cycle that includes an electronic platform, an effective reward method, top management endorsement and excellent cases sharing. In addition, our suggestion program adopts the concept of Balanced Scorecard (BSC) to reward good improvements in 9 topics, covering from long-term and short-term, internal and external, financial and non-financial. We would like to share our experience about the system and it's effectiveness. We hope this paper will benefit readers in different companies.*

Keywords: *Suggestion System, Balanced Scorecard, Deming 14 Points of Management, Continual Improvement, Employee Involvement*

TW06

THE ASSESSMENT ON INTELLIGENT AGENT

Wen-Yau LIANG

Department of Information Management, National Changhua University of Education, Taiwan, ROC
Email: wyliang@cc.ncue.edu.tw

Abstract: *An agent can be seen as a software and/or hardware component of system which is capable of acting exactingly in order to accomplish tasks on behalf of its user. However, researches in this area primarily focus on developing technologies in agent systems itself, and research works which evaluate the intelligent agent performance are few and far between. This research is to assess intelligent agent in B2C e-Commerce negotiation. An experimental design is used to collect experiment data and a questionnaire is conducted to investigate the benefits of intelligent agent. Results show that intelligent agent do improve performance of negotiation system.*

Keywords: *B2C E-Commerce, Intelligent agents, Negotiation, Assess*

TW07

CONSTRUCTING PERFORMANCE APPRAISAL CRITERIA BASED ON SPENCER COMPETENCIES IN SMALL-SIZED SERVICE COMPANIES

Ronald SUKWADI[1,2] and Ching-Chow YANG[1]

[1]Department of Industrial and System Engineering, Chung Yuan Christian University
200, Chung Pei Rd., Chung Li 32032, Taiwan
Email: chinchow@cycu.edu.tw
[2]Department of Industrial Engineering, Atma Jaya Catholic University
Jalan Jenderal Sudirman 51, Jakarta 12930, Indonesia
Email: ronaldmanutd@yahoo.com; ronald.sukwadi@atmajaya.ac.id

Abstract: *Performance appraisal has been put in the most important place in human resource management, as well as in the strategic management. Performance appraisal is a process used by the industries to evaluate their employees' efficiency and productivity; it is also used to plan the employees' promotion program, salary policy, layoffs decisions, etc. In such an evaluation process the appraisers adopt some key criteria to employees' performances. In this paper we develop the core appraisal criteria based on Spencer competencies for workers in small-sized service companies. As there are dependencies among criteria, analytical hierarchy process (AHP) is used for comparing the evaluation criteria under consideration and determining perceptions of the importance of various criteria. The proposed appraisal criteria could be considered as a reference for the industries and any organizations. In this study, we conduct the empirical study for small cleaning service companies.*

Keywords: *performance appraisal, competencies, Spencer, AHP, small-sized service company*

TW08

AN OVERVIEW OF TAIWAN TRAINQUALI SYSTEM (TTQS) AND NATIONAL TRAINQUALI PRIZE (NTQP)

Ta-Cheng CHIANG[1]*, Ching-Chow YANG[1] , Ling-Huey SU[1] , and Han-Jung LIU[2]

[1]Department of Industrial and Systems Engineering, Chung Yuan Christian University, Taiwan, CSQ (Chinese Taipei), *****email: g9902410@cycu.edu.tw
[2]Retired professor of National Cheng Kung University, Taiwan, CSQ (Chinese Taipei)

Abstract: *In face of the rapid advance in knowledge and technology, promoting the human capital has become a major factor for a country to maintain its international competitiveness; consequently, the personnel cultivation becomes a crucial element in the industrial revolution. In order to improve the professional competence of the personnel training and service development, the Bureau of Employment and Vocational Training has established training quality guidelines, called the Taiwan TrainQuali System (TTQS). To improve the manpower training and performance, TTQS adopted methods to assess industrial training quality managements. In 2011, in attempts to praise organizations having demonstrated outstanding effectiveness on implementing training qualities, the first National TrainQuali Prize (NTQP) was introduced. This Prize draws more attention to businesses investing on the human capital. Businesses can view advantages and disadvantages of their own training systems via the TTQS evaluations. Moreover, when a business applies for the NTQP, it can examine whether its training system has been fully implemented or that it needs to be further improved, which is helpful to the training program. This study shows how businesses can apply for the National TrainQuali Prize (NTQP) by complying with the guidelines issued by the TTQS.*

Keywords: *Human resources management, Taiwan TrainQuali System (TTQS), National TrainQuali Prize (NTQP)*

TW09

AN EVALUATION OF MAHALANOBIS-TAGUCHI SYSTEM AND SELECTIVE NAIVE BAYESIAN ALGORITHM FOR MULTIVARIATE PATTERN RECOGNITION

Jui-Chin JIANG and Tai-Ying LIN

Department of Industrial and Systems Engineering, Chung Yuan Christian University. 200 Chung Pei Rd., Chung Li 32023, Taiwan, R.O.C
E-Mail address: lty0858@vnu.edu.tw

Abstract: *Classification is one of the most important topics in data mining. The method of Mahalanobis Taguchi System (MTS) is a very economical way of multidimensional pattern recognition system. The method of Selective Naïve Bayesian algorithm (SNB) is a very successful approach for removing noisy and/or redundant attributes. The goal of this study is to compare the accuracy and effectiveness of these two methodologies. Through the application of computing, We've found that the method of Selective Naïve Bayesian algorithm is a better classifier on the accuracy and effectiveness of classification.*

Keywords: *Mahalanobis-Taguchi System (MTS), Mahalanobis distance, orthogonal array, Signal-to-Noise ratio, Selective Naïve Bayesian Algorithm*

TW10

THE DIFFUSION OF VOLUNTARY ISO 26000 AMONG SMES IN TAIWAN: EXPLORATORY EVIDENCE FROM THE NATIONAL SURVEY

Yen-Chun Jim WU[1] and Chih-Hung YUAN[2]

Department of Business Management, National Sun Yat-Sen University, 70, Lienhai Rd., Kaohsiung 80424, Taiwan
[1]Email: ycwu@faculty.nsysu.edu.tw
[2]Email: ialexyuan@gmail.com

Abstract: *Businesses are under the increasing pressure to demonstrably engage in activities which are known as social responsibility (SR). Following the market demand, the International Standard Organization (ISO) developed ISO 26000 international guidance standard for SR. There is an increasing appeal for SMEs to become engaged in SR practices. However, the relationship between small and medium enterprises (SMEs) and SR is elusive. Therefore, the purpose of this paper will be aimed at how SMEs among Taiwan will adopt ISO 26000 under what circumstances. We determine a set of hypotheses about diffusion of ISO 26000 and hence SR practices. A questionnaire survey sent to 266 industrial participants in Taiwan. The results showed a better understanding of the cognition-behavior gap while doing good. SMEs thought that SR was Philanthropic responsibility, but strived for their subsistence as their top priority of strategy decisions. Unfortunately, the impacts of multinomial company and government are not decisive. If SMEs take SR practices into consideration when evaluating stakeholders, they are more likely to adopt ISO 26000. Thus, SMEs cannot carry it out "wholehearted," things will not work.*

Keywords: *Diffusion, ISO 26000, SMEs, Social responsibility*

TW11

IDENTIFYING THE PROCESS STATUS CHANGE USING INDEPENDENT COMPONENT ANALYSIS AND SUPPORT VECTOR MACHINE

Kuo-Ko HUANG, Chuen-Sheng CHENG, Pei-Wen CHEN, Man-Szu HSU, and Miao-Jing CHIANG

Department of Industrial Engineering and Management, Yuan-Ze University
135 Yuan-Tung Rd., Chung-Li, Taoyuan, Taiwan, R. O. C
E-mail:s958914@mail.yzu.edu.tw

Abstract: *Time series data pattern recognition is a promising research issue in statistical process control. In this paper, we assume that the observations from the in-control process are a mixture of in-control signal(s) and random noise. The in-control signal(s) switches to different types of signal when the process status changes. In such cases, the monitoring of process data can be formulated as a pattern recognition task. This paper proposes a new approach using independent component analysis (ICA) and support vector machine (SVM) for time series data pattern recognition. The proposed method initially applies ICA to the measurement data for generating independent components (ICs). The ICs comprise important information contained in the original observations. The ICs are then served as the input vectors of the SVM model to recognize the time series data pattern. Extensive simulation studies indicate that the proposed recognizers perform better than that using raw data as inputs.*

Keywords: *Time Series Data Pattern, Independent Component Analysis, Support Vector Machine*

TW12

ASSESSING THE EFFECTS OF EXPERIENTIAL MARKETING AND IMAGE ON CUSTOMER SATISFACTION AND LOYALTY IN EXTENSIVE EDUCATION

Ling-Lang TANG [*1] and Yun-Chung YEH[2]

[1]School of Management, Yuan Ze University, TaoYuan, Taiwan, R.O.C
E-mail: balltang@saturn.yzu.edu.tw
[2] Hsin-Nan Junior High School, TaoYuan, Taiwan, R.O.C
E-mail: Pigbb99@yahoo.com.tw

Abstract: *This paper investigates the relationship among experiential marketing, school image, customer satisfaction, and customer loyalty, and what lifelong education needs to response in the future. We propose and test a model with two antecedents on consumer satisfaction. The hypothesized model is validated empirically using data collected from 244 learners of an extensive learning program designed for school of lifelong education. According to analysis data, the results indicate that experiential marketing significantly influences consumer satisfaction. The results also show that school image affects consumer satisfaction. In addition, we find a significant relationship between learner's experience and satisfaction.*

Keywords: *experiential marketing, customer satisfaction, customer loyalty, extensive education*

TW13

USING BACK-PROPAGATION NEURAL NETWORKS TO EXPLORE THE PERFORMANCE EVALUATION IN THE TAIWAN TRAIN QUALI SYSTEM

Yih-Chuan WU[1], Yung-Tsan JOU[2], Wei-Cheng LEE[3], Wen-Tsann LIN[4], and Ya-Lin SHIEH[5]

[1, 2, 3]Dept. of Industrial & Systems Engineering, Chung Yuan Christian University, Taiwan
E-mail:jason_wu1102@yahoo.com.tw
[4]Dept. of Industrial Engineering & Management, National Chin-Yi University of Technology, Taiwan
E-mail:lin505@ncut.edu.tw
[5]Dept. of Information Management, National Chin-Yi University of Technology, Taiwan

Abstract: *This study is based on the Taiwan TrainQuali System (TTQS) evaluation database, which was formulated by the Bureau of Employment and Vocational Training, Council of Labor Affairs, Taiwan. The purpose is to explore the correlations between TTQS evaluation grades. The TTQS evaluation mechanism is inspected to find out whether the businesses and training institutions under evaluation have all achieved the level in every grade to further understand the TTQS evaluation indicators' ability of identification TTQS and observe how accurate the evaluation grade are. To enable, with the analytic results using the factor analysis and the back-propagation neural networks analysis provided in this study, the training institutions that have carried out or are to introduce TTQS to begin by planning and assessing how to effectively introduce TTQS in the evaluation indicators to increase their human resources as an organization.*

Keywords: *Assessment, Back-Propagation Neural Networks (BPNN), Factor Analysis, Human Capital, Taiwan TrainQuali System (TTQS)*

TW14

NATIONAL LOGISTICS COMPETITIVENESS AND CORRUPTION: EVIDENCE FROM EMERGING COUNTRY

Yen-Chun Jim WU[1] and Chih-Hung YUAN[2]

Department of Business Management, National Sun Yat-Sen University, 70, Lienhai Rd., Kaohsiung 80424, Taiwan
[1]Email: ycwu@faculty.nsysu.edu.tw
[2]Email: ialexyuan@gmail.com

Abstract: *Logistics/supply chain management has a critical role in a nations' overall competitiveness as it accounts for a significant share of a nation's GDP albeit with a wide range of 9%-30%, depending on the economic maturity of that country. Logistics is now considered the last way to reduce cost. However, much of the literature on the subject treats logistics efficiency as black box systems. Corruption is closely linked to emerging countries and plays a cardinal role in the overall governance of logistics systems. Therefore, this paper investigates empirically the effect of corruption on countries' logistics efficiency. By using a sample of emerging and advanced economies in the period from 2000 to 2009, the paper applies RC and panel data techniques to analysis. The result shows that there is a U-shaped relationship between countries' logistics competitiveness and corruption perception levels for emerging. The reduction of corruption is beneficial to an emerging country's logistics efficiency. However, as for advanced economies, their relationship above is in an inverted U-shaped curve.*

Keywords: *Logistics competitiveness, Corruption Perception Index, Revealed Competitiveness*

TW15

A DEPENDENT MODEL OF DMAIC AND DMADV RESEARCH IN SIX SIGMA PROJECT: A CASE STUDY IN ESD PROTECTION COMPONENT

Chi-Ming KUAN and Chuen-Sheng CHENG

Department of Industrial Engineering and Management, Yuan-Ze University
135 Yuan-Tung Road, Taoyuan, Taiwan. R.O.C(CSQ)
kuan@csq.org.tw

Abstract: *DMAIC (Define, Measure, Analyze, Improve, Control) , it is the procedure that six sigma procedure improved. DMADV (Define, Measure, Analyze, Design, Verification) , it is six sigma procedure that designs the procedure transforming. These two activities of improving are implemented by the independent special project* at *the past. However, it is improved that the unable whole project is satisfied during DMAIC procedure stage, may need to involve the procedure and is redesigned and can be finished improving, benefit which the procedure may produce is not best independently such as adhering rigidly to each. So, this research use DMAIC and DMADV course alternately, set up one pair of ways and use, can get better result of improving with shortening time. The research used with circuit protection component make production process carry on case study, probe into during the project of improving the process and use simultaneously with case in this two procedure, can accelerate and optimize to improve, in result that the real case uses.*

Keywords*: DMAIC, DMADV, Pair Model*

TW16

USING MODIFIED TRIZ APPROACH FOR QUALITY IMPROVEMENT

Chang-Lin YANG, Rong-Hwa HUANG, Wei-Ling WEI

Department of Business Administration, Fu Jen Catholic University
No.510, Zhongzheng Rd., Xinzhuang Dist., New Taipei City 24205, Taiwan
051125@mail.fju.edu.tw

Abstract: *TRIZ was developed in the former Soviet Union by G. Altshuller. TRIZ is a powerful and well used tool for generating new ideas for solving technical problems in quality improvement (QI). This study attempts to modify the TRIZ methodology and extend it to a broader application, namely resolving problems concerning the management of quality improvement. This study comprises three stages: 1. investigating and analyzing the requirements of QI; 2. using TRIZ tools to analyze and resolve QI problems; 3. building an action plan for achieving resolution.*

Keywords: *Quality improvement, TRIZ*

TW17

MONITORING OF PROCESS AND PRODUCT PROFILES USING ARTIFICIAL NEURAL NETWORKS

Chuen-Sheng CHENG, I-Lin WU, Sih-Yin CHEN and Yen-Lu LEE

Department of Industrial Engineering and Management, Yuan-Ze University
135 Yuan-Tung Rd., Chung-Li, Taoyuan, Taiwan, R. O. C
E-mail: ieccheng@saturn.yzu.edu.tw

Abstract: In most statistical process control (SPC) applications, it is usually assumed that quality characteristics can be adequately represented by a single measurement from an univariate distribution or from a multivariate distribution of a vector formed by multiple measurements. However, in an increasing number of applications, there is an interest in monitoring multiple measurements constituting a line or curve. This type of data structure or the relationship between a response variable (y) and one or more explanatory variables (x) is referred to as a profile. The purpose of profile monitoring process control is to detect whether change is occurred in a process's functional relationship. The functional relationship of the profile can be presented by a linear, nonlinear, curve surface or dispersed format. Here we propose an artificial neural network-based prediction model to monitor the coefficients in a simple linear regression model of a profile. In performance evaluation, we use ARL criterion to assess the efficiencies of detecting shifts in profile data. The proposed methods are able to enhance the monitoring performance after comparing the results with the traditional methods. The main contributions of this research include enhancing the monitoring efficiency and assisting work efficiency in industrial application.

Keywords: *Process Profile, Product Profile, Artificial Neural Networks, Non-parametric Method*

TW18

ANALYSIS OF CRITICAL EVALUTION FACTORS OF THE EWPS SCALE FOR BOUNDARY-SPANNERS USING DEMATEL

Hsuan-Kai CHEN[1], Shang-Ping LIN[2], Tsai-Ding LIN[3] and Hsin-Hung WU[4]

[1]Department of Marketing and Logistics Management, Chaoyang University of Technology
Email: lisa123@ms18.hinet.net
[2]Department of Business Administration, National Yunlin University of Technology
Email: linsp@yuntech.edu.tw
[3]Department of International Business, Tunghai University
Email: tdlin@thu.edu.tw
[4]Department of Business Administration, National Changhua University of Education
Email: hhwu@cc.ncue.edu.tw

Abstract: *This study uses the outreach personnel who perform boundary spanning activities from the Bureau of Employment and Vocational Training and the self-developed but validated EWPS scale based on the Chinese area. The EWPS scale covers three domains and 11 overall categories. The first domain is task which includes objective management, time management, quality request, and information processing. The second domain is relationship, and social skills, self-adjustment, and affiliation needs are the three categories under the relationship. Self-psychology, the third domain, has four categories covering positive attitude, no sense of conflict, no sense of rejection, and social support.*

In order to evaluate the importance of these three domains and 11 categories, thirteen executive decision makers are participated and decision making trial and evaluation laboratory (DEMATEL) is used as a tool to compute the importance and structural relationships of domains and categories. The most important category is positive attitude followed by no sense of conflict, while the least important category is quality request.

Keywords: *decision making trial and evaluation laboratory, personnel selection, boundary-spanner, EWPS scale.*

TW19

CUSTOMER REQUIREMENT BASED QUALITY PLANNING AND IMPROVEMENT FOR FOOD AND BEVERAGE MANAGEMENT

Chang-Lin YANG, Rong-Hwa HUANG, and Shu-Ju LIAO

Department of Business Administration, Fu Jen Catholic University
No.510, Zongzheng Rd., Xinzhuang District, New Taipei City 24205, Taiwan
Email: 051125@mail.fju.edu.tw

Abstract: *This study integrates the Kano two-dimensional quality model and quality function deployment (QFD) to construct a systematic mechanism for food and beverage service planning and improvement. This study adopts a three stage research framework: 1. Surveying food and beverage service needs, 2. Extracting key quality factors for food and beverage service, 3. Proposing methods for improving food and beverage service.*

Keywords: *Food and beverage service, Kano model, quality function deployment*

TW21

DEVELOPMENT AND IMPLEMENTATION OF THE HAZARDOUS SUBSTANCE PROCESS MANAGEMENT

Gary TSAI[1], Chia-Fu CHANG[2] and Ya-Hui CHAN[3]

[1]CSQ (Chinese Taipei), Taiwan Semiconductor Manufacturing Company, Hsin-Chu Science Park, Taiwan, R.O.C, Email: yctsaix@tsmc.com
[2]CSQ (Chinese Taipei), Taiwan Semiconductor Manufacturing Company, Hsin-Chu Science Park, Taiwan, R.O.C, Email: cfchango@tsmc.com
[3]CSQ (Chinese Taipei), Taiwan Semiconductor Manufacturing Company, Hsin-Chu Science Park, Taiwan, R.O.C, Email: yhchank@tsmc.com

Abstract: *In this paper, we would like to explore how an enterprise can manage the reduction, elimination, restriction and prohibition of hazardous substances usage, and integrate the target of hazardous substance free (HSF) to the supply chain. The current study will also present a case of a semiconductor manufacturing company, TSMC, who, following the guidelines of ISO 9001:2008 quality management system and IECQ QC080000, has designed and implemented Hazardous Substance Process Management (HSPM) system. The scope of the current discussion includes the HSF commitment, policy and management plans. In addition, issues relating to green procurement, green design, green production, green service and related improvement on system management and green supply chain deployment are addressed.*

Keywords: *Hazardous Substance Free (HSF); International Electronic Component Qualification (IECQ); Hazardous Substance Process Management (HSPM); Restriction of certain Hazardous Substance (RoHS).*

TW22

APPLYING LEAN THINKING TO DEVELOP A CUSTOMER VALUE ANALYTIC MODEL FOR THE SERVICE INDUSTRY

Chang-Hsi YU[1] Chi-Hsun TSAI[2] Chi-Kuang CHEN[2] An-Jin SHIE[2]

[1]Department of Business Administration, Yu Da University, Taiwan
E-mail: tony@ydu.edu.tw
[2]Department of Industrial Engineering and Management, Yuan Ze University, Taiwan
E-mail: ieckchen@saturn.yzu.edu.tw

Abstract: *The objective of this paper is to develop a customer value analytic model by using the lean thinking concept. In response to the increasing customer demands, developing the high valuable services for customers has become an increasingly challenging task for business managers. Chen et al. research (2005) found that meeting the requirements of customers is a crucial issue in designing any service system. However, most of managers paid little attention on this issue due to that it is too complicated to deal with. Thus, how to improve this weakness to enhance customer satisfaction in the service industry is an important issue. To fulfill this purpose, this study firstly applies the lean thinking concepts and practices to investigate the classification and content of the customer value, and then proposes a customer value analytic model for the service industry, finally, conducts an empirical case study to test the applicability of the proposed customer value analytic model.*

Keywords: *Lean Thinking, Lean Production, Customer Value, Service System*

TW23

A STUDY ON THE RELATIONSHIP BETWEEN ORGANIZATIONAL SLACK AND QUALITY PERFORMANCE: THE MEDIATING ROLE OF AMBIDEXTERITY

Che-Hung LIN[1] Guo-Chang CHUNG[2]

[1]Department of Information Management, Cheng-Shiu University, Taiwan
Email: linch@csu.edu.tw
[2]Department of Business Management, National Dong Hwa University, Taiwan
Email: oil098@yahoo.com.tw

Abstract: *Organization is an open system. Due to the continuous transition of the internal and external environment, the organization needs to voluntarily adapt to the environment to maintain long-term survival and development. Moreover, research and development (R&D) is quite important to the competitive advantage of a company but it is quite difficult to have R&D during recession. Hence, this study investigated whether R&D would significantly affects quality performance through organizational slack and organizational ambidexterity. The results of this study indicate that exploitive and explorative R&D strategies, in fact, have a kind of mediating relationship. The organizational slack will affect quality performance through ambidextrous R&D. It is proved that ambidextrous organization can implement R&D works more flexibly in the actual practice and thus, would accomplish a better quality performance.*

Keywords: *organizational slack, quality performance*

TW24

A STUDY OF CONSUMER BEHAVIOR OF TAIWAN IN "TOPICAL PAIN RELIEVER" PRODUCTS

CHEN Hsuan-KAI[1, 2], HUANG Yueh-Chuen[3] and WAN Wei-Ping[4*]

[1]Department of Marketing and Logistics Management, Chaoyang University of Technology
Email: lisa123@ms18.hinet.net
[2]Department of Information Management, Chaoyang University of Technology
Email: lschen@cyut.edu.tw
[3]Department of Business Administration, National Taichung University of Science and Technology
Email: ychuang@nutc.edu.tw
[4]Faculty of International Tourism Macau University of Science and Technology
Email: wpwang@must.edu.mo

Abstract: *This research analyzed, how do the consumers choose "Topical pain reliever" products to match themselves need. Moreover, this research also examined that service and products consuming process from users and re-purchasing decision making. The research method used random sampling in Taiwan. Totally, 820 questionnaires were distributed and 560 complete usable questionnaires were collected. All the data was used SPSS software to analyze. The result showed consumers purchase "Topical pain reliever" products most are the people who exercise twice a week and each time take thirty minutes to one hour. Those customers chose pharmacy or drugstore to buy those products. The major affect customers are T.V advertisements and usual using habit. Taiwan customers are more interesting in Chinese herb plaster, even though that the customers are without loyalty with their purchase behavior. Female were the major buyer. Conclusion suggested good image, higher quality and well known brands of products which can attract customers' purchase desire.*

Keywords: *"Topical pain reliever" product, product quality, consumer behavior, image of brand, purchasing intention.*

TW25

THE EFFICIENCY EVALUATION IN TAIWAN COMMERCIAL BANKS

Iuan-Yuan LU[1], Wei-Wen HSIAO[2] and Da-Zheng HSIAO[3]

[1]Professor, Department of Business Management, National Sun Yat-sen University
Email: iylu@bm.nsysu.edu.tw
[2]Doctoral Student, Department of Business Management, National Sun Yat-sen University
Email: hww.hww@msa.hinet.net
[3]Associate Professor, National Kaohsiung University of Applied Sciences
Email: djhsiao@cc.kuas.edu.tw

Abstract: *This study adopt fixed assets, SG&A (selling, general and administrative expenses) and interest expenses as input factors, use the amounts of loans and revenues as output factors, and employ Data Envelopment Analysis (DEA) to evaluate the efficiency performance and relative efficiency of these commercial banks according to Farrell's efficiency evaluation theory. We group all sample banks into three categories, namely "Old Commercial Banks", "New Commercial Banks" and "Commercial Banks Upgraded from Credit Cooperatives" and evaluate the efficiency of commercial banks, including overall efficiency, overall technical efficiency, pure technical efficiency, scale efficiency, and allocation efficiency. The empirical results are showed as following. The empirical results find that the "Old Commercial Banks" possess highest efficiency value than the other two groups. Besides, the "Old Commercial Banks" also have the highest overall technical efficiency, pure technical efficiency and allocative efficiency. It implies that the "Old Commercial Banks" is doing well in competing with the new entrants, which makes them keep better efficiency values than both the "New Commercial Banks" and the "Commercial Banks Upgraded from Credit Cooperatives".*

Keywords: *Overall efficiency, overall technical efficiency, pure technical efficiency, scale efficiency, allocation efficiency*

TW27

DISCUSS THE B&B INDUSTRY ON THE EMPLOYEE VARIABILITY VERSUS CUSTOMER VARIABILITY

Ching-Chow YANG[1], Ping-Shun CHEN[1], Yu-Hui CHIEN[1, 2]

[1]Department of Industrial and Systems Engineering, Chung Yuan Christian University（CSQ）
E-mail:chinchow@cycu.edu.tw
[2]Department of Business Administration, Chihlee Institute of Technology（CSQ）
E-mail:pingshun@cycu.edu.tw
Chihlee Institute of Technology, 313 Sec. 1, Wunhua Rd., Banciao District, New Taipei City, 22050, Taiwan, (CSQ)
E-mail:yuhui@mail.chihlee.edu.tw

Abstract: *Since 1981, Taiwan's B & B Industry was just begun, then it had been extended out to all another areas, at that times, it is a simple bed with one breakfast, in which no tourism guide and no boarding equipment. The B & B Industry employer aims at the business profit, too. Additionally, hotel employees understand and meet requirements and satisfactoriness of customers, reducing the customer variability, maintains an excellence relationship between them, is the key point of this research. This research concluded below; (1) It is, the employer improves the requirement of customer service as well as enhances the rewards and punishments system, so that it achieves the management system of fancy hotel. (2) It reduces employer variability, makes less and smaller of variability of customer requirement, then customer requirement would be achieved successfully.*

Keywords: *B&B Industry, employee variability, customer variability*

TW30

AN EMPIRICAL STUDY OF THE MEASUREMENT OF ECO-COMPONENT OF SERVICE QUALITY IN TAIWAN'S INTERNATIONAL TOURIST HOTELS

Iuan-Yuan LU[1], Chih-Yun YANG[2], Cheng-Jui TSENG[3]

[1]Professor, Institute of Business Administration, National Sun Yat-Sen University
No.70, Lien-Hai Road, Kaohsiung 804, Taiwan, R.O.C
iylu@bm.nsysu.edu.tw
[2]Associate Professor, Department of Hospitality Marketing Management, National Kaohsiung Hospitality College
No.1, Sung-Ho Road, Kaohsiung 812, Taiwan, R.O.C
chihyun@mail.nkuht.edu.tw
[3]Assistance Professor, Department of Leisure and Recreation Management, Asia University
No.500, Lioufeng Road, Taichung 804, Taiwan, R.O.C
chengjui@asia.edu.tw

Abstract: *In this study, patrons to Taiwan's tourist hotels were chosen as our research object to identify their expectations and perceptions with respect to the green hotel operations, and also to understand the specific perception of patrons with respect to eco-component of green hotel service. The measurement tool was a green hotel service quality measurement scale adapted from the SERVQUAL scale first developed by Bastič and Gojčič (2012). The measurement scale incorporated 6 dimensions, including equipment, energy, behavior, food, green products, and environments. This study attempted to verify the gap between patrons' perceptions and hopes concerning the green hotel service quality. The analysis outcome will serve as reference materials for green hotels at large. This information will be good reference source for hoteliers when they try to understand the expectations from patrons, when designing and implementing specific green initiatives.*

Keywords: *eco-friendly or green hotel, green hotel service quality*

HK01

KNOWLEDGE MANAGEMENT AND SERVICE QUALITY CAPABILITIES FOR PERFORMANCE: A STUDY OF LOGISTICS SERVICE PROVIDERS IN A SUPPLY CHAIN CONTEXT

Ivy S.N. CHEN[1] and Patrick K.O. FUNG[2]

[1]Department of Management and Marketing, The Hong Kong Polytechnic University, HONG KONG
E-mail: msichen@polyu.edu.hk
[2]Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University, HONG KONG
E-mail: lgtpfung@polyu.edu.hk

Abstract: *Logistics service providers (LSPs) enhance the value of goods and services flowing across organisations. With increasing trend on logistics outsourcing from multinational firms worldwide, LSPs develop their business by filling in operational and functional gaps in global supply chains. Their competitive performance depends on their supply chain oriented mind-set as well as organisational capabilities skill-set. These are embedded in organisational learning and knowledge management. This paper proposes a research model as well as the measures for the investigation of the relationships among learning, capabilities and supply chain orientation variables. Findings from selected case studies reveal the more complex and interactive relationships among the variables. While the result is inconclusive, it is safe to suggest that firms must build processes and systems that enhance organisational learning culture and knowledge management practices. Future research aims at a quantitative analysis of the causal relationships of the model.*

Keywords: *Knowledge management, organisational capabilities, logistics service quality performance, supply chain orientation*

HK02

MODELLING DAILY PATIENT ARRIVALS AT EMERGENCY DEPARTMENT

Mai XU[1], Tse-Chiu WONG[2], and Kwai-Sang CHIN[3]

Department of Systems Engineering and Engineering Management, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, HONG KONG
[1]E-mail: maixu2@student.cityu.edu.hk,
[2]E-mail: tcwong@cityu.edu.hk,
[3]E-mail: mekschin@cityu.edu.hk

Abstract: *To efficiently allocation the resources and hence enhance the service quality in an emergency department (ED) in Hong Kong, we modeled daily patient arrivals using artificial neural networks (ANNs) and compared the results with multiple linear regression (MLR). We analysed daily patient arrivals for Category 4 patients based on a one-year patient attendance data from a local ED, and climatic data acquired from Hong Kong Observatory. We adopted a two-stage method in this study. First, we identified the input variables directly related to patient arrivals, and second we trained ANNs using the selected input variables and validated through a 10-fold cross-validation. We measured the modelling accuracy of ANNs by mean average percentage error (MAPE) and compared it with that in MLR. The results of this study can guide ED resource allocation so that ED staff will be more prepared for predictable arrival variations.*

Keywords: *Patient arrival, emergency department, artificial neural network*

HK03

RINCIPALS' PERCEPTION OF QUALITY AND ACCOUNTABILITY: A CASE STUDY OF LASALLIAN SCHOOLS

Peter P.K. KWOK

Beijing Normal University, International Business Faculty, Zhuhai Campus, 18 Jinfeng Road, Tangjia Wan, Zhuhai City, CHINA; E-mail: piere9004@hotmail.com

***Abstract**: The main aim of the research is to investigate how the principals of Lasallian schools in Hong Kong perceive education quality and accountability and how their conceptions are shaped by the unique Lasallian context and their relationship to different stakeholders to whom they are accountable. The research is based on the interpretive paradigm and the combined use of ethnography and phenomenological methodologies, a case study approach and purposeful sampling. Inductive methods are used to analyse data collected through one semi-structured interview with each of the ten principals supported by documentary evidence. Findings from the investigation suggest that a consensus view of education quality which would appeal to all stakeholders would include: maintaining Lasallian values; providing a diversity of curriculum provision and holistic education; enabling all students to achieve a level of academic attainment linked to their ability; achieving a shift from a teacher to a student centred approach, including helping students to 'learn how to learn'. These outcomes could be achieved by the use of a range of strategies in all schools; distributive leadership with increased empowerment of teachers; promoting a culture of continuous improvement through development planning, self evaluation and continuing professional development, and parent-school partnerships.*

***Keywords**: Education quality focus, school context, model for managing quality, strategies for achieving quality, role of principal*

HK04

A STUDY OF THE IMPACT OF CULTURAL FACTOR ON SIX SIGMA IMPLEMENTATION

Chi Kuen Ivan NG

City University of Hong Kong, Tat Chee Avenue, Kowloon, HONG KONG
E-mail: ivanng@capstone.com.hk

***Abstract:** This is an organisation development study which takes the change process theory to examine the impact of cultural factor on Six Sigma implementation. The cultural factor refers to Chinese culture and Chinese organisational culture of the problem. Only in the last decade researchers have explored into studies of the "soft" factor of culture. Academicians and practitioners from Hong Kong and Shanghai were invited to multiple individual interviews. The interviews were all taped and transcribed for analysis and review. This study will add knowledge to academic research. It will also give relevant and real world reference to practitioners and industrialists of the position of Six Sigma as they design or consider strategic and implementation plan. The result will be served as a torch light to the present researcher running Six Sigma training and giving consultation.*

***Keywords**: Organisational Development, Six Sigma, Culture, Planned Change, Implementation*

HK05

PATIENT SAFETY SYSTEMS BETWEEN JAPAN AND HONG KONG

Zoie Shui-Yee WONG[1, 2] and Masanori AKIYAMA[1]

[1]Todai Policy Alternatives Research Institute (PARI), The University of Tokyo, JAPAN
[2]Centre for System Informatics Engineering (CSIE), Department of Systems Engineering and Engineering Management, City University of Hong Kong, HONG KONG; E-mail: zoiewong@pp.u-tokyo.ac.jp

Abstract: *Patient safety has been regarded as a global healthcare issue. This study reviews the medical incident reporting and handling mechanisms of Japan and Hong Kong, as well as some global systems and provides research insights to achieve good practices of patient safety system. Health system, enforcement regulations, adverse events handling policy, reporting mechanisms for incidents between Japan and Hong Kong are discussed. Then, we highlight other patient safety systems and the lesson learnt from other industry in the world. Research directions along with commitment to patient safety initiatives, a robust error reporting system and interdisciplinary research efforts are given at last. It is envisioned that the patient safety system experiences in Japan and Hong Kong as well as other world-class systems are valuable for providing good practices to patient safety systems and achieving quality healthcare.*

Keywords: *Healthcare Quality Excellence, Patient Safety Systems, Medical Incident Reporting System, International Classification for Patient Safety (ICPS)*

HK06

RAILWAY SERVICE DELIVERY WITH INTEGRATED MANAGEMENT SYSTEM

Joseph To-Cheung NG

MTR Corporation Limited, Fo Tan Railway House, Shatin, NT, HONG KONG
E-mail: TCNG@mtr.com.hk

Abstract: *MTR Corporation is a major public transport operator in Hong Kong. The Corporation has been providing world-class railway service to the people of Hong Kong and visitors to Hong Kong for 33 years. Various management systems including safety, quality, environmental and asset management systems have been established to support the achievement of the Corporate Vision, Mission and business objectives, and to facilitate control and consistency of service delivery. However, if all these management systems are implemented in an isolated manner, it might lead to duplication of efforts and conflicting objectives, responsibilities and relationships. To help achieve the objective of delivering a world-class railway service effectively and efficiently, MTR Corporation has adopted an Integrated Management System (IMS) which integrates the four management systems to help manage its railway operations. This helps to minimise duplication, reduce operating costs, reconcile conflicting objectives and optimise practices. This paper gives an account of the background to IMS development in MTR Corporation and outlines the constituent elements of the IMS model that are key to railway service delivery. It concludes with the major benefits IMS implementation has brought to MTR Corporation and the key success factors for IMS implementation.*

Keywords: *Asset Management, Environmental Management, Quality Management, Safety Management, Integrated Management*

HK07

THE EFFECTS OF TEAMWORK QUALITY, TEAM GOALS AND PERSONALITY ON PROJECT SUCCESS: AN EMPIRICAL STUDY

Shing-Chung NGAN[1], Yung-Sin CHENG[2], Hon K. YAU[3], T.C. WONG[4]

Department of Systems Engineering and Engineering Management, City University of Hong Kong
Kowloon, HONG KONG
[1]E-mail: scngan@cityu.edu.hk
[2]E-mail: yscheng7@cityu.edu.hk
[3]E-mail: honkyau@cityu.edu.hk
[4]E-mail: tcwong@cityu.edu.hk

Abstract: *Team-based learning has been increasingly employed in engineering education today. A common way to introduce team-based learning in a class setting is to have students forming groups and working together on a term project. In order to optimise the students' education processes and quality, an extremely relevant question to ask is: What makes a project successful? Answers to this question will lead to an enhanced understanding on what the essential factors in driving high-quality team projects are. In the article, we investigate this question through the lens of teamwork quality, team goals and personality of the team members. Some highlights of our findings are that a personality dimension Extraversion is significantly and positively correlated with Cooperative Goals, a type of a team member's goal orientations. Possessing Cooperative Goals is in turn significantly and positively correlated with having high team internal interaction quality. Finally, all facets of team internal interaction quality are significantly and positively correlated with Project Success. Important implications of these findings on team member selection and project design will be discussed.*

Keywords: *Teamwork quality, group project, personality, team goals*

HK08

INCREASE RISER INSPECTION RATE OF TARGET BUILDINGS

Chan Wah Kuen, Yeung Pui Ching, Tang Chi Ho, Kenny, Chan Ping Man, Tam Wai Chu, and Yee Kai Hung

Abstract: *Service risers are gas pipes supplying Town Gas to our residential customers and commercial & industrial (C&I) customers. For the residential case, the whole service riser system (Fig. 1) usually consists of a main riser erected outside the building which can reach all storeys, together with branch off horizontal risers in smaller diameter which feed Town Gas to the flats of individual customers; whereas for the C&I case, customers tend to have their dedicated riser for their own.*

A service riser inspection robot (robot), which can climb from ground floor to the roof at external wall, was developed in 2009 to improve the inspection rate of service risers. 100 buildings were targeted to be inspected by the robot in 2010; however, only 40 of them were done. In average, 5 working days (5 men) were needed to complete the inspection for one target building. By redesigning the robot as a wall mounted lifting system with double wiring system, the robot size could be dramatically decreased. Transportation time, assembly time and operation time are shortened. Ultimately the number of target buildings successfully inspected has been increased.

Keywords: *Riser Inspection, robot*

HK09

EVALUATION OF THE PRACTICE OF QUALITY ASSURANCE IN GREATER CHINA CONSTRUCTION IUDUSTRY

Ir Prof Dr Hon PHILIP CHAN H.E. Postdoc (Tianjin University)
Postdoctoral Fellowship, University of Quebec at Montreal UQAM
Philip.chan@lifelong.edu.hk
Prof Dr Prosper Bernard & Prof. Dr. Michel Plaisent & Dr. James Ming-Hsun Chiang
Postdoc Supervisors, UQAM

Abstract: *It is always difficult to decide on an exact definition of 'quality' and this is particularly true of the construction industry. However, it is important to establish some form of consensus on quality criteria for elevator industry. This paper makes a contribution to this field by through a survey which was conducted in Hong Kong and China to study how practitioners have implemented the concept of quality assurance in construction projects. The results suggest that there is a need for extensive training in order that a total quality approach is adopted.*

Keywords: *Total Quality, Quality Assurance, Quality System and Survey Results*

HK10

CULTIVATING A STAFF ENGAGEMENT CULTURE BY WORK IMPROVEMENT TEAM (WIT) "YOU HAVE A SAY" PROGRAMME

Weller Kwok-Wai CHAN[1] and Charles Long-Chau HO[2]

[1]Training, Promotion & External Affairs Sub-Committee Chairman, WIT Council and Power Distribution Implementation Manager, MTR Corporation Limited
MTR Headquarters Building, Telford Plaza, Kowloon Bay, Hong Kong
WELLER@mtr.com.hk
[2]WIT Council Secretary and Manager – Quality & Staff Wellness Training, MTR Corporation Limited
MTR Headquarters Building, Telford Plaza, Kowloon Bay, Hong Kong
HCHARLES@mtr.com.hk

Abstract: *The MTR Corporation in Hong Kong has been providing world-class railway service to passengers since its establishment in 1975. Through its growth in the past 36 years, the Corporation has been facing a number of unprecedented challenges. One of those would be the merger of MTR and KCR operations in 2007. The two companies had different cultures and value as well as a different work improvement culture.*

In order to align their work improvement culture, MTR Corporation revamped the Work Improvement Team (WIT) Scheme and developed the "You Have a Say" Training Scheme to enable staff to improve daily work processes. The slogan "You Have a Say in What You Do Everyday!" demonstrated the new MTR Value of "Enterprising Spirit".

This study aims to show how a structured learning and development scheme creates a sustainable impact in fostering a drive for quality and engaging staff to upkeep a "can-do" value at work.

Keywords: *Organizational Culture, Quality, Value, Staff Ownership, Work Improvement*

HK11

MEASUREMENT AND VERIFICATION OF ENERGY PERFORMANCE

Ir Dr William Sin-tong Lau

Energy & Carbon Services Department
SGS-CSTC Standards Technical Services Limited
william.lau@sgs.com

Abstract: *China is planning to cap energy use. National energy reduction initiatives and ISO 50001:2011 implementations require energy saving. Energy saving means also cost saving also. Energy saving and performance is however energy that is "not" used. Due to changes in conditions, "before minus after" may not be the correct representation of the saving. M&V is a special technique developed to handle and justify this saving. This technique is not new, but understanding and uses remain very restricted constraining development of energy performance contracts and services. It is not uncommon that both the client and the service provider would think that M&V is an extra cost. This paper is to explore the M&V methodology developed by EVO in their latest IPMVP version, EVO 10000-1:2012, and explain with example why such third party arbitration is needed.*

Keywords: *ECM, M&V, ISO 50001:2011, ESCO, energy audit, IPMVP, EVO 10000-1:2012*

HK13

IMPLEMENTATION OF PROCESS STANDARDIZATION IN MULTINATIONAL ENTERPRISE

Kwok Ming YEUNG[1] and Kwai Sang CHIN[2]

[1]Engineering Doctorate, Department of System Engineering and Engineering Management,
City University of Hong Kong, Kowloon Tong, Hong Kong
E-mail: joe.yeung@nyprochina.com
Program leader for the Total Quality Engineering program,
[2]City University of Hong Kong, Kowloon Tong, Hong Kong
E-mail: mekschin@cityu.edu.hk

Abstract: *As firms increase their scopes of international operations, an attempt to capitalize on economies associated with standardization is a natural way. Due to manufacturing necessity, industry agreement or national or international policy, the need to operate according to standards is essential to organizations in a wide array of industries. Therefore, implementation of standardization is worth for company development and growth.*

In order to increase company competitiveness and maintain the leading position, implementation of industrial standardization is necessary. It can reduce maintenance cost and inventory of spare parts. Moreover, it can facilitate training of technicians and cross-plant support. Therefore, a standardization model is created to support the implementation. On the other hand, a standardization framework is designed to execute standardization across different operation plants in different six sigma stage: Define, Measure, Analyze, Improve/Implement and Control. The developed standard will be reviewed and revised regularly in order to achieve continuous improvement.

Keywords: *Process Standardization, Multinational Enterprises, Six Sigma, Industrial Standard*

HK14

PERCEPTUAL INFLUENCE OF PROBLEM SOLVING APPROACH TO THE STUDENT LEARNING FROM MISTAKES

H.K. Yau[1], T.C. Wong[2], S.C. Ngan[3]

[1]City University of Hong Kong, Kowloon Tong, Kowloon, Hong Kong, email: honkyau@cityu.edu.hk
[2]City University of Hong Kong, Kowloon Tong, Kowloon, Hong Kong, email: tcwong@cityu.edu.hk
[3]City University of Hong Kong, Kowloon Tong, Kowloon, Hong Kong, email: scngan@cityu.edu.hk

Abstract: *Teamwork has become more and more important and essential in the society. In fact, many organizations use team as an autonomous working unit, and it is a must for members to cooperate with each other to get the work done. Moreover, teamwork skill is also important for the University students in order to better prepare themselves for the highly competitive working environment. In addition, previous studies have shown that problem solving is one of the approaches to enhance the open discussion among group members of their mistakes. The purpose of this paper, thus, is to examine the students' perception of the problem solving approach to promote student learning from mistakes under a cooperative environment. A survey methodology was employed in this study and totally 167 questionnaires were collected from Universities in Hong Kong. The students perceived that the problem solving approach is significantly positive associated with the student learning from mistakes.*

Keywords: *Hong Kong, Problem solving approach, Learning from mistakes*

HK15

DATA QUALITY ISSUES IN DECISION ANALYSIS

Albert H.C. Tsang[1] and S.L. Ting[2]

Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

[1]Email: albert.tsang@polyu.edu.hk
[2]Email: jacky.ting@connect.polyu.hk

Abstract: *Data is an essential input that supports performance tracking and evidence-based decision making. The preparatory effort made in the data collection process has significant impact on the quality and worth of the collected data. In this paper, currently available data quality models are reviewed and synthesized to serve the needs of evidence-based decision making. The synthesized model determines the attributes, and hence the approach and indicators, to be used for tracking data quality. Two sets of industrial data – one set relates to failures of stepper motors that activate platform screen doors (PSD) at station platforms of a metro railway system, and the other set consists of medical records maintained by a medical services organization – are analyzed to identify common types of data quality problems and their plausible root causes. Two frameworks to address issues arising from these data quality problems are then proposed.*

Keywords*: Data quality, Decision making, Data Collection*

HK16

COLLECTIONG CUSTOMERS' DOCUMENTS THROUGH WEB PORTAL

Tang Pik Chun Doris, Lam Wing Hong Alex, Sze Lily
Low Wei Yuen Felicia, Wong Yuen Sze Karrie, Lai Ka Ching Terence

[1]The Hong Kong And China Gas Company Limited
18/F CT Office, 363 Java Road, North Point, noel.lau@towngas.com

***Abstract**: The Gas Account Registrants are required to provide us with their HKID copies and Sales & Purchase or Tenancy Agreement of the relevant premises when opening gas accounts. One of our duties is to protect the customers' personal data and ensure the account information kept by the company is correct. Most of the customers had sent the documents by the fax while many were not clear or unreadable.*

Finally, QC Team "CSH Angels" decided to work with Cooperate Information Technology Department (C.I.T.D) to enhance the functionality of an existing web portal named Virtual Customer Centre system (VCC). It allows sending email to customers and receiving reply and together with uploading of documents from customers through VCC to solve the problem. Time was saved and productivity of the colleagues was raised. This, if calculated in money terms, helped the company saving an amount of HK$163,000 per year.

HK17

SELF-DEVELOPED COUPLER/CHAIN-ASSISTED CUTTING MACHINE FOR THE ANQ CONGRESS 2012 HONG KONG

Chan Yee, Wong Wai Kit, Lau Chi Hong, Chan Chi Wai, Ho Chuen Cheong,
Chow Kai Ming, Kwok Kee Pao

The Hong Kong and China Gas Company Limited, 18th Floor, 363 Java Road, North Point, Hong Kong
E-mail: noel.lau@towngas.com

***Abstract:** "Rising Sun" is a SQS Team (i.e. quality improvement team) of the Technical Training Centre of the Hong Kong & China Gas Co. Ltd. In this project, the team self-developed a pipe cutting tool to assist the training operation.*

Using traditional tools like handsaw, reciprocating or powered handheld circular saw to cut PE pipe usually produce rough cutting surface which is unacceptable. "Rising Sun" explored the possible ways of improvement by brainstorming and the other SQS analytical tools such as fish bone diagram and priority grid. The factors that would affect the cutting surface integrity were: (i) saw blade with inappropriate teeth, (ii) no guiding fixture equipped for the saw, (iii) unstable cutting feed speed. Taking the factors into consideration, the team members successfully fabricated a powered circular disc saw mounting on a PE coupler fitting to replace the handheld cutting tool to produce perfect pipe cutting edge.

***Keywords:** PE pipe, Circular Saw, Coupler, Roller Chain Support, Rotary pipe standard*

HK18

NEW DESIGN OF COLLAR ELECTRODE

Cheung Pak Kin, Terry Hui, Tam Kin Wah, Stephen Lee, Chong Yau Chun, Kwok Ngan Hung, G. Chu Kwok Key, Tam Ying Hung, Siu Chi Keung, Yuen Wing Hei, Monkey Law

The Hong Kong And China Gas Company Limited
18/F CT Office, 363 Java Road, North Point, noel.lau@towngas.com

Abstract: *In year 2010, there were around 212,242 on demand maintenance orders (30% of total maintenance orders) related to ignition problem from hotplates and water heaters respectively. Out of the total, 128,100 maintenance orders are related to hotplates and 84,142 related to water heaters.*

Further data analysis on the ignition problem of hotplates, the Ignitor team found there were 29,181 maintenance orders of ignition problem related to the Rinnai type products and out of the total, 19,263 maintenance orders (66% of total) are related to push button type of hotplates(Fig.1b).

Since the ignition problem is one of the most major factors that would create high on demand maintenance orders from users especially on the high humidity seasons, the Ignitor team therefore determined to carry out further study in order to find out the root cause and possible solutions to eliminate the ignition problem.

Keywords: *Electrode, Gas Appliance*

HK20

QFD FOR TQM IMPLEMENTATION

Catherine Y. P. Chan

Hong Kong Quality Function Deployment Association, Hong Kong
E-mail: catherine@qfdhk.org

Abstract: *QFD adds structure to the major elements TQM. It is a disciplined approach for the implementation of TQM. The aim of the paper is to explain the logical organization of the important TQM elements made by QFD for assisting enterprises on achieving quality. When QFD has become a practice, the company, to a very great extent, is implementing TQM.*

Keywords: *Quality function deployment, QFD, total quality management, TQM implementation*

HK21

THE LEARNING ORGANISATION JOURNEY IN MTR

David Raymond Chuen-choi LEUNG[1] and Philip Wai-ming WONG[2]

[1]Chief of Operations Engineering, MTR Corporation Limited
MTR Headquarters Building, Telford Plaza, Kowloon Bay, Hong Kong
Email: LDAVID@mtr.com.hk
[2]Deputy General Manager – Train Services and Asset Engineering, MTR Corporation Limited
MTR Headquarters Building, Telford Plaza, Kowloon Bay, Hong Kong
Email: PWMWONG@mtr.com.hk

Abstract: *The MTR Corporation in Hong Kong has been providing world-class railway service to passengers since its establishment in 1975. Nevertheless, the Corporation will be facing a number of unprecedented challenges in the coming years which include network expansion, new business overseas, large-scale asset replacement, more demanding customer service requirements, and generation change in the workforce.*

In order to sustain MTR's competitiveness and achieve the objective of providing even better services, MTR Corporation embarked on a Learning Organisation journey with the aim of significantly enhancing the capability of its staff and the organisation as a whole.

This paper discusses the approach and the various initiatives and changes brought about. It also talks about the success factors and difficulties encountered.

Keywords: *Learning Organisation, Knowledge Management, Innovation, People, Sharing*

HK22

THE IMPACT OF BLAMING ON THE EFFECTIVENESS OF ERROR-BASED LEARNING IN HONG KONG HIGHER EDUCATION

T.C. Wong*, H. K. Yau, and S.C. Ngan

Department of Systems Engineering and Engineering Management, City University of Hong Kong
*E-mail: tcwong@cityu.edu.hk

Abstract: *Nowadays, university students are having more opportunities to participate in group projects or work toward common goals. However, team members always blame each other once there is something wrong with the progress or outcomes. The purpose of this paper, thus, is to examine the impact of blaming on the effectiveness of error-based learning under a cooperative environment. In this study, a survey methodology was employed and the majority perceived that the blaming is negatively associated with the outcome of the error-based learning. It implies that team performance can be improved if a positive attitude can be cultivated and sustained even in the presence of errors/mistakes. The same argument can be made for people at work. Therefore, local universities should offer more group tasks/assignments such that students always need to complete the job with collective rather than individual effort. In addition, teachers should encourage and provide resources in support of team activities both inside and outside the classroom.*

Keywords: *Teamwork, blaming approach, error-based learning, student perception*

HK23

QUALITY OF DRINKING WATER IN HKSAR, CHINA

CHEUNG Yun Hing Richard

Department of Biology and Chemistry, City University of Hong Kong
Tat Chee Avenue, Kowloon, Hong Kong
Email: bhricche@cityu.edu.hk

Abstract: *Seven million people in Hong Kong consumes nearly 1000 million cubic meters of fresh water per year which is come from the Dongjian River and thus the water quality is always concerned by Hong Kong people. In order to have better investigation on the water quality of Hong Kong, understanding the water quality of the source, Donjian River is also important, so the Donshen Water Supply Scheme is introduced as the first part. After that the second part consists of the statistical information of drinking water quality monitoring scheme in both Dongshen and Hong Kong Drinking Water. Moreover, the international water monitoring guideline is also discussed in this review to give overall conclusion on the drinking water quality in Hong Kong.*

Keywords: *Drinking, Water, Quality*

HK24

CARBON ACCOUNTING HARMONIZATION TO REFLECT CLIMATE IMPACTS

Ir CHAN Pang[1] and Ir Dr William Sin-tong Lau[2]

[1]Energy & Carbon Services Department, SGS Hong Kong Limited, Rm902, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T Hong Kong
Email: pang.chan@sgs.com
[2]Energy & Carbon Services Department, SGS-CSTC Standards Technical Services Limited, 3rd Building, No. 889, Yishan Road, Xuhui District, Shanghai, China
Email: william.lau@sgs.com

Abstract: *Carbon accounting is an important step to combat climate change. Apart from national reporting which is a national account on "generation-basis", and emission reduction credit certification which are regulated to avoid over-estimations, carbon accounting in general, is to reflect the climate impacts of the reporting entity, whether it is an organization, a product, an event or an individual. However, while major accounting standards are clamming to the "true and fair" foundation, such standards allowed the reporting entity to partial reporting, that is disclosure of just scope 2 (direct) and scope 2 (energy indirect) emissions, and for scope 3 (other indirect) emissions, the reporting is conditional. This paper is to discuss the existing greenhouse gas standards and challenges carbon accounting is facing and calling for one harmonized standard to ensure the implementation of "true and fair" foundation, and recommendation to include as well the "clear and unambiguous" foundation to report the basis of the disclosure.*

Keywords: *Carbon accounting, carbon audit, ISO 14064, CDM and emission trading*

HK25

ELECTRED LEADER CAPABILITY BASED ON EIGHT QUALITY MANAGEMENT PRINCIPLES: HONG KONG CASE IN 2012

Lotto, Kim Hung LAI

Hong Kong Science and Technology Parks Corporation
Unit 711, 7/F, Bio-Informatics Centre, No.2, Science Park West Avenue
Hong Kong Science Park, Shatin, N.T., Hong Kong
Email: lotto.lai@hkstp.org

Abstract: *In 2012, many elections in different countries and cities will be performed including United States Presidential Election, Election of the 18th National Congress of the Communist Party of China, Chinese Taipei Presidential Election and HKSAR Chief Executive Election, etc. Election is an element of Social Science which is a study of the relationship between people and society. This article intends to use Eight Quality Management Principles (ISO 9000) as evaluation criteria to identify the capability of elected leaders (said President or Chief Executive) in the countries/cities. Most of people evaluated their leader based on their perception and gave their votes accordingly during an election. In this study on HKSAR CE Election, quality professionals were asked to rank their wanted election candidates, using seven-point Likert scale, based on Eight Quality Management Principles as criteria by which the capability to service the country/citizen/society could be interpreted.*

The design of this survey and statistical analysis will be explained. Finally, the small scale survey results which were used to evaluate the capability of the four announced HKSAR Chief Executive Candidates will be discussed and will be compared with the actual result of the HKSAR Chief Executive election on 25 March 2012.

Keywords: *Quality Management Principles, Elected Leader Capability, Survey and Statistical Analysis*

IND02

SCIENCE OF QUALITY EDUCATION FOR SOCIAL EXCELLENCE

Dr K Nithyanandan

International Academy for Social Excellence, HR training and Empowerment organization, Bangalore, India
www.cseonline.org, www.iasehrd.in

Abstract: *Quality is the soul of the Universe. The science of quality, its development, empowerment and its application processes keeping in view of social benevolence aspects etc are the significant factors of education. This quality aspects of education has not been realized in its scientific perspective so far and hence many of the social crisis. This paper focuses on the scientific concepts of quality education and presents systematically those concepts for one to rectify the errors of present system in an appropriate manner. Understanding the philosophy, chemistry and physics of self is an academic activity as science of the Universe and integration and cognition between philosophical and physical elements is an industrious activity as art of the Universe both the science and the art together forms as mission of education. The paper also suggests models for integration of socio-political systems in synchronization with the Universal principles of excellence for promoting peace and prosperity in the society.*

Keywords: *Soul of the Universe, science of quality, quality aspects of education, academic activity as science, industrious activity as art.*

IND05

CASE STUDY-TO REDUCE THE REJECTION (DENT,CRACK & BLACK DOT) IN INJECTION MOULDING PROCESS USING SIX SIGMA-DMAIC METHODOLGY

Dr. K.Kumar[1], R.B.Madhekar[2] and Amit Chauhan[3]

[1]Maruti Center for Excellence (MACE), Gurgaon, India
Email: Krishan.Kumar@maruti.co.in
[2]Maruti Center for Excellence(MACE), Gurgaon, India
Email : R.B.Madhekar@maruti.co.in
[3]Maruti Center for Excellence (MACE), Gurgaon, India
Email: mace_amitkumar.chauhan@maruti.co.in

Abstract: *With the ever increasing demand of the customer in a highly competitive environment quality perfection is a desirable objective. The purpose of this paper is to bring the focus on Problem solving Techniques using Lean 6σ DMAIC methodology & to change the mind set of peoples within organization that Root cause cannot be established just by thinking and engineering guesses. Six Sigma DMAIC methodology helps to pin point root causes using simple data collection and analysis technique. This case study will explain the application of various graphical and statistical tools of problem solving in real life like Pareto, Box plot, Main effect plot & Interval plot, 2P test, ANOM, & regression. The study was conducted at M/s Autodecor an injection moulded parts manufacturer. The major pain area was high rejection in Moulding shop i.e 34078 PPM against the target of 28000PPM in FY 2009-10. With the help of Scoping tools like Tree diagram, Pareto & Pie Chart, Product Crystal YV4 (Ritz model of MSIL) an acrylic clear part was found the major contributor & Characteristics identified for analysis Dent, Crack and Black Dot. This rejection was being reported since inception. As a result the overall rejection reduced by 65%.*

Keywords: *Automotive Industry Case study on Quality improvement, Manufacturing Process-Plastic Injection Moulding, Customer Satisfaction, Major management Pain Area and Application of Various Statistical tools*

IND06

AVOID "WAITING ON IRON" & ENHANCE INTERNAL CUSTOMER SATISFACTION BY REDUCING OFF-CHEMISTRY REJECTIONS AT BLAST FURNACES

Striving for Excellence through Process Stabilization and Buffer Management

Mr. Sandeepan Mukherjee[1], Mr. S K Roy[2], Mr. Debashis Das[3], Mr. P R Anil Kr[4]

Tata Steel Limited, Jamshedpur – 831001, India;
[1]Email: sandeepan.mukherjee@tatasteel.com, [2]Email: s.k.roy@tatasteel.com,
[3]Email:debashis.das@tatasteel.com, [4]Email: pranilkr@tatasteel.com

Abstract: *Blast Furnaces convert heterogeneous raw materials such as Coke, Iron ore and Sinter into Hot Metal (molten liquid iron). Hot Metal (HM) is further processed at LD Shops (Internal Customer for Blast Furnaces) to remove impurities and make steel. Maintaining HM quality (% silicon, % sulphur & % phosphorous) within the range desired by LD Shops & consistent supply of HM is imperative for Blast Furnaces.*

Variability in daily production of HM due to unstable operation leads to a gap between demands at LD shops vs. supply of HM from Blast Furnaces. This also have an adverse effect on HM Quality resulting non compliance to chemistry requirements (off chemistry) as desired by the internal customers. Off chemistry HM is unacceptable as this increases both, the cost and processing time at LD Shops. Stable operation of Blast Furnaces is desirable for consistent production of HM with Quality as per requirement of LD shops.

Waiting for iron at LD Shops due to non availability of HM is an opportunity loss & leads to irrecoverable loss of steel production and thereby loss to the entire value chain. This opportunity loss is measured by a KPI called "Waiting on Iron" (WOI) by steel melting shops.

Keywords: *Blast Furnace, LD (Linz Donawitz) Shops, Hot Metal, Waiting on Iron, Torpedo Ladles*

IND08

PREVENTIVE CONTROL OF SURFACE ROUGHNESS AT COLD ROLLING MILL, TATA STEEL

Manish Ambastha[1], U S Patnaik[2], Kaushik Basu[3]

[1]Cold Rolling Mill, Odisha Project, Tata Steel, India, Email: ambastha@tatasteel.com
[2]Cold Rolling Mill, Tata Steel, India, Email: usp@tatasteel.com
[3]TQM Dept., Tata Steel, India, Email: kaushik.basu@tatasteel.com

Abstract: *Surface quality is an important parameter for supply of coils to automotive segment. Out of the various surface aspects which are required by automotive customers,* ***Surface Roughness*** *is one of the most important needs, both for End Customers as well as Internal Customers (Next Process). For next process, if the roughness is very low, it results in defect called* ***'Sticker'****, because of which coil is rejected thus increasing total internal rejection.*

Since this was a very important parameter, it was necessary for the Cold Rolling Mill to work on controlling strip surface roughness and improve process performance at customer's place. But, there was a gap in existing operation standard because of the following reasons:

- *Strip Roughness was measured at TCM exit with a defined frequency, so only detection control was possible.*
- *All coils were not inspected at TCM exit, so Ra of many coils remained unknown.*

There was thus a need to devise system so that roughness could be known before the coil was produced and thus preventive control could be exercised in case of non-compliance.

Keywords**:** *Surface Roughness in CRCA coils, Linear Regression, Proactive Control, DM in Adjusted Process*

IND10

A FRAMEWORK FOR CROSS-FUNCTIONAL PROJECT IMPLEMENTATION CASE STUDY OF INDIAN TAX ADMINISTRATION

Nilimesh Baruah

Income Tax Department, India
nilimesh@yahoo.com

Abstract: *There is a strong movement towards improving quality of governance in Government of India and many ideas have been mooted to achieve this objective. Implementation of* ***"Sevottam":*** *A new Quality Management Framework for achieving excellence in public service delivery is one such initiative.* ***"Results Framework Document (RFD)****, another mechanism, aims at achieving* ***"Outcome Orientation"*** *in government, by making the top management accountable for results. Striving for excellence in service quality has assumed strategic importance for Income Tax Department in India and it has adopted both Sevottam & RFD. Using the theoretical apparatus of Actor Network Theory, the dynamics of building stable networks of aligned interests have been critically analyzed. It is concluded that through deployment of appropriate strategies, it has been possible to align the interests of diverse actors to achieve significant 'short-term wins'. However, for a 'lasting change', a far stronger and irreversible alignment needs to be forged. The analysis has implications for administrators, systems developers and researchers.*

Keywords: *Collaboration across Silos, Actor Network Theory, Outcome Orientation, Results Framework Document and Aayakar Seva Kendra.*

IND23

APPLICATION OF HUMAN ERROR PREVENTION

[1]Rohit Pathak, [2]Rajinder Singh, and [3]Milind Deshpande

[1]Mahindra Institute of Quality, Nashik, India pathak.rohit@mahindra.com
[2]Mahindra Institute of Quality, Nashik, India Singh.rajinder@mahindra.com
[3]Mahindra and Mahindra Auto Sector Nashik deshpande.milind2@mahindra.com

Abstract: *The purpose of this paper is to provide an answer to a very common problem of discrepancies in Quality of Products due to Human Errors in operations. Many of the corrective action reports indicate that cause of the problem is human error and action taken is operator training. Saying operator mistake/error is not good enough to take corrective actions. Controlling human errors needs an approach which is beyond SOPs. This approach calls for identifying situations for: 1. Elimination of work susceptible to human error. 2. Replacement of Human operation with reliable machines 3. Facilitation to make operations easier for workers 4. Detection of abnormalities causes by human errors 5. Mitigation of effects of errors. It was found that applying the five principles of Human error prevention in a customized fashion, followed by extensive training brings results in terms of defect reduction due to Human errors for the respective Industry.*

Keywords: *Human Error Prevention in automobile Industry, Error Proofing Principles, Three steps for error proofing, Error Prevention, Human Error Control*

IND24

TRIZ FOR ZERO DEFECTS BY MAHINDRA INSTITUTE OF QUALITY INDIA

Narayan S S, Rajinder Singh, Abijit Chakravarty, and Prakash Apte

Mahindra Institute of Quality India s.narayan@mahindra.com
Mahindra Institute of Quality India singh.rajinder@mahindra.com
Mahindra Hinoday Industries Ltd. India (Magnetic Product Division) achakravarty@hinodaynet.com
IIT Mumbai apte@ee.iitb.ac.in

Abstract: *This project deals with application of TRIZ to reduce in-process rejection during magnet manufacturing from 8% to 0 defect level. All conventional problem solving tools were used to solve the problem, but were not providing the desired results. This problem had contradiction in-built in it and also required a different platform of thinking. Hence, the project was taken as a case study for TRIZ application. Changing the shape/geometry/design or strength of the component was out of manufacturing's purview as customer approvals for such design aspects takes a very long period of time and in many cases the customer is not willing to approve any change in the product characteristics. This led to a contradiction namely no chipping to be achieved without making any design changes. TRIZ is a tool which is best suited for problems with contradictions.*

Keywords: *Ideal final result, Contradictions (physical and technical), S-F analysis, Function analysis.*

IND25

DESIGN FOR SIX SIGMA (DFSS) METHODOLOGY IN PRODUCT / PROCESS / SERVICE DESIGN AND DEVELOPMENT

Sharath Chandra Peddi[1], Anil Sachdev[2] and Rajinder Singh[3]

[1]Mahindra Institute of Quality, Nashik, India, peddi.sharathchandra@mahindra.com
[2]TQMI, New Delhi, India, anil@tqmi.com
[3]Mahindra Institute of Quality, Nashik, India, singh.rajinder@mahindra.com

Abstract: *This paper is to share the experience of how successfully projects in the field of new product development and enhancement of current products were completed by using DFSS methodology. Mahindra Institute of Quality was running the DFSS program for the last 4 years, post program support and guidance resulted in completing many highly successful projects.*

Keywords: *DFSS Methodology, Advance Quality Management tools and techniques, Quality Function deployment, Innovation Technique*

IND26

BIO MEDICAL WASTE MANAGEMENT IN GOVERNMENT HOSPITALS

S. Fareed Uddin

Independent Consultant - Total Quality Management - Health Care
National Faculty for BIS for Hospital Waste Management Training
E Mail - sfareed@jicamprhp.org

Abstract: *Bio-Medical Waste is the waste generated in the Hospitals during the prevention, treatment, diagnosis and investigation of human beings and animals. Its improper management can lead to spread of diseases such as Cancer, Hepatitis B/C, TB etc. and have adverse Public Health effects, if not properly managed.*
The Ministry of Environment & Forest, Government of India has framed a well defined set of rules for Management and Handling of BMW since 1998. Central and State Pollution Control Boards appointed as implementation and enforcement agencies.

Bio Management Waste (BMW) Management especially in government hospitals in state of Madhya Pradesh has been a weak point. Though Department of Public Health & Family Welfare of the state made efforts through training / orientation of staff and paid huge amount as Authorisation Fee to MPPCB but effective management is still a challenge.

The National Rural Health Mission (NRHM) - an over arching programme by the Ministry of Health & Family Welfare, Government of India made financial provisions to ensure hygienic and safe health facilities and issued Infection Management & Environment Protection (IMEP) Guidelines.
The BMW disposal may be through any suggested methods but the key is - the proper segregation of Blood/Body-Fluid stained Cotton/Bandages, solids, liquids, sharps, laboratory, anatomical or chemical waste at the point of generation. Awareness to those who generate, handle, manage and treat this infectious waste i.e. the Doctors, Nurses, Compounders and other staff including patients and attendants are most likely to get infected.

Keywords: *Treatment, Hygiene, Infection, Quality, Waste*

IND28

PRODUCT CUSTOMIZATION BY REQUIREMENT ENGINEERING

A. Vijay.B.S[1], B. Babu Yuvaraj.J[2] and C. Mohammed Naveed.S.I[3]

[1]Bosch Limited, India, Vijay.bs@in.bosch.com
[2]Bosch Limited, India, Babu.yj@in.bosch.com
[3]Bosch Limited, India, Mohammed.Naveed@in.bosch.com

Abstract: *The aim of this technical paper is to show how an innovation can do wonders even in a crisis situation supported by Requirement Engineering methodology. The crisis showed the importance of close working together of two stakeholders, an original equipment manufacturer (OEM) of an automotive vehicle, and sub-component supplier of alternator, Bosch, to solve the problem on hand. It highlighted that seemingly trivial data can become crucial in problem solving during a crisis. Adapting the requirement engineering to ensure optimization through customization was the key. Challenges are opportunities in disguise. These situations also have the ability to spring up new solutions altogether, which in our case resulted in a new product class being born. This factor coupled with successful vehicle launch for the customer was a typical example of "Creating Value – Sharing Value". Use of relevant quality tools and necessary validations ensured proper implementation of the change.*

Keywords: *Requirement Engineering, Creating Value - Sharing Value, System FMEA, Customization, Innovation*

IND29

PIONEERING LEAN IN IT SERVICES FOR DELIVERY EXCELLENCE: A WIPRO EXPERIENCE

Devender Malhotra[1] and Rituparna Ghosh[2]

[1]Wipro Limited, Bangalore, India
Email: devender.malhotra@wipro.com
[2]Wipro Limited, Bangalore, India
Email: rituparna.ghosh@wipro.com

Abstract**:** *Lean has been a philosophy that had been practiced for decades on the manufacturing shopfloors. The mindset was derived from Taiichi Ohno's Toyota Production System. The purpose of this paper is to describe the experience of Wipro's IT Services business (comprising the three divisions of Wipro Technologies, Wipro Infotech and Wipro BPO) while using the manufacturing centric concepts of Lean in the IT application development and maintenance domain. The case study details how Wipro understood the Lean concepts as applied in the manufacturing domain and interpreted them in the Information technology domain. This also focuses how proof of concepts were designed for various Lean tools and techniques across projects and how the success/failure was used as a stepping stone for further broadbasing. The case will also detail the benefits the different types of projects received from using Lean techniques and tenets.*

Keywords*: Lean, Software Development and Maintenance, Productivity Improvement*

IND32

GREEN LIGHTING FOR PROCESS INDUSTRY

A. Archit Bajaj[1] and B. Amitabh Bhattcharjee[2]

[1]TATA Steel Limited, TATA Steel Limited, Jamshedpur, India
Email: archit.bajaj@tatasteel.com
[2]TATA Steel Limited, TATA Steel Limited, Jamshedpur, India
Email: amitabh.bhattcharjee@tatasteel.com

Abstract**:** *The purpose of this paper is to study and evaluate coupling LED lighting with TEG (Thermo Electric Generator) for a process industry like Steel/Aluminum etc. that can be an environmental friendly solution to meet the lighting load requirement to a great extent. The study reviews the sources of waste heat energy released to the atmosphere and thus utilizing it to meet lighting load requirement. The knowledge and experience gained from this can be extended to other manufacturing industries.*

Keywords**:** *Waste, Energy, Innovative, quality, technology*

IND33

INTERNAL QUALITY ASSURANCE CELL: A PLATFORM TO SUSTAIN AND ENHANCE ACADEMIA-INDUSTRY

Dr. B. S. Madhukar and B. Mr. I. H. Jahagirdar

A. Deputy Adviser, National Assessment and Accreditation Council, Jnana Bharathi Road, Nagarbhavi, Bangalore – 560072, Karnataka, INDIA, Email: vanmadhu@rediffmail.com
B. Librarian, National Assessment and Accreditation Council, Jnana Bharathi Road, Nagarbhavi, Bangalore – 560072, Karnataka, INDIA, Email: jagirih@gmail.com

Abstract: *The article examines the role of Internal Quality Assurance Cell in the quality assurance process of higher education in India. IQAC cell in the institution of higher learning plays an important role in sustaining and enhancing the quality of an institution. It is an important mechanism in the repertoire of an institution which can be used to promote synergies between academia and industry and help bridge the un-employability gap. An attempt is made in this article to demonstrate this thinking with select case studies of few institutions.*

Keywords: *Quality Assurance, Higher Education, Academia-Industry Interaction*

IND34

EXPLOITATION OF FUME EXTRACTION DUST FOR THE DEVELOPMENT OF PAVING BLOCKS USING ECO-FRIENDLY GEOPOLYMERISATION PROCESS

Sanjay Kumar[1], K. B. Gaud[2i], S. K. Nath[1], YVSC Chowdhary[2], R M Kamat[2]

[1]CSIR-National Metallurgical Laboratory, Jamshedpur 831007, India
[2]Mahindra Ugine Steel Company, Khopoli, Maharashtra, 410 216, India

Abstract: *Fume extraction (FE) dust, a waste generated during production of alloy steel has been stabilized in the matrix of geopolymer derived from slag and fly ash. Influence of 0-40% FE dust addition on the reaction, structure and properties of geopolymer has been studied using Isothermal conduction calorimetry (ICC), Fourier transform infra-red spectroscopy (FTIR), Electron probe microanalysis (EPMA) and mechanical testing. It was observed that 20-30% FE dust can be safely used in geopolymer. Based on scientific understanding, paving blocks using 10 and 20% red mud were developed. These blocks were meeting IS 15658: 2006 standard and leaching of toxic metals were either negligible or within permissible limit.*

Keywords*: Value Addition, Eco–Friendly, Emission Reduction, Business Opportunity, Green Building Material*

IND35

ALIGNING OUR WATER GOAL TO NATIONAL WATER POLICY 2020

N P Singh[1], K. B. Gaud[1], S B Bhapkar[1], P N Gawade[1], D M Patil[1]

[1]Mahindra Ugine Steel Company, Khopoli, Maharashtra, 410 216, India

Abstract: *Water is one of the most crucial elements in our National development planning for the 21st century. To minimize the negative impacts of the overuse and misuse of water and to ensure that our precious water resources are used optimally in removing and achieving economic and human development, it is necessary that we have a water policy which recognizes and adequately addresses the challenges we face and are going to face. A number of problems /challenges have emerged in the development and management of water resources. Strengthening these initiatives requires the strengthening of the traditional techniques in conservation and management, recognition of water as a common property resource.*

Keywords*: Conservation, Natural resources utilization, Business goal to National mission, Reuse.*

IND36

ENHANCING PRODUCTIVITY OF THE MORTGAGE SALES FORCE USING QUALITY MANAGEMENT PHILOSOPHIES

Chinmay Dhoble[1], Suresh kn Kumar[2], Atul Sharma[3], Manuj Mahendra[4], Vivek Jain[5]

Reliance Commercial Finance, Reliance Housing Finance Ltd., Wadala, Mumbai, India – 400031
[1]Email: Chinmay.dhoble@relainceada.com
[2]Email: suresh.kn.kumar@relainceada.com
[3]Email: atul.km.sharma@relainceada.com
[4]Email: manuj.mahendra@relainceada.com
[5]Email: vivek.s.jain@relainceada.com

Abstract: *Normally Quality Management practices are used to improve processes; through this paper we will demonstrate that they can be used with equally success to generate additional Business volumes as well*

Our objective was to increase the Mortgage Business volumes without increasing the cost. Of all the factors which were considered we arrived at Productivity of the Sales Force as the key driver to achieve this objective.

Normally, Productivity enhancement is a much localized sales phenomenon and is driven by the sales supervisor at the location. Every individual uses different tools to increase productivity based on their experience and judgment and there is a lot of subjectivity in this approach. The result is inconsistency in delivery.

We decided to take a more structured approach and used the principles of Quality Management to arrive at the same. We did a statistical analysis of the performance of individuals and identified the action points based on the same. The locations where we would take up this project, the baseline, the target and the matrices were based on this analysis.

A strong periodic review mechanism of these initiatives was established and course corrections were done real time. The results were better than expected and sustained. Also, this project led to a standardized Sales Management Process which has now been implemented not only for the Mortgage Business but also for the all the other Businesses of the Company.

Thus using Quality management philosophies we transformed a subjective, inconsistent process into a structured Sales Management Program.

Keywords: *Quality, Sales Management, Mortgage, Financial Services, India*

IND37

"TRANSFORMATIONAL JOURNEY OF MAHINDRA & MAHINDRA - SWARAJ DIVISION" THROUGH BUSINESS EXCELLENCE ACTIVITIES

Raja Chatterjee[1]*, Joginder Jaglan[2]

[1]GM- Business Excellence, FES, Mahindra and Mahindra Limited
Email: chatterjee.rajdeepak@mahindra.com
[2]Sr. Manager – Business Excellence, FES, Mahindra and Mahindra Limited
Email: jaglan.joginder@mahindra.com

Abstract: *This paper covers the transformation journey of Mahindra &Mahindra (M&M) - SWARAJ Division. M&M - SWARAJ Division is working on Total Quality Management (TQM) approach to achieve organization vision. The study review strategic plan of the SWARAJ division for 2007-2012 and identifies as an area of to add value for the SWARAJ division. It also incorporates the adoption of Policy management process to align organization toward Vision. This paper contributes to the development of The TQM Framework that helps to foster excellence for all its operations. The experience learnt from implementing the framework could be extended to other plants and sectors of M&M group and other companies. This paper emphasis "How TQM can transform the organization", which is realized by M&M – SWARAJ Division.*

Keywords: *Total Quality Management, Division, Development*

IND38

EMPLOYEE ENGAGEMENT PRACTICES IN NEW PRODUCT DEVELOPMENT TEAM

Shrikant B Kulkarni[1]*, Arvind D Lawande[2]

[1]GM- Product Development, Farm Division, Mahindra and Mahindra Limited
E-mail: kulkarni.shrikant@mahindra.com
[2]GM- Product Development, Farm Division, Mahindra and Mahindra Limited
E-mail: lawande.arvind@mahindra.com

Abstract: *Success of any business rests firmly in the hands of its employees. Employee satisfaction through positive engagement has a direct and significant impact on the products and services. Tractor Vehicle Engineering (TVE) is a team of design engineers involved in developing new products. Employees are stretched to the limits in today's cutthroat world to deliver products with competitive cost, intended quality and shortest time. TVE has dealt engagement very innovatively based on fundamental of democracy "Of the People, For the People and By the People". With this in mind, TVE strategizes, plans and executes various initiatives through Total Quality Management way or Mahindra RISE way. Various practices have become process and use of these in an innovative way is the crux in developing TVE as a great place to work. Q12 questionnaire and Employee Satisfaction Index (ESI) are well known parameters worldwide surveyed by Gallup, Inc. to measure these. The engagement of TVE is reflected through the Q12 Score of 4.94 out to 5 which has led to improvement in ESI to an incredible 97.33 out of 100.*

Keywords: *Practices, Engagement, Employee Satisfaction, Process, Workplace*

IND40

GENERATING BUSINESS RESULTS THROUGH TQM EDUCATION AND TRAINING

Singh Rajinder

Mahindra Institute of Quality, Email: singh.rajinder@mahindra.com

Abstract**:** *The traditional approach of TQM trainings has been to conduct skill building program & then post training participants usually implement learning's by self effort. There are many challenges in this area like linkage of training with business results & inspiring participants to apply their learning's at work area. Due to lack of linkage of training with business results, trainings do not get adequate attention from organizations.*

The Purpose of this paper is to show how TQM trainings and capability building initiatives can generate business results and how the same can be measured.

Keywords: *Application of TQM**,** Systematic problem Solving & Business Results**,** Effective follow-up and robust review mechanism**,** Measuring Effectiveness of Training*

IND41

APPLICATION OF SHAININ TECHNIQUES FOR IMPROVEMENT IN YIELD IN ONE OF STEEL TUBE MILLS (HF#3) OF TATA STEEL, TUBES SBU

Nishith Kumar Sinha[1], B K Srivastava[2] and Rajesh Kumar[3]

[1]Head-Improvement, Tubes SBU, P.O. –Burma Mines, Jamshedpur -831007, India
E-mail: nishith.sinha@tatasteel.com,
[2]Head-ST Mills, Tubes SBU, P.O. –Burma Mines, Jamshedpur -831007, India
E-mail: bksriv@tatasteel.com,
[3]Sr. Manager ST Mills Operation, Tubes SBU, P.O. –Burma Mines, Jamshedpur -831007, India
E-mail: rajeshkumartubes@tatasteel.com

Abstract: *The purpose of presenting this paper is that Tata Steel Tubes Division has adopted shainin methodology to solve its engineering problems by the shop floor people who are not professional in advanced statistical tools. It is believed that most of the complex engineering problems require systematic deeper analysis and application of advanced analytical tools. However, in most cases, people want quicker solutions given based on judgment, engineering guesses and opinions which ultimately result to recurrence of problem. When the projects are selected based on Top-down approach there will be multiple six sigma projects that needs to be completed to meet the requirement at the top management whereas bottom-up approach (like this project)has one project since it is for addressing a specific chronic problem. The experience learnt from this project to use shainin technology for improving the yield by reducing bend generation has been extended in other mills to solve those problems in which causes & solutions are unknown.*

Keywords: *Shainin Techniques, SSV, Tata Steel, Tubes, Rejection*

IND42

IMPROVING TURNAROUND TIME FOR LOAN DISBURSEMENT PROCESS

Yogesh Gaat [1], Usha Dutta[2], Brijesh Shukla[3], and Sunil Y Jadhav[4]

Reliance Commercial Finance, Wadala, Mumbai, India
[1]Email: yogesh.gaat@relianceada.com
[2]Email: usha.dutta@relianceada.com
[3]Email: brijesh.shukla@relianceada.com
[4]Email: sunil.y.jadhav@rcap.co.in

Abstract: *Our research paper aims at identifying the causes of delay in processing loan application and implementing remedial measures so as to provide a faster turn-around-time thereby creating a vow factor and increasing the probability of repeat business at lower cost of acquisition. By the end of the paper we will also bring out a strong correlation between the objective of the research paper and the core financial objectives of our business. We have used Lean Six Sigma methodologies to identify key variables that impact the turnaround time of our loan disbursement process. Post root cause identification and implementation of corrective actions we have put in place a robust monitoring mechanism to ensure that the improvements are sustained. Post successful completion, this process has been standardized and replicated in other locations and results are clearly visible. Thus by following this quality management process we were able to achieve higher business volumes with the same manpower at lower cost.*

Keywords: *Quality, Monitoring, Improvement, CVCE, Financial Services, India*

IND44

CREATING BUSINESS VALUE

Rajesh Sehgal[1] and Gopal Aggarwal[2]

[1]Quality Department, Wipro Limited, India;
Email-rajesh.sehgal@wipro.com
[2]Innovation Team, Wipro Limited, India;
Email-gopal.aggarwal@wipro.com

Abstract: *Innovation is Engine for Growth. The purpose of this paper is to understand innovative concept of "CREATING BUSINESS VALUE" and shift from "Process Value Meter" to "Business Value Meter".*
Traditionally, organizations outsourced "PROCESSES" and focussed on "Process Value Creation". Service providers were not accountable for Customer's business outcome.

In the modern world, focus is shifting from "PROCESSES VALUE" to "BUSINESS VALUE". Service Providers are made accountable for customer's business outcome e.g. end user satisfaction, revenue growth, cost reduction, etc. "BUSINESS VALUE CREATION" requires significant investment in Domain skill-sets to offer solutions aligned to customer's core business and strategy.

Early adapters of "Business Value Creation" have multiple advantages like increased customer satisfaction, new business, partnering with customers, Gain share, etc.

With the changing equations, it may not be inappropriate to conclude that Service Providers need to shift from "Process Value Meter" to "Business Value Meter" for "SURVIVAL" of their business.

Keywords: *Customer, Business, Process, Value*

IND46

REDUCTION IN BRANCH OPERATING EXPENSES

[1]Sachin Bora, [2]Sunil Agrawal, [3]Ajay Pugalia, [4]Kaustubh Dani

[1]Head & Vice President – Business Excellence, Reliance Life Insurance Company Limited, Mumbai, India
Email: Sachin.bora@relianceada.com
[2]Chief Financial Officer (CFO) – Reliance Life Insurance Company Limited, Mumbai, India
Email: sunil.agrawal@relianceada.com
[3]Chief Manager – Finance, Reliance Life Insurance Company Limited, Mumbai, India
Email: ajay.pugalia@relianceada.com
[4]Chief Manager – Business Excellence, Reliance Life Insurance Company Limited, Mumbai, India
Email: kaustubh.k.dani@relianceada.com

Abstract: *There is a famous say "A penny saved is a penny earned". Considering this philosophy, we at Reliance Life Insurance realized that in the current scenario (especially after 2008 global meltdown), it is not only important to keep a tab on expenses but it is also important to find out innovative ways to optimize the cost. Out of the total operating expenses, branch related expenses are one of the major component as our distribution model is heavily dependent on branches. Considering that we have 1248 branches with varied capacities spread across India, reduction in this cost head would help the organization in a big way by having a huge impact on the bottom line.*

Keywords: *Douglas McGregor's Theory X & Theory Y, Improvement from Participative Management, Brainstorming*

IND47

DOING THINGS RIGHT, THE FIRST TIME AND EVERY TIME TO ENHANCE CUSTOMER SATISFACTION

[1]Sachin Bora, [2]Manoranjan Sahoo, [3]Pankaj Shrivastava, [4]Rajmani Singh

[1]Head & Vice President – Business Excellence, Reliance Life Insurance Company Limited, Mumbai, India
Email: Sachin.bora@relianceada.com
[2]Head & Executive Vice President – Agency Sales, Reliance Life Insurance Company Limited, Mumbai, India
Email: manoranjan.sahoo@relianceada.com
[3]Assistant Manager – Agency Sales, Reliance Life Insurance Company Limited, Mumbai, India
Email: pankaj.s.shrivastava@relianceada.com
[4]Assistant Manager – Business Excellence, Reliance Life Insurance Company Limited, Mumbai, India
Email: rajmani.singh@relianceada.com

Abstract: *The main purpose of this paper is to ensure that the culture of doing things right the first time and every time is spread across our organization and also to the outside world. Also, to share our experience of enhancing customer satisfaction (with proved data) by doing things "first time right". The main objective of our organization is to process the insurance proposals and issue life insurance policy to the customers. The processing of the insurance proposals is highly dependent on documents submitted by the customers - both in terms of accuracy & timeliness. These documents are collected by our insurance sales advisors and are submitted at our branch office where they are checked for completeness. If the documents are not complete & accurate, the proposals can't be processed and the sales team has to do a lot of rework which results into 1.Higher cost of poor quality 2.Delay in processing thus delay in issuance of a life insurance policy 3.Customer/ Channel dissatisfaction 4.Opportunity loss.*

Keywords: *First Time Right, Life Insurance proposal form, Know your customer (KYC) documents, COPQ (Cost of Poor Quality)*

IND48

TO REDUCE THE REJECTION IN SEAT BELT ASSEMBLY: A CASE STUDY

Dr K. Kumar[1], Sagar Vashisht[2], Sudipta Sarkar[3], Praveen[4]

[1]Maruti Center for Excellence (MACE), Gurgaon, India
Email: Krishan.Kumar@maruti.co.in
[2]Maruti Center for Excellence(MACE),Gurgaon, India
Email: mace_sagar.Vashisht@maruti.co.in
[3]Autoliv Manesar, India
Email: sudipta.sarkar@autoliv.com
[4]Autoliv Manesar, India
Email: Praveen.Kumar@autoliv.com

Abstract: *The Case study depicted in this paper is the Lean Project that was completed at one of the Maruti Suzuki India Limited (MSIL) supplier "Autoliv, India". This paper reviews the implications of using Advance Statistical tool box including DOE to reduce the rejection in Seat Belt Assembly. This paper is an attempt to justify the highly useful role of Problem Solving techniques like DOE, Graphical analysis in manufacturing industry. In this paper, Advanced Statistical Tools have been applied in an organization manufacturing* ***Passenger Car Seat Belt*** *with dwindling productivity levels because of high rejection rate in the manufacturing of Seat Belts. It was found that application of these tools brought down the Stitching Rejection PPM level from 4133 to 2454, which is equivalent to monitory saving of 0.14 million per annum.*

Keywords: *PPM, Main Effect Plot, DOE*

IND49

TO REDUCE THE DAMPING FORCE (D.F.) REWORK OF SHOCK ABSORBER ASSEMBLY: A CASE STUDY

Dr K. Kumar[1], Sagar Vashisht[2], Narender Gaba[3], Vivek Gupta[4]

[1]Maruti Center for Excellence (MACE), Gurgaon, India
Email: Krishan.Kumar@maruti.co.in
[2]Maruti Center for Excellence(MACE),Gurgaon, India
Email: mace_sagar.Vashisht@maruti.co.in
[3]Tenneco Automotive Bawal, India
Email: ngaba@tenneco.com
[4]Tenneco Automotive Bawal, India
Email: vgupta1@tenneco.com

Abstract: *The Case study depicted in this paper is the Lean Project that was completed at one of the Maruti Suzuki India Limited (MSIL) supplier "Tenneco, India". This paper is an attempt to justify the highly useful role of Problem Solving techniques like Shainin Technique & 7 QC tools in manufacturing industry. Shainin's methodology of problem solving has been very useful in solving very complex problems in a very short period of time. In this paper, Shainin methodology has been applied in an organization manufacturing Shock Absorber Assembly with dwindling productivity levels because of high rejection rework rate. It is found that application of Shainin Methodology brought down the Rework % from 1.13 to 0.34 equivalent to monitory saving of 1.6 million per annum.*

Keywords: *Shainin, Paired Comparison, Component Search, 7QC.*

INDO01

DUST RETURN AS NEW MATERIALS FOR PPC PRODUCT DEVELOPMENT PROCESS BY-PASS TECHNIQUE IN TUBAN FACTORY.

Progressive Team [1](Chatur Febrianto, Saiful Mas'an, Afifudin, Zuhri, Nugrahadi, Tri Eddy, Susanto, M. Kharis, Ahmed Vaival Setiadi)

[1]PT Semen Gresik Tbk, Gresik & Tuban, Indonesia, ptsg@sg.sggrp.com, wkm_indonesia@yahoo.com

Abstract: *Semen Gresik Corporation with it is company strategy through innovation in all sector are needed. Dust Return as new material to develop Portland Pozoland Cement (PPC) product using bypass process technique in Tuban Plant" is one of invention which has shown it's contribution. Through series of research in the invention, we found no quality change in PPC product up till 8 % dust return addition. The invention has been applied in Tuban plant since 2008 till end of 2010 is 196.839 tons and has produce value 57.508.736.856 IDR (USD 6.4 millions) per year in PPC cement. Not only financial benefit but also the invention is in the line with the government's effort to reduce the impact of global warming due to the increasing of carbon emission.*

Keywords: *Dust Return, New addition material, Portland Pozoland Cement (PPC)*

IRAN01

QUALITY WAY: THE PERFECT WAY TO SURVIVE AND GROW

Mohammad Farshad KAVEHPISHEH

ATEC consultants, No. 4, 8th str., Gandhi str., Tehran, Iran.
Email Address: Mf-kavehpisheh@atec-ir.com

***Abstract**: Global economic crisis, socio-political situation, less projects and more competitions, these are disappointing news that business owners are hearing for quite some times now. Developing countries have been affected with a delay but much more paralyzing impact depending on their specific economic structure and configuration.*

For a design and engineering consulting company (more or less same as other businesses) the problem was not mainly decrease in benefits and the financial issues but the survival of the organization and the whole business. As a service provider and specifically a project-based company, needs projects to go on. New markets, new clients, more projects from old clients, lowering the costs, increasing efficiency and improvement in organizational performance, all should be parts of the strategic plan. What would be the best way to overcome the obstacles and successfully face the challenges? More effective marketing, improvement in public relations, more budget cuts, these are usual solutions but are they enough? It's true that the conventional initiatives become more and more ineffective and new approaches are required.

The paper tries to explain how ATEC Consultant Engineers challenged the cultural change and paradigm shift of the organization for improving service quality and the overall performance to meet the strategic objectives of the company and guarantee its sustainable survival in today's business complex working environment.

***Keywords**: Consulting engineering , Economic crisis, Cost of poor quality, Sustainability*

JP01

A CONTROL CHART BASED ON VARIANCE OF AVERAGES

Makoto Ono

HGST, a Western Digital company, makoto.ono@hgst.com

Abstract: *This paper proposes a new control chart for monitoring within-group variation. Within-group variations are caused by not only random anomalies but also spatial anomalies. In order to address this problem, the proposed control chart focuses on the relation among several measurement points within a group and applies variance of averages to spatial anomaly detection.*

A number of studies have investigated solving this problem using multivariate control charts. However, multivariate control charts require prior learning of a mathematical model based on many past data, whereas the proposed chart does not require modeling based on past data and is easily applied to high-mix and low-volume production.

Finally, the results of a simulation and a trial application to a wafer process indicate that the proposed control chart has higher detectability than the conventional s-chart.

Keywords: *Control Chart, Within-group Variation, Variance of Averages, High-mix and Low-volume Production*

JP02

A STUDY ON A METHOD OF IMPROVING WORKING METHOD IN HEALTHCARE

Haizhe Jin*, Masahiko Munechika, Masataka Sano, and Chisato Kajihara

Waseda University (Tokyo, Japan), Japan, 3-4-1 Okubo Shinjuku-ku Tokyo 169-8555,
+81-3-5286-3304, h_jin@moegi.waseda.jp

Abstract: *Incidents during the medication process occur at high rates in most hospitals. Therefore, reducing medical incidents is vital to guarantee healthcare quality. It is an effective countermeasure that improves the working method.*

In this paper, an error-proofing method is applied to reduce the frequency of such incidents. In order to simplify the process of planning error-proofing countermeasures, the following approaches are employed in this study:

(1) Improvement elements are extracted in order to planning error-proofing countermeasures.

(2) The Improvement elements that caused the error-factor are called improvement objects, and we designed the extraction set of improvement objects.

(3) We correlated the improvement objects with the recommended error-proofing solutions. Finally, these parameters are collated. Moreover, these tools are summarized as a procedure for analyzing such incidents and devising appropriate error-proofing countermeasures.

Additionally, this paper presents the results of the application of the proposed method in other Hospitals. In conclusion, the proposed procedure can facilitate the planning of error-proofing countermeasures and can reduce the medical incidents.

Keywords: *Error-Proofing, Healthcare, Error-Factor, Improvement Object*

JP03

A METHOD TO IMPROVE BOTTLE CAPS CONSIDERING OPENING AND CLOSING

Tatsuya MARIKO[1], Masahiko MUNECHIKA[2], and Masataka SANO[3]

Waseda University, JSQC(Japan)
[1]2471rpm@suou.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *In the beverage industry, many consumers complain about difficulties opening and closing plastic bottles. A typical complaint might be that a plastic water bottle is hard to open or close. Therefore, it is necessary for companies that sell beverages to improve the design of plastic bottles considering consumers' Kansei. A method to describe consumers' Kansei in a product design by understanding consumers' Kansei evaluation structure has been proposed and used to improve the quality of many products. However, no methods have been established to decide directions for improvement considering evaluations of different types of use (like opening and closing) and consumer preferences. Therefore, this study first understands consumers' Kansei evaluation structures and their different preferences. Next, a method to organize different preferences regarding multiple types of use is created. Finally, based on this method, guidelines for the improvement of bottle caps are proposed.*

Keywords: *Kansei Quality, Customer Satisfaction, Bottle Cap, Personal differences*

JP04

A STUDY ON THE EVALUATION METHOD OF EDUCATION FOR HEALTHCARE SAFETY

Tsubasa IKI[1], Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC(Japan)
[1]tsubasa715@ruri.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *Medical treatment is a field in which human knowledge and skill influence the quality of medical service. Therefore education for healthcare safety for medical workers is indispensible. In the education for healthcare safety, the evaluation method is needed. In this study, we evaluate some methods of education for healthcare safety and consider methods of evaluation of their effects on capability change and behavior modification. Then, we propose an evaluation method of education for healthcare safety. Using this method, we can see how individual capability and behavior, and thus quality of medical services, improve after education, as well as how healthcare education can further improved.*

Keywords: *Education system, Healthcare safety, Evaluation method*

JP06

A STUDY ON DECREASING MEDICAL INCIDENTS RELATED TO PATIENT-PROVIDED MEDICINES

Keisuke FUKUDA[1], Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC(Japan)
[1]xdakey-002237@fuji.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *At present, an increasing number of hospitals are using medicines brought in by patients or "patient-provided medicines." This involves a cash savings for the hospital, but also increases the amount of work involved and number of incidents that occur. So far, medical personnel have been unable to decrease the number of these incidents. Therefore, in this study we compare medical processes using medicines brought by patients and those related to medicines prescribed in the hospital, and figure out the features of patient-provided medicines. We propose a method for decreasing the number of medical incidents related to patient-provided medicines. By using this method, we can draw out countermeasures for medical incidents related to patient-provided medicines and decrease these incidents.*

Keywords: *Patient-Provided Medicines, Medicines Prescribed in Hospital*

JP07

PROPOSAL OF THE METHOD TO PLAN EDUCATION AND TRAINING FOR HEALTHCARE SAFETY

Chisato KAJIHARA[1*], Masahiko MUNECHIKA[2], Masataka SANO[3], Haizhe JIN[4]

Waseda University, JSQC (Japan),
[1]chisato-k@fuji.waseda.jp, [2]munechika@waseda.jp, [3]mo3@fuji.waseda.jp, [4]h_jin@moegi.waseda.jp

Abstract: *Many hospitals are now introducing Quality Management System (QMS) to ensure high quality healthcare services. Safety is a key element of quality, to which hospitals attach great importance. Therefore, it is especially important for hospitals to implement healthcare safety management in their QMS. The educational content required to train personnel to implement healthcare safety management was considered in previous research. Moreover, the creation of a table of such content was proposed. However, the selection process of target personnel for education and training was not detailed. It is difficult to both select target personnel and plan appropriate education and training for each level of personnel. This paper proposed a procedure to group target personnel and plan education and training for healthcare safety, utilizing tools such as educational content table, organizational chart for healthcare safety, and skills-map.*

Keywords: *Quality Management System (QMS), Healthcare Safety Management, Education and Training System, Educational Content, Skills-map*

JP08

A Method for the Derivation of Standard Elements of a Medical Process Flow Chart

Kyo FUJIWARA[1]*, Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC (Japan)
[1]eternal-memory@toki.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *For the current study, we suggest a method for the derivation of the standard elements -standard element can be utilized by many hospitals normally- for the visualization of a business process by using a Process Flow Chart (PFC). First, we examined criteria related to grain size of an element to derive standard elements by analyzing accidents and PFCs of several hospitals. Next, we derived standard elements in a physiological examination and suggested a method for the derivation of these elements. Finally, we applied this method to the hospital food-service business. Thus, we identified characteristics that occur in many accidents. Moreover, we investigate the possibility that visualization of a process by using a PFC can improve hospital activities, by comparing such activities across hospitals.*

Keywords: *Quality Management System in Healthcare, Process Flow Chat (PFC), standardization, visualization*

JP09

ROBUST PARAMETER DESIGN FOR MULTI SIGNALS-RESPONSE SYSTEM

K. Tsukuda and Y. Nagata

WASEDA University, 3-4-1 Okubo, Shinjuku-ku, Tokyo-to, 169-8555, JAPAN,
k.tsukuda@fuji.waseda.jp, ynagata@waseda.jp

Abstract: *This report argues the way to design robust multi signals system from the point of view of natural generalization of Taguchi method. In this report, firstly, we show example data and assumed data format. Then, we define ideal function and present a multiple regression model. Next we decompose sum of squares and suggest Signal-to-Noise Ratios for multi signals system. Finally, we show an example of robust parameter design by the proposed approach and test the effectiveness of this design solution through comparison with design solution of other method. We get the conclusion that the proposed SNR approach derives different design solution from other method such as Response Function Modeling and Taguchi's original design. This outcome implies past ways can be inadequate and there can be a better design method.*

Keywords: *Robust Parameter Design, Taguchi method, Response Function Modeling, Signal-to-Noise ratio*

JP10

A STUDY ON INDICES FOR CUSTOMER SATISFACTION, SERVICE QUALITY AND FAN`S OPINION LEADER OF PROFESSIONAL BASEBALL TEAMS IN JAPAN

Hideo Suzuki

Department of Administration Engineering, Faculty of Science and Technology, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama-shi, Kanagawa, Japan
E-mail: hsuzuki@ae.keio.ac.jp

Abstract: *This paper presents a structural model of relationships between service quality, customer satisfaction, and loyalty for Japanese Professional baseball teams. Web-based customer survey is conducted for Japanese professional baseball in the end of January of 2009, 2010, 2011 and 2012. Then, the cause-effect model for between the service quality (such as the team performance, the attractiveness of teams and players, stadium, etc), customer satisfaction, and loyalty is estimated. In addition, a structural model of fan's opinion leader is estimated. Furthermore, the scores for these construct concept are provided for each team. Finally, we examine the relationship between these scores, the number of spectators of the home stadium and sales for the underlying teams.*

Keywords*: Customer Satisfaction, Service Quality Service, Marketing and Sports Marketing*

JP11

AN APPROXIMATION METHOD OF BINARY PRINCIPAL POINTS BASED ON K-MEANS APPROACH

Haruka Yamashita[1*], Hideo Suzuki[2]

[1]Keio University, Kanagawa, JSQC (Japan), Research Fellow of the Japan Society for the Promotion of Science, harukayamashita@a5.keio.jp
[2]Keio University, Kanagawa, JSQC (Japan)

Abstract: *In the analysis of binary (0 or 1) data, Yamashita and Suzuki (2010) proposed Principal Points for binary data based on the concept of Principal Points. Furthermore, Yamashita and Suzuki (2011) proposed two heuristic methods for approximating Principal Points of binary data; however, these approximation methods remained problem of accuracy. Therefore, we suggest a new approach of approximation based on conventional k-means algorithm. It enables us to get approximate solution which is able to get rid of a problem of accuracy. Moreover, we analyse two questionnaire survey data with three approximation methods for Principal Points of binary data, and compare three approximation methods in terms of accuracy and efficiency.*

Keywords: *Principal Points, Binary data, Heuristic approximation method, k-means method, Empirical distribution*

JP12

SEMANTIC ANALYSIS OF THE CUSTOMER INQUIRY DATA BASED ON TEXT MINING USING ONTOLOGY

Hodaka Nakamura[1], Fumiaki Saitoh[2], and Syohei Ishizu[3]

Aoyama Gakuin University 5-10-1 Fuchinobe, Sagamihara City, 252-5258, Japan,
[1]Email: c5611167@aoyama.jp
[2]Email: saitoh@ise.aoyama.ac.jp
[3]Email: ishizu@ise.aoyama.ac.jp

Abstract: *Product-related inquiry data such as web reviews, call center data, and product FAQs are frequently collected and analyzed. Analysis of the customer inquiry is useful because such analysis allows for extraction of trends related to important information such as product evaluations, product deficiencies, and functional needs, with text information coming directly from customers. The goal of this study is to focus on meaning information as a means of determining customer intent from inquiry information and extracting inquiry factors. Meaning information is then used in analysis to extract customer inquiry trends over the entire inquiry information dataset.*

Keywords: *customer inquiry, text mining, ontology, semantic analysis, customer intention*

JP13

PREVENTION BY PREDICTION: SEVEN VIEWPOINTS FOR ACHIEVING RELIABILITY AND SAFETY

Kazuyuki Suzuki

Dept of Informatics
University of Electro-Communications
Tokyo 182-8585, Japan; suzuki@se.uec.ac.jp

Abstract: *The Great East Japan Earthquake and tsunami resulted in great sorrow due to the loss of many people and the widespread destruction of communities. We must make every effort to prevent such tragedies. The key to such prevention is "prediction." There are two approaches to prediction: induction and deduction. The induction approach includes (1) sharing experiences and histories, (2) application of Heinrich's law, and (3) abstraction and generalization of individual problems, and implementation of the PDCA cycle: plan, do, check, and act. The deduction approach is based on scientific theory and engineering technology and uses seven viewpoints for prediction: objectives (desired functions), input items, mechanisms needed to achieve desired functions, internal and external stresses, failure mechanism, failure mode, and effect/damage. Use of both approaches in an integrated manner is an effective way to predict potential problems.*

Keywords*: Induction, Deduction, Stress, Failure mechanism, Failure mode*

JP14

A NURSE FAIR ARRANGEMENT MODEL BY DYNAMIC PROGRAMMING

W. Zang[1] and T. Ohno[2]

Waseda university, 3-4-1 Okubo Shinjuku-ku Tokyo 169-8555 Japan
[1]zangweismile@fuji.waseda.jp
[2]ohno@waseda.jp

Abstract: *In this study, an optimization problem for nurses' arrangement based on nurse's skill-mix is considered. And to solve this problem, the nurses' fair arrangement model using dynamic programming approach is proposed, which is available to both highlight the appropriate amount of nurses in different capability levels and give an approach for balancing the nurses` arrangement of hospital wards considering the difference of hospital wards. We expect that this study can be viewed as a basic model for optimizing the nurses` arrangement problem, and it becomes an application model by refining the parameter* μ_j *and* A_i.

Keywords: *recurrence equation, knapsack problem, principle of optimality, principle of invariant imbedding, equations fairness*

JP15

A METHOD FOR VISUALIZING MEDICAL INCIDENTS RELATED TO PATIENT IDENTIFIERS

Yuki WAKASAKI[1]*, Masahiko MUNECHIKA[2] and Masataka SANO[3]

Waseda University, JSQC(Japan)
[1]yuki.wakasaki@ruri.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *This paper proposes a method for visualizing medical incidents related to patient identifiers as a way to reduce the number of these incidents. Hospitals encounter what are called "wrong patient incidents," and these occur primarily when staff mistake one patient for another. Hospital administrators have attempted to prevent such incidents but have been unsuccessful, largely because they have not correctly understood the nature of these incidents. In this paper, we focus on medical incidents related to patients' identifying information. We clarify the overall operation processes involved in the use of the different identifiers; classify the operation processes into four categories, each of which includes multiple tasks; and create model charts showing the correct tasks for each process. In addition, we list 15 failures that can occur in the wrong patient incidents. With this approach, we develop a method to visualize such incidents by using the failures list and the model charts.*

Keywords: *Wrong Patient Incident, Identifier, Visualization, Model Chart*

JP16

PROPOSAL OF PRODUCT RECOMMENDATION SYSTEM THAT CORRESPOND CHANGE OF SHORT-TERM PREFERENCE

Akira Inoue[1], Takeshi Kaneko[2] and Shin-Ichiro Yokoyama[2]

[1]Tokyo City University, Setagaya Tokyo Japan, g1281804@tcu.ac.jp
[2]Tokyo City University, Setagaya Tokyo Japan

Abstract: *Recently, Electronic Commerce on the Internet is getting increased. Thereby, Customers can browse the many products. Therefore, it is difficult that to select a product by customers. Moreover, it is said that interest of customers change depending on browsed products. However, recommendation system that considers these has not been study. The purpose of this study is Proposal of product recommendation system that correspond change short-term preference. We reveal purchase behavior on internet by interviews. We conceived the system from the employing purchase behavior. There are two important parts to the creating system from purchase behavior. First part is "needless information of customer". Second part is "utilization purpose". Additionally, we validated the effect of the created recommendation system. In conclusion, the result showed that "needless information of customer" and "utilization purpose" was good evaluation. However, this system has plural problems.*

Keywords*: Recommendation, Short-term preference, Utilization purpose, Needless information Content-based filtering*

JP17

THE PROPOSAL OF THE VIRAL MODEL OF INFORMATION WHICH IS CONSIDERING SOCIAL MEDIA INTERACTIVITY

Daisuke Sashida[1*], Shin-Ichiro Yokoyama[2] and Takeshi Kaneko[2]

[1]Tokyo City University, Setagaya, Tokyo, Japan g1181816@tcu.ac.jp
[2]Tokyo City University, Setagaya, Tokyo, Japan

Abstract**:** *The purpose of this paper is to propose the viral model of information that considers the use of social media of Japanese consumers. This research focuses on Japanese consumers and companies, treated as a subject of several social networking services (SNS). To clarify the factors to diffuse information on social media by get the data from literature research and interviews. It hypothesize that some changes occur in the action of a person of information reception by those factors. The author builds the viral model of information by using those factors and a covariance structure analysis. As a result of the present, the purpose of use of SNS and the information diffusion has found to be classified into three categories.*

Keywords**:** *Social media, Interactivity, Viral, Influencer, Quality of information*

JP18

RESEARCH ON THE QUANTIFICATION OF THE EFFECT OF INFORMAL COMMUNICATION THAT AIMS TO IMPROVE THE QUALITY OF COMMUNICATION

Hiroki Endo[1*], Takeshi Kaneko [2*], Shin-Ichiro Yokoyama[2*]

[1]Tokyo City University, Setagaya Tokyo Japan, Email: g1181807@tcu.ac.jp
[2]Tokyo City University, Setagaya Tokyo Japan

Abstract: *Currently, lack of communication in the workplace becomes a major issue. Therefore, the approach in informal communication is important to prevent the lack of communication in the workplace. However, the effect of informal communication is not clear. In addition, the influence on daily business is not clear. This study clarifies an effect of informal communication and evaluates the degree of the influence on daily business. Various good aspects against individuals and organizations can be expected when informal communication is active. In addition, it was found that the influence on daily business is decrease of stress and improvement of business efficiency. And, we hypothesized that non-active organization of informal communication and active organization of informal communication are different at business efficiency and stress. We evaluate the difference between the effects of the informal communication and the influence on daily business by experiment.*

Keywords: *informal communication, human relationship, workplace communication*

JP19

CLARIFICATION OF THE ELEMENT WHICH ACTS ON A BRAND LOYALTY

Hitoshi Saito[1], Shin-Ichiro Yokoyama [2], Takeshi Kaneko[2]

[1]Tokyo City University, Setagaya Tokyo Japan, g1181814@tcu.ac.jp
[2]Tokyo City University, Setagaya Tokyo Japan,

Abstract: *It is said that in a number of research it is important to true brand loyalty, including the behavioral and psychological aspects as a measure of loyalty. Research in the relationship between brand preference and brand image, that the factor of "sympathy for the brand" that increase the probability of preference has been demonstrated. However, from the perspective of brand loyalty has not been done. Because of the lack of versatility, and the purpose of this research are to clarify and to clarify the relationship between brand image and preference items and review of the factors, the elements acting on the brand loyalty.*

Keywords: *Brand loyalty, Brand image, Brand preference, Clarification*

JP20

CONSTRUCTION OF THE MEDIA CONTACT MODEL IN BUYING BEHAVIOR IN CONSIDERATION OF CHASM

Kai Iwasaki[1] and Takeshi Kaneko[2] and Shin-Ichiro Yokoyama[3]

[1]Tokyo City University, Setagaya-ku Tokyo Japan, E-mail:g1281806@tcu.ac.jp
[2]Tokyo City University, Tokyo Japan
[3]Tokyo City University, Tokyo Japan

Abstract: *This paper is a study which shows clearly how consumers collect the information about products at the time of the product purchasing. Such as a method to segment by individual buying behavior has become main stream in a recent marketing. Then, we paid our attention to chasm theory in this paper. We performed the fact-finding about the purchasing by the interview or the questionnaire to each of consumers classified according to chasm. For example, it is the method of information gathering about products. From a result, we clarified information and the media which contacted it when consumers were interested for a product in before and after chasm.. And the information and media which contact in order that consumers may do products understanding and may go to purchase were also clarified. By modeling them, we showed the index how we should approach it and how should make media strategy to each consumer.*

Keywords: *Chasm, Buying behavior, Advertisement, Media strategy, the method of information gathering*

JP21

THE PROPOSAL OF THE REVIEW SYSTEM AIMING AT THE INCREASE IN EFFICIENCY OF A REVIEW

Kohsuke Omori[1], Chika Kidokoro[2], Takeshi Kaneko[3], Shin-Ichiro Yokoyama[4]

[1] Tokyo City University, Setagaya Tokyo Japan, g1281809@tcu.ac.jp
[2] Tokyo City University, Setagaya Tokyo Japan
[3] Tokyo City University, Setagaya Tokyo Japan
[4] Tokyo City University, Setagaya Tokyo Japan

Abstract*: Users of Internet shopping have increased in recent years by the spread of the Internet. Many of the users who use the Internet shopping refer to the review about goods. But, there are many reviews on Internet. So, it is a problem that is to take time before user finds information was needed. In this research, we clarified the useful information which User thinks using interview. The purpose of this research is the proposal of the review system that effectively support the user in product selection. In addition, Sentences were classified into categories and polarity from the results of the interview.*

We made the system which can be searched for each keyword using "Tag Cloud". We implemented the system which we suggested using java language. As a result, all subjects were able to shorten the time to the product selection with this system.

Keywords*: classification system, review, increase in efficiency of information, tag cloud*

JP22

MODEL OF CONSUMER BUYING BEHAVIOR IN PROMOTIONAL MARKETING CONSIDERING THE PSYCHOLOGICAL BARRIER

Naoki Kawashima [1], Kyohei Morisaki [2], Takeshi Kaneko[3], Shin-Ichiro Yokoyama[4]

[1] Tokyo City University, Setagaya Tokyo Japan, g1281811@tcu.ac.jp
[2] Tokyo City University, Setagaya Tokyo Japan, g1281829@tcu.ac.jp
[3] Tokyo City University, Setagaya Tokyo Japan
[4] Tokyo City University, Setagaya Tokyo Japan

Abstract: *Recently, promotional marketing have been watched by the marketing researchers. It is said that consumers think uneasy and hesitation which is able to remove when consumers change to a unused products. It is said that if you can get remove the hesitation and anxiety, and expected effect buying of 39 to 44%. However, it is not clear promotional marketing method of choice for it to reduce the psychological barrier elements and entertain consumers. Purpose, the psychological barrier that occurs when consumers switch products is to clarify whether there is any element, and to quantify what can be a psychological barrier would reduce by promotional marketing. Then, to build a consumer buying behavior model. If we can build this model, it is possible to know the promotion that will fit the elements of a psychological barrier.*

Keywords: *promotional marketing, consumer-buying behavior, psychological barrier, uneasy and hesitation*

JP23

QUANTIFICATION OF THE AUTONOMY FORMATION STRUCTURE OF THE PERSON

Yasuhito Nakamura[1], Shin-Ichiro Yokoyama[2], Takeshi Kaneko[2]

[1]Tokyo City University, Setagaya Tokyo Japan, g1181829@tcu.ac.jp
[2]Tokyo City University, Setagaya Tokyo Japan,

Abstract: *The current social needs have diversified consumer. Therefore the human being who is in the battle front of the work judges it quickly how, and the autonomy-shaped human being that can act is demanded. There is the thing which an association between autonomy and workplace environment and suggested that an action to work give personal autonomy influence in the study on personal autonomy. But, there are few studies that showed the connection with the element which has an influence on the autonomy development and a processes of the personal autonomy development. Therefore the purpose of this study structures a process of the personal autonomy formation, and it is clarification of the influence that a necessary factor gives to the autonomy formation*

Keywords: *Autonomy, workplace, work, Human relations*

JP24

INTRODUCTION OF SUPPLY CAIN MANAGEMENT PROPOSED BY BUSINESS PROCESS MODELING APPROACH CONSIDERING BUSINESS CONTINUITY PLAN

Yuki Ihira[1] and Takeshi Kaneko[2] and Shin-ichiro Yokoyama[3]

[1]Tokyo City University, Setagayaku Tokyo Japan g1281805@tcu.ac.jp
[2]Tokyo City University, Setagayaku Tokyo Japan
[3]Tokyo City University, Setagayaku Tokyo Japan

Abstract: *Recently, it has attracted attention is Supply Chain Management (SCM). SCM can increase cash flow and cut cost. However, systems which are made to implement the SCM are often failed. According to previous research, these Causes of the failure can be solved by Business Process Modeling (BPM) approach. But there is also a problem that has not been resolved by previous research. In addition, after Earthquake East Japan, Business Continuity Plan (BCP) has been reviewed. Hence, the purpose of this study is to propose a procedure introduced SCM by BPM approach considering BCP.*

Keywords: *Supply Cain Management, Business Process Modeling, Business Continuity Plan*

JP25

A STUDY OF THE STRUCTURAL DESIGN OF EASY-TO-USE WEB STORES USING DETAILED ANALYSIS OF BUYING BEHAVIOR IN BRICK AND MORTAR STORES

Tomotake KARUBE[1*], Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC (Japan), k-tomotake-0815@akane.waseda.jp
Waseda University, JSQC (Japan), munechika@waseda.jp
Waseda University, JSQC (Japan), mo3@aoni.waseda.jp

Abstract: *Information and communications technology has developed rapidly. Therefore, many companies extend to market products through web stores. Web store customers use search functions and buying functions to find and purchase products.*

Web stores have a variety of products that users will want to search. A web store customer might be able to imagine exactly what product they want, but they could have difficulty finding it in the web stores. This leads to users feeling dissatisfied with the web store's usability. Therefore, improved usability of web stores is an important aspect of product promotion. However, this is rarely considered in the design and structure of a web store.

In this study, we will identify key elements of easy-to-use web store structure, as identified by web store users. Then, we will discuss the usability for elements of the structure. Following, by using the thought process of searching for products at a brick and mortar store (hereafter referred to as a real store), we will design the structure for web stores.

Keywords: *Process of thinking, Design of the structure, Usability, Imagination product, Desired product*

JP26

CLARIFICATION OF THE RELATIONSHIP BETWEEN WORK UNITS IN ANALYSIS METHODS FOR MEDICATION INCIDENTS

Masataka SANO[1], Masahiko MUNECHIKA[2]

Waseda University, JSQC (Japan),
[1]mo3@aoni.waseda.jp, [2]munechika@waseda.jp

Abstract: *Reduction of medical malpractice that threatens patients' safety is one of the most important issues in hospital administration. The Process-Oriented Analysis Method for Medical Incidents (POAM) has been proposed for the analysis of medication-related errors in an attempt to change the process of medication administration with an aim to decrease errors. An incident analysis scheme with 25 work elements is also used to detect problematic work methods.*

POAM comprises a model of medication administration that divides the process of medication administration into three categories: information, objects, and jobs. Another analysis method divides the process of medication administration more precisely into 25 work elements.

This study clarifies the relationship between POAM, which facilitates the extraction of direct error factors, and the analysis method employing work elements in order to develop guidelines for the analysis of medical incidents.

Keywords: *Process Oriented Analysis Method for Medication Incidents, Patient Safety, Work Method, Incident Analysis*

JP27

A STUDY ON GOAL-SETTING METHODS FOR PROBLEM-SOLVING IN HEALTHCARE

Tatsuro YOKAWA[1], Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC (Japan)
[1]tatsuro-yokawa@asagi.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *In order to implement quality-improvement initiatives in an organization, it is necessary to set goals to solve existing problems and, further, to measure the outcome of these initiatives in terms of quantitative indicators. However, a method that focuses on the overall business operations of a department toward systematic goal-setting has not been sufficiently studied. Thus, problem-solving in the healthcare industry at present is not effective. In this study, we examined the role that medical professionals play with regard to their relationships with others involved in the business. To clarify the required functions of the role, we extracted the minimum requirements of the management. By examining the inspection department of an organization as a case study, we proposed a method that uses management indicators to set goals for problem-solving by clarifying the roles within the department.*

Keywords: *Quality Management System, Management indicators, Management by Objectives, Plan-Do-Check-Act (PDCA)*

JP28

STRUCTURED PROCESS MODEL FOR PROVIDING REHABILITATION SERVICES IN A HOSPITAL

Masaaki KANEKO[1] and Masahiko MUNECHIKA[2]

[1]Department of Industrial & Systems Engineering, AOYAMA GAKUIN University, Fuchinobe 5-10-1, Chuo-ku, Sagamihara-shi, Kanagawa, 252-5258, Japan, kaneko@ise.aoyama.ac.jp
[2]Department of Industrial & Management Systems Engineering, WASEDA University, Okubo 3-4-1, Shinjuku-Ku, Tokyo, 169-8555, Japan, munechika@waseda.jp

***Abstract**: As healthcare quality assurance becomes a social issue, assuring the quality of rehabilitation services in a hospital is also needed. There are many previous studies for visualizing work process that is an essential activity for assuring the quality. However, no study focused on the rehabilitation services and proposed the method for visualizing the work process systematically considering the healthcare characteristics. In addition, the essential work processes to provide the rehabilitation services are common among hospitals. Therefore, after the standardized work process model is established, a hospital can visualize its own work processes effectively by utilizing the model, and also can specify the problems on its work processes from the differences between the model and its own work processes. To realize the above situation, this study proposes the standardized and structured process model for providing the rehabilitation services in a hospital. Then, the effectiveness of the proposed model is confirmed by applying it into hospital A.*

***Keywords**: Healthcare quality assurance, Process design, Process improvement, Process management, Quality management system*

JP29

THE ESTIMATION OF COMPARING THE MINIMUM DETECTABLE VALUE WITH GIVEN VALUE FOR POISSON DISTRIBUTED MEASUREMENTS

Tomohiro Oikawa[1*], Yusuke Tsutsumi[2], Hironobu Kawamura[3] and Tomomichi Suzuki[4]

[1]Tokyo University of Science, Japan (JSQC)
Email: t.oikawa@chic.ocn.ne.jp
[2]Mitsubishi Tanabe Pharma Corporation, Japan (JSQC)
Email: tsutsumi.yusuke@ms.mt-pharma.co.jp
[3]Tokyo University of Science, Japan (JSQC)
Email: kawamura@ia.noda.tus.ac.jp
[4]Tokyo University of Science, Japan (JSQC)
Email: suzuki@ia.noda.tus.ac.jp

***Abstract:** There is ISO 11843 series as a standard concerning the capability of detection. However, in ISO 11843, evaluation of how to derive the capability of detection in the case of following Poisson distribution is not fully performed. Then, in this paper, estimates the method which carries out normal approximation of the obtained measured value using the capability of detection drawn by how to derive exact detection capability, and it applies to ISO 11843 Part 4 "Methodology comparing the minimum detectable value with given value" for Poisson distributed measurements. Specifically the detection judging standard of ISO 11843 Part 4 is investigated and, it compares with exact capability of detection, it is evaluated whether it is a method which can be judged correctly. In addition, a number of replication of measurements on each reference material in assessment of the capability of detection also estimates that how many detection judging standards change.*

***Keywords:** Capability of detection, ISO 11843, Poisson distribution, Measurement method*

JP30

SPACIOTEMPORAL INTERPOLATION OF TEMPERATURE DATA IN TOKYO

Taro Nigorikawa[1*], Tomomichi Suzuki[2], Hironobu Kawamura[3]

Tokyo University of Science, JSQC (Japan)
[1]j7412620@ed.noda.tus.ac.jp, [2]suzuki@ia.noda.tus.ac.jp, [3]kawamura@ia.noda.tus.ac.jp

Abstract: *UHI (Urban Heat Island) is aggravating in recent years. When analyzing UHI, there is a problem. It is processing of data. Outliner and missing value are included in the data measured with the measuring instrument. If the data including these values are analyzed, there is a possibility of bringing a mistaken result. To avoid this, it is necessary to delete outliner and to interpolate missing value. In this research, two kinds of interpolation method to consider time and space are proposed. By two methods of proposing, it performs looking for similar temperature data. The first method is that similar data are looked for other observation point to fix time. The second method is that similar data are looked for observation point with missing value to fix space. These methods are affected by period of interpolating. When these methods are applied, period of interpolating is set up to one day. And these methods are evaluated.*

Keywords*: Statistic, Urban Heat Island, Data Process, Compare*

JP31

THE METHODS FOR MANAGEMENT OF NURSING PROCESS

Satoshi Izumisawa[1*], Masahiko MUNECHIKA[2], Masataka SANO[3]

Waseda University, JSQC (Japan)
[1]apprenditus@ruri.waseda.jp, [2]munechika@waseda.jp, [3]mo3@aoni.waseda.jp

Abstract: *Due to the several errors that have occurred in medical institutions in recent years, concern about the quality of health care is increasing. Therefore, it is important for medical institutions to ensure high quality of nursing service, which plays an important role in supporting many patients who have been hospitalized. To ensure the quality of nursing service that is served in medical institutions, it is necessary to build a PDCA (Plan-Do-Check-Act) cycle and structure the daily management for the continuous improvement in nursing process.*

However, due to the complexity of the nursing, there is no definite method for the daily management in nursing process. Further, the fact that nursing service depends on a patient's condition makes it difficult to define medical indicators.

In this study, a method to define the medical indicators on nursing process and manage daily nursing process by using these indicators have been proposed. Based on this proposal, a methodology for the daily management of nursing in medical institutions is developed.

Keywords: *Quality assurance, Visualizing, Nursing Process, Diagnosis and Treatment Assistance*

JP32

A STUDY OF FACTORS CONTRIBUTING TO THE USE OF SEASONING IN JAPAN

Chiaki Hara*, Masahiko Munechika, Masataka Sano

Waseda University, JSQC (Japan), chiaki-west@toki.waseda.jp

Abstract: *In Japan, changes in eating habits usually occur as the result of changes in the environment or fashionable preference changes. These fluctuating eating habits affect the amount of ingredients and seasonings used in preparing food. Companies that supply these ingredients and seasonings are affected, and because of this, it is necessary for them to properly capture the changes that have occurred, which many have accomplished through research of eating habits. However, using the traditional methods at their disposal, factors accounting for these changes in eating habits are not sufficiently revealed. Therefore, narrowing down these factors is not possible, and we are left without a solution for which measures to take in order to adjust the amount of seasoning used.*

In this study,we determined the change by directly questioning consumers. We were then able to comprehend the factors contributing to the amount of seasoning used by considering which changes occured in all situations. Using soysauce as an example, we compared the relationship between each factor and soysauce by menu analysis and then identified factors affecting the amount of soysauce used.

Keywords: *Understanding trends, Marketing, Customer Satisfaction*

JP33

DEVELOPMENT OF A MODEL FOR DESIGNING MANAGEMENT INDICATORS FOR HEALTHCARE OPREATION PROCESSES

Satoshi Ito[1]*, Satoko Tsuru[2], Ryoko Shimono[3], Shogo Kato[4], and Yoshinori Iizuka[5]

The University of Tokyo, Hongo, Bunkyo Prefecture, Tokyo, Japan
[1]Email:s.ito@tqm.t.u-tokyo.ac.jp
[2]Email:tsuru@tqm.t.u-tokyo.ac.jp
[3]Email:shimono@tqm.t.u-tokyo.ac.jp
[4]Email:kato@tqm.t.u-tokyo.ac.jp
[5]Email:iizukay@tqm.t.u-tokyo.ac.jp

Abstract: *In order to assure the quality of healthcare operation processes, we need appropriate management indicators that considering the unique characteristics of hospitals. In this paper, we propose a model for designing management indicators that consider these characteristics. We first identified what we have to manage in healthcare operation processes and how to evaluate the success of these processes, including what we have to measure in order to assess each healthcare operation process. We then applied the model to the clinical test process and a skillful clinical examination technician estimated that the result is appropriate to assure good quality service.*

Keywords: *Quality Management System, Total Quality Management, Process Approach*

JP34

A METHOD FOR IMPROVING CLINICAL PROCESSES BY PROVIDING FEEDBACK ON STANDARD CLINICAL GUIDELINES BASED ON ANALYSIS OF CLINICAL DATA

Ken MATSUOKA[1*], Satoko TSURU[2], Yukikiyo KURODA[3], Shogo KATO[4], Ryoko SHIMONO[5], Yoshinori IIZUKA[6]

[1]Graduate School of Frontier Science, the University of Tokyo, Kashiwanoha, Kashiwa, Chiba
Email: matsuoka@tqm.t.u-tokyo.ac.jp
[2]School of Engineering, the University of Tokyo, Hongo, Bunkyo, Tokyo, Email: tsuru@tqm.t.u-tokyo.ac.jp
[3]School of Engineering, the University of Tokyo, Hongo, Bunkyo, Tokyo, Email: kuroda@tqm.t.u-tokyo.ac.jp
[4]School of Engineering, the University of Tokyo, Hongo, Bunkyo, Tokyo, Email: kato@tqm.t.u-tokyo.ac.jp
[5]School of Engineering, the University of Tokyo, Hongo, Bunkyo, Tokyo, Email: shimono@tqm.t.u-tokyo.ac.jp
[6]School of Engineering, the University of Tokyo, Hongo, Bunkyo, Tokyo, Email: iizukay@tqm.t.u-tokyo.ac.jp

***Abstract**: We developed a method for improving clinical processes by providing feedback on standard clinical guidelines based on analysis of clinical data. The feedback is generated through the analysis of the relationships between individual data and health outcomes. In order to create structures to analyze many diverse clinical practices, we devised a "Clinical Process Chart for Analysis" to observe which options were selected in terms of clinical practices. We accumulated available knowledge in each hospital by compiling findings obtained in the framework of this analysis and by giving feedback on the standard clinical practices in each hospital. In this manner, we confirmed that our method can yield fruitful knowledge to yield benefits in patients' quality of life.*

***Keywords:** Cancer Care, Healthcare, Clinical Pathway, Analysis of Medical Records*

JP35

OPTIMAL TIME SCALE ANALYSIS OF FIELD RELIABILITY DATA

K. Takeshita[1] and W. Yamamoto[2]

[1]University of Electro-Communications, Japan, k.takeshita@uec.ac.jp
[2]University of Electro-Communications, Japan, watalu@inf.uec.ac.jp

***Abstract:** The time scale need not be chronological if a failure occurs based on the cumulative damages suffered from its usage or exposure to some risks. The technically correct time scale need not be supported by the observed field reliability data. Duchesne and Lawless (2002) proposed a semiparametric estimator of the time scale which combines multivariate lifetime data, which is fairly useful in that it does not depend on the distributional assumption of the lifetimes on the estimated scales. We first conduct a simulation study to investigate the properties of time scale models and the sample properties of their estimates. Then we apply their estimator, with slight extension, to a problem of finding a suitable time scale for field reliability data and find that it is useful even there are prior knowledge about what the time scale should be.*

***Keywords:** Optimal lifetime scale, field reliability data, counting process, linear usage functions*

JP36

A STUDY ON INTERNAL AUDIT ITEMS AND SUBJECTS IN HOSPITALS

Ryosuke WATANABE[1*], Masahiko MUNECHIKA[2], Masataka SANO[3]

[1]Waseda University, JSQC (Japan), rw-last.com@akane.waseda.jp
[2]Waseda University, JSQC (Japan), munechika@waseda.jp
[3]Waseda University, JSQC (Japan), mo3@aoni.waseda.jp

Abstract: *Many hospitals are now introducing a Quality Management System (QMS) in order to ensure high quality healthcare service. Safety is a key element of quality services to which hospitals attach great importance. Therefore, it is especially important for hospitals to implement healthcare safety management in QMS.*

An internal audit can be used to promote the standardization of healthcare safety management in QMS. However, in the traditional internal audit, which is derived by trial and error, the auditor audits items. Therefore, at present, audit items are often determined by the subjective judgment of an auditor, leading to variation in the results of these audits.

In this study, we propose a method for standardizing internal audits of hospital operations and for deriving the internal audit items to be used. Unlike conventional methods, we propose an effective audit method and audit items that are realistic to promote the standardization of services. Therefore, we aim to improve the safety of medical care.

Future issues include examining auditing methods applied to hospitals, the elaboration of audit items, and so on.

Keywords: *Quality Management System (QMS), Internal audit, Process Flow Chart (PFC), Audit items, Audit Subjects*

JP37

IMPROVEMENT OF WORK SENSITIVITY IN KEYBOARD INPUT OPERATION BY NEUROFEEDBACK

Kazuki Takeuchi[1*], Raita Ohori[2], Fumiaki Saitoh[3], and Syohei Ishizu[4]

Aoyama Gakuin University 5-10-1 Fuchinobe, Sagamihara City, 252-5258, Japan,
[1]Email:C5611161@aoyama.jp
[2]Email:C5610167@aoyama.jp
[3]Email:saitoh@ise.aoyama.co.jp
[4]Email:ishizu@ise.aoyama.ac.jp

Abstract: *The false work caused by artificial failure is called human error. When human error happens, loss may happen. It is important that we take measures of human error to prevent loss from being generated. There is the state that is hard to do human error and easy to do human error by the mental condition of the worker. The purpose of this study is to reduce human error in the input work from a keyboard to a PC by the worker knowing their own state at the time of the work. So I let the worker work in the state that the worker concentrated. I examined difference in two work sensitivity by the experiment of this study and analyzed it whether human error measures were possibility. I showed the effectiveness of neurofeedback in the input work from a keyboard to a PC.*

Keywords: *Emotion spectrum analysis, electroencephalogram (EEG), neurofeedback, distraction, human error.*

JP39

CONSTRUCTION OF QUALITY FUNCTION DEPLOYMENT ONTOLOGY INVOLVING LOGICAL RESTRICTION AMONG QUALITIES

Ken Tomioka[1], Fumiaki Saitoh[2] and Syohei Ishizu[3]

Aoyama Gakuin University 5-10-1 Fuchinobe, Sagamihara City, 252-5258, Japan
[1]c5612129@aoyama.jp
[2]saitoh@ise.aoyama.ac.jp
[3]ishizu@ise.aoyama.ac.jp

Abstract**:** *The primary support tool in QFD does not consider the logical conditions between qualities. Furthermore, they do not support deployment in which conditional judgment of design quality and manufacturing processes is important. Ontology is constructed from classes, properties, and constraints. Ontology editors for the construction of ontologies are equipped with inference functions that allow the reclassification of classes based on constraints, allowing for deployment that incorporates conditional judgment. We propose to construct QFD ontology for involving logical restriction among qualities for use as a QFD support tool. In particular, we will develop a tool that supports mechanism and material deployment, FMEA-QA table deployment, and horizontal deployment.*

Keywords**:** *QFD, Ontology, Logical restriction, FMEA, Horizontal Deployment*

JP40

ALGORITHM FOR A FAMILY EVALUATION ATTRIBUTES SETS REPRESENTING CUSTOMER PREFERENCE RELATION

Takuya Mogawa, Fumiaki Saitoh, and Syohei Ishizu

Aoyama Gakuin University 5-10-1 Fuchinobe, Sagamihara City, 252-5258, Japan , c5612132@aoyama.jp, saitoh@ise.aoyama.ac.jp, ishizu@ise.aoyama.ac.jp

Abstract: *In the corporate management, product developments become complex and diversified. It is important to find out evaluate attributes which represent customer preference relation. Some products have been evaluated within individual market segments according to one set of evaluation attributes. However, evaluation of a product that straddles multiple market segments cannot be performed according to a single attributes set. It is necessary that products are evaluated by a family of attributes sets and to add attributes when decided attributes sets cannot represent customer preference relation. We propose how to add a new attribute when attributes sets can't represent customer preference relation and an algorithm for finding evaluation attributes sets family through the addition of attributes required to express customer preference relations.*

Keywords: *customer preference relation, accuracy of approximation, a family of evaluation attributes sets, multi-attributes decision-making, rough set theory*

JP41

DESIGNING THE STRUCTURE OF A KNOWLEDGEBASE FOR THE PREDICTION AND PREVENTION OF TROUBLE IN THE HEALTHCARE PROCESS

Daisuke Okamoto[1]*, Satoko Tsuru[2], Shogo Kato[3], Ryoko Shimono[4], and Yoshinori Iizuka[5]

The University of Tokyo, Hongo, Bunkyo Prefecture, Tokyo, Japan
[1]Email:okamoto@tqm.t.u-tokyo.ac.jp, [2]Email:tsuru@tqm.t.u-tokyo.ac.jp, [3]Email:shimono@tqm.t.u-tokyo.ac.jp
[4]Email:kato@tqm.t.u-tokyo.ac.jp, [5]Email:iizukay@tqm.t.u-tokyo.ac.jp

Abstract: *The purpose of this study is to apply acquired knowledge regarding trouble to the prediction and prevention of trouble in the healthcare process. In this paper, as the process of knowledgebase application has not been considered sufficiently in previous study, the authors conceptualize and elaborate on such a process. By applying the method to real cases, the authors clarify their method of selecting the attributes of the process and forming cause-and-effect chains.*

In addition, the authors design the structure of a knowledgebase for countermeasures. Countermeasures are so complicated that they cannot be described simply. To organize them systematically, the authors design the structure of countermeasures. The knowledgebase for countermeasures was based on it. In order to verify the validity of the knowledgebase, the authors applied the structure of the knowledgebase to real cases. The knowledgebase displayed applicability to various cases.

Keywords: *Trouble Prevention, Knowledge Structure, Healthcare Process, Healthcare Safety*

JP42

AN ASSESSMENT SYSTEM FOR PREVENTING PATIENT FALLS BASED ON SURVIVAL ANALYSIS

Shogo Kato[1*], Fumio Fukumura[2], Satoko Tsuru[3], and Yoshinori Iizuka[4]

[1]The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, E-mail: kato@tqm.t.u-tokyo.ac.jp
[2]Iizuka Hospital, 3-83 Yoshio-Machi, Iizuka City, Fukuoka, 820-0018, E-mail: ffukumurah1@aih-net.com
[3]The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, E-mail: tsuru@tqm.t.u-tokyo.ac.jp
[4]The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, E-mail: iizukay@tqm.t.u-tokyo.ac.jp

Abstract: *Medical accidents are generally classified into two types: accidents caused by healthcare staff while providing services and accidents caused by patients' actions. Among the latter, patient falls remain a significant problem. Our research goal is to establish a methodology for preventing patient falls that enables us to identify situations that are dangerous to each patient and determine concrete countermeasures to prevent dangerous situations on the basis of the assessment results.*

In this paper, we first present a risk structure model developed by analyzing actual cases. Second, we evaluate each risk factor via survival analysis using actual case data from an acute hospital. Third, we develop an assessment system that enables us to assign a total risk grade and to set priorities among candidate countermeasures for each patient. Finally, we evaluate the validity of our assessment system, using past cases of patient falls other than cases that were not used for system development.

Keywords: *cox proportional hazard model, medical accident, safety management, quality in healthcare, risk management*

JP43

CONSTRAINED BOUNDED ADJUSTMENT SCHEME

Hironobu Kawamura[1], Kazuishi Horii[2] and Tomomichi Suzuki[3]

Department of Industrial Administration, Tokyo University of Science, 2641, Yamazaki, Noda City, 278-8510, Japan
[1]E-mail: kawamura@ia.noda.tus.ac.jp
[2]E-mail: j7410633@ed.noda.tus.ac.jp
[3]E-mail: suzuki@ia.noda.tus.ac.jp

Abstract: *In the chemical process, a process adjustment such as feedback control is frequently used to reduce process variability. Although a system of repeated adjustment is desirable in many cases, the repeated adjustment would be inconvenient (e.g., if adjustment cost was high). In such situation, dead band schemes, also called bounded adjustment schemes, are useful to reduce the number of adjustments. Although the manipulated variable is sometimes constrained for safe operation and so on, these bounded adjustment schemes cannot be applied to the situation. Therefore, this paper presents the determination method for boundary lines on the basis of costs when the process has the constraint on the manipulated variable. Specifically, tables for calculating the positions of the boundary lines are provided in terms of the cost of being off target and the adjustment cost in order to make for practitioners to describe the boundary lines easily.*

Keywords: *Statistical process control, dead band, fixed cost, time series, chemical process*

JP44

DESIGN OF HOSPITAL OPERATION PROCESS -IDENTIFICATION OF SURGERY PROCESS MODULES-

Ryoko SHIMONO[1]*, Satoko Tsuru[2], and Yoshinori Iizuka[3]

The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan
[1]Email:shimono@tqm.t.u-tokyo.ac.jp, [2]Email:tsuru@tqm.t.u-tokyo.ac.jp, [3]Email:iizukay@tqm.t.u-tokyo.ac.jp

Abstract: *In order to assure quality with limited available resources, hospitals have to examine operation processes. An operation process at a hospital is a process for delivering healthcare services to patients with consuming resources in a hospital. Since healthcare services have characteristics such as patients' variation, a hospital operation process is complicated. In order to examine complicated operation process, it is useful to understand operation process as a connection of "modules". In terms of operation process, modules can be defined as functions to achieve a purpose of the process. In this research, we define modules composing a surgery process (surgery process modules). We define surgery process modules by function deployment of surgery process aims to achieve quality assurance with resource consumption efficiently. Finally we test the model by applying it to surgery operational process of Hospital A.*

Keywords: *Quality of Healthcare, Process Design, Process Modeling, Process Approach*

JP45

A STUDY ON DECISION OF SEGMENTATION THRESHOLD FOR MULTI ATTRIBUTES

Yo Takahashi[1*], Hideo Suzuki[2]

[1]Keio University, Kanagawa, JSQC (Japan), swallow2yo@a5.keio.jp
[2]Keio University, Kanagawa, JSQC (Japan), hsuzuki@ae.keio.jp

Abstract**:** *Along with the spread of the Internet, the marketing size of internet mail-order companies has been increasing. Customers can be divided into several characteristic groups on the basis of their purchasing records and tendencies of site-viewing. The purpose of this study is to construct a method to classify customers from the two viewpoints; Monetary and Frequency. By classifying customers from several viewpoints, companies can conduct more suitable promotion activities for customers' characteristics. Assuming that companies classify customers into several groups and conduct promotion activities depending on customers' characteristics, the effectiveness of the promotion activities vary with the group. Therefore, it is not appropriate to evaluate the effectiveness of segmentation by Accuracy rate, because it considers all the customers' value equally regardless of their rank. We evaluate the effectiveness of the segmentation considering the value of customers for companies, and propose the method how companies identify valuable customers preferentially. The proposed approach is validated by using real customer purchase data.*

Keywords**:** *Marketing, Threshold, Multi-Attribute, Segmentation Method Logistic Regression Model*

JP46

THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND ABILITY OF THE EXPERIMENT

Atsushi Horiguchi [1*], Tomomichi Suzuki [2], Hironobu Kawamura [3], Akira Kotani[4], Yuzuru Hayashi[5]

[1]Tokyo University of Science, Chiba, j7412623@ed.noda.tus.ac.jp
[2]Tokyo University of Science, Chiba, suzuki@ia.noda.tus.ac.jp
[3]Tokyo University of Science, Chiba, kawamura@ia.noda.tus.ac.jp
[4]Tokyo University of Pharmacy and Life Science, Tokyo, kotani@toyaku.ac.jp
[5]Teikyo Heisei University, Chiba, y.hayashi@thu.ac.jp

Abstract: *Various studies have been made until now to evaluation of academic achievement and the ability to do experiment. However, there are a few studies considered that the relationship between the two. But they are possible that there is some relationship. In this study, we deal with achievement test and chemical experiment which were done by college students. And, we create some variables based on data. We consider several hypothetical models using them and analyze them using multiple regression analysis and structural equation model to verify what kind of relationship existence.*

Keywords: *accuracy, precision, deviation*

JP47

VISUALIZATION OF NONLINEAR MULTIDIMENSIONAL QUALITY DATA USING SELF-ORGANIZING MAP AND BOOTSTRAP

Fumiaki SAITOH[1] and Syohei ISHIZU[2]

Aoyama Gakuin University, Department of Industrial and Systems Engineering, JSQC (Japan),
5-10-1, Fuchinobe, Chuo-ku, Sagamihara, Kanagawa, 252-5258, Japan
[1]saitoh@ise.aoyama.ac.jp, [2]ishizu@ise.aoyama.ac.jp

Abstract: *Visualization of defective products data is one of the very important processes on practical use of a supervisors experience and knowledge. The traditional methods of visualization or discernment have the problem of not functioning effectively to multidimensional data with multicollinearity or nonlinearity. In this paper, we propose the methodology of quality data visualization using robust Self-organizing Map (SOM) for multicollinearity or nonlinearity. By the proposed method, the aria of a control limit is estimated through re-sampling of the defective products or abnormalities data based on a bootstrap. The control limit domain of nonlinear multidimensional quality data is appropriately visualized by our approach. The effectiveness of this method was confirmed through experiment of visualization task of using artificial nonlinear multidimensional quality data. Experimental result shows that a user can understand data distribution intuitively, and further suggest that our method contribute to discovery of abnormalities or defective products.*

Keywords: *Data Visualization, Nonlinear Multidimensional Data, Self-organizing Map, Bootstrap, Control Limit*

JP48

ESTIMATION OF ORDERED MEANS OF TWO NORMAL DISTRIBUTIONS WITH ORDERED VARIANCE-PART II (NUMERICAL STUDY)

YUAN-TSUNG CHANG[1], NOBUO SHINOZAKI[2]

[1]Department of Social Information, Faculty of Studies on Contemporary Society
Mejiro University, Tokyo, JAPAN, JSQC (Japan)
E-mail: cho@mejiro.ac.jp.
[2]Faculty of Science and Technology, Keio University, Yokohama, JAPAN, JSQC (Japan)
E-mail: nshino@ae.keio.ac.jp.

Abstract: *We consider the problem of estimating the ordered means of two normal distributions with unknown ordered variances. We discuss the estimation of two ordered means, individually, in terms of stochastic domination and MSE (mean squared error). We show that in estimating the mean with larger variance, the usual estimator is improved upon uniformly. However, in estimating the mean with smaller variance, the usual estimator isn't be improved upon even under MSE. We also discuss simultaneous estimation problem of two ordered means when unknown variances are ordered. Finally, we compare the improved estimators with standard one by numerical evaluation and illustrate the behavior of improved estimators.*

Keywords: *Restricted MLE, unbiased estimator, Graybill-Deal estimator, stochastic dominance.*

JP49

PREDICTING THE TEMPERATURE DISTRIBUTION OF A PIECE OF METAL IN THE CRUSHING PROCESS OF HOME ELECTRICAL APPLIANCE

Kouta Hayashi[1], Ken Nishina[2], Naru Ishii[2], Toshinori Sugawara[3], Masashi Ohnishi[3] and Hisashi Kubota[3]

[1]Department of Techno-Business Administration, Graduate School of Engineering,
Nagoya Institute of Technology,
Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan
E-mail: cjk19523@stn.nitech.ac.jp
[2]Graduate School of Engineering, Nagoya Institute of Technology
[3]Green Cycle Corporation, Showa-cho, Minato-ku, Nagoya 455-0026, Japan

Abstract*: In this study, the heat control system of the crushing process in an appliance recycling plant is addressed. A most serious issue in the crushing process is the accompanying heat generation. A prediction system of the temperature distribution is proposed. In the analysis process it can be shown that the lognormal distribution can be applied and the maximum temperature in a piece of metal has a strong positive correlation with the average temperature of a piece of metal. The parameters of the lognormal distribution can be predicted by a regression model composed of some parameters of the crushing system and then the average temperature can be transformed to the maximum temperature. In addition, the validity of the proposed prediction system is evaluated.*

Keywords**:** *lognormal distribution, regression model, heat generation, validity of prediction*

KAZ01

IMPLEMENTATION OF EFQM EXCELLENCE MODEL IN MUNICIPALITY OF ASTANA CITY: METHODICAL FINDINGS AND PRACTICAL BENEFITS

Azat ABDRAKHMANOV, Oleg KAINAZAROV, Lyudmila TSINOVKINA

International Association of Quality Managers and Auditors (IAQMA), 299 Baizakov str, Almaty, Kazakhstan
E-mail: Abdrakhmanov.az@gs1.kz, Kainazarov.o@standard.kz

Abstract: *In order to gain external assessment of Excellence Model implemented in Municipality of Astana, Republic of Kazakhstan (further referred to as Akimat) the application was submitted to EFQM office (Brussels, Belgium) for assessment of compliance with the "Recognized for Excellence" Model level. To ensure honest and impartial assessment of the organization an EFQM excellence assessor team was created. The main goal of planned assessment activity was identifying strengths and areas for improvement of the organization based on assessor conclusions and score evaluation in line with the model criteria. The assessment demonstrated a convincing and positive dynamics in development of Astana city.*

Keywords: *Public Services, Excellence Model, EFQM, Assessment*

KAZ02

IMPLEMENTATION OF IMPROVEMENT PROJECTS WITHIN QUALITY MANAGEMENT SYSTEM OF A MEDICAL UNIVERSITY: METHODICAL APPROACHES AND STRATEGIC GOALS

Tolebay RAKHIPBEKOV[1] and Azat ABDRAKHMANOV[2]

[1]National Medical University of Semey, 103 Abay str, 071400, Semey, Kazakhstan
E-mail: lubo44ka@mail.ru
[2]International Association of Quality Managers and Auditors (IAQMA), 299 Baizakov str, Almaty, Kazakhstan
E-mail: abdrakhmanov.az@gs1.kz

Abstract: *The paper describes practical aspects of development and implementation of improvement projects aimed at education service quality improvement. All the projects were implemented in full compliance with the development strategy of State Medical University of Semey, Kazakhstan. Successful implementation of improvement projects has enabled the organization to considerably increase the level of theoretic knowledge and practical competencies of students. The project teams have developed and applied modern methodical approaches to achievement of organizational excellence. Based on experience gained and study of the best practices through benchmarking a number of practical recommendations have been developed by the authors for universities in terms of enhancement of effectiveness and efficiency of new improvement projects.*

Keywords: *Education Services, Quality Management, Commitment to Excellence*

KAZ03

APPLICATION OF EFQM EXCELLENCE MODEL AS A PRECONDITION OF GLOBAL LEADERSHIP AND COMPETITIVENESS OF MEDICAL ORGANIZATIONS

Abay BAIGENZHIN, Azat ABDRAKHMANOV, Englik KADIROVA, and Zhanat NURAZKHANOVA

National Science and Medical Research Center (NSMRC), 42 Abylaikhan str, Astana, Kazakhstan
E-mail: zhnurazkhanova@mail.ru
International Association of Quality Managers and Auditors (IAQMA), 299 Baizakov str, Almaty, Kazakhstan
E-mail: abdrakhmanov.az@gs1.kz

Abstract: *This paper includes results of 5year experience of a modern multi sectoral medical organization of Kazakhstan – National Science and Medical Research Center JSC relating transition from Quality Management System (ISO 9001:2008) to EFQM Excellence Model. Authors have used modern methodical approaches to achieve organizational excellence and higher satisfaction of all the stakeholders. To complete established tasks organizational strategy, quality policy and objectives were reviewed as well as Misson and Vision. Evaluation of organizational achievements was performed through application of BSC (balanced score card). A number of approaches have been implemented within the organization based on EFQM fundamental concepts of excellence and criteria of the excellence Model. The business results of the medical organization were assessed through RADAR logic application.*

Keywords: *Medical Services, Leadership, Excellence Model, Self-assessment*

KSQ01

INTERNATIONAL COMPARISON OF PRODUCTIVITY AND EFFICIENCY OF PAY-TV OPERATORS USING FIRM LEVEL DATA

Yonghee Kim[1] , Jeongil Choi[2] , Sanghyung Ahn[3], Younsung Kim[4]

[1]Graduate School of Business Administration, Soongsil University
Email: yh.kim@ssu.ac.kr
[2]School of Business Administration, Soongsil University, Seoul, Korea.
Email: jichoi@ssu.ac.kr
[3]Graduate School of Business Administration, Seoul National University
Email: shahn@snu.ac.kr
[4]School of Business Administration, Inha University, Incheon, Korea.
Email: keziah@inha.ac.kr

Abstract: *This study is a comparative analysis on the efficiency and productivity of major pay-tv operators worldwide from 2007 to 2010 using DEA and Malmquist techniques and firm-level data. A total of thirty-six operators in ten countries have been examined for this purpose. According to the results of the DEA analysis, the efficiency of scale was higher than technical efficiency, which demonstrated that the optimal size of a business had a relatively greater impact in the calculations. As for the Malmquist analysis, the improvement in efficiency based on the Productivity Growth Index was similar for Efficiency Change Index and Technology Change Index, but it was found that changes in the Technology Change Index also produced changes in productivity. This implies that productivity enhancement in operators was more influenced by the external environment rather than internal business capacity. The level of efficiency improvement between operators showed little difference. Going forward, considering there is always room for inefficiency due to changes in a company's management, operations or related industry markets, operators must continue to devote efforts to improve productivity. This calls for preemptive efforts by both the government and businesses.*

Keywords: *DEA, Efficiency, Malmquist, Pay-TV Operators, Productivity,*

KSQ02

A STUDY ON SHOPPING VALUE AND PERFORMANCE IN ONLINE AUCTIONS IN KOREA

Chul-Ho Cho[1*]

[1]Daegu Hanny University, Korea (KSQM), chcho@dhu.ac.kr

Abstract: *In this research, we examined the relationship among service quality, shopping value, customer satisfaction, and reuse intention in online auctions in Korea. We applied path analysis model to test the hypotheses and research model. As a result of this study, service quality factors affect shopping value and customer satisfaction, and both of shopping value and customer satisfaction affect reuse intention respectively and significantly. Also shopping value affects customer satisfaction significantly. Specifically, shopping value was empirically confirmed as one of the important factors preceding customer satisfaction and reuse intention in online auctions in Korea. Therefore, this study shows that shopping value is important factor that managers should emphasize in order to encourage shoppers' satisfaction and performance.*

Keywords: *Online auction; Service quality; Shopping Value; Satisfaction; Structural equation model*

KSQ03

DEVELOPING R&D EVALUATION MODEL: BUSINESS ASPECT

Hyun-Jin Yeo[1], Sae-Bom Lee[1], Ju-Young Han[1], Sang-Chan Park[1], Sang-Chul Lee[2], Kwang-Hyuk Im[3]

[1] School of Management, Kyung Hee University, Seoul, Korea
Email: {yeochi79, spring}@khu.ac.kr, sd_o_bs@naver.com, sanchanpark@paran.com
[2] Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr
[3] Department of Electronic Commerce, Pai Chai University, Daejeon, Korea
Email: khim@pcu.ac.kr

Abstract: *The purpose of this research is to develop a model evaluating R&D business validation with Korean patent data for invest decision making by four modules: market, growth pattern, competitive, and financial. In order to evaluate company's R&D technology business value, we clarify nine major BMC(Business Model Components) by classify keywords within patent specification from Korean patent database: Value proposition, Customer Segments, Channels, Customer relationships, Key activities, Key resources, Key partnerships, Cost structure, and Revenue stream. With above nine components, we develop four step modules (Market, Growth Pattern, Competitive, and Financial) to evaluate company's R&D business validity. This research utilizes Korean patent data for the evaluation. The results indicate that a R&D business validity evaluation analysis is modulated with four modules: market, growth pattern, competitive, and financial. Analyzing Korean patent data, one could find that R&D technologies have common business components those are categorized to nine BMC(Business Model Components), and each four modules have an effect to future business value of R&D technology.*

Keywords*: R&D, Business Validity, Model development*

KSQ04

CORRECTIVE ACTION STRATEGY FOR SERVICE FAILURE BASED ON SWOT ANALYSIS

Hyuck Moo Kwon[1] and Agung Sutrisno[2]

[1]Department of Systems Management and Engineering, Pukyong National University, Busan, Republic of Korea, E-mail: iehmkwon@pknu.ac.kr
[2]Department of Mechanical Engineering, Sam Ratulangi University, Manado, Indonesia,
E-mail: a6un6sutrisno@yahoo.com

Abstract: *Service FMEA may yield several possible corrective actions for each failure mode with large RPN. Corrective actions for each service failure are usually interrelated with the customers and environmental elements of the service system. SWOT analysis can provide an effective way to analyze the inner and outer environmental impacts for each corrective action. In this paper, we suggest a way for selecting and ranking corrective strategy in service operation based on SWOT analysis. Every candidate of corrective action strategy is ranked and evaluated on the basis of the impact factors of the SWOT variables, correlation between possible corrective actions and SWOT variables, and RPN of service failures. The most desirable set of corrective actions is selected on the basis of the preference score of each corrective action, required resources and budgetary allowance. The proposed methodology is demonstrated with an illustrative example.*

Keywords: *Service FMEA, RPN, SWOT analysis, Impact Factor, Correlation, Preference Score.*

KSQ05

CHOICE CHANGE IN FUTURE CONTEXT: FOCUSING ON TEMPORAL CONSTRUAL THEORY

Jun-Sik, Kwak[1], Kwang-Ho, Ahn[2]

[1]Dongseo University, Korea(KSQM), Email: no1marketer@gdsu.dongseo.ac.kr
[2]Inha University, Korea(KSQM), Email: ahnkh@inha.ac.kr

Abstract: *When asymmetric or relatively inferior new brand (referred to as decoy brand) newly enters the market, market share of existing brands similar to the decoy brand tends to increase rather than decrease, and this is called attraction effect. According to Construal Level Theory (Trope and Liberman, 2003), people use a high-level construal to describe distant future events in terms of primary features, whereas people use a low-level construal to describe near future events in terms of secondary features. So, we examined change of the attraction and compromise effect according to the temporal distance. First, attraction effect is not significant in the near future but significant in the distant future. That is, the proportions of participants who decided to choose target product increased in the distant future. Second, compromise effect is significant in the near future but is not significant in the distant future. That is, near future significantly increased the likelihood of choosing the target product concert in the compromise effect condition. In the future research, we will find the reason of the difference between attraction effect and compromise effect in the future distance.*

Keywords: *Choice Change, Attraction Effect, Compromise Effect, Temporal Construal Theory*

KSQ06

SEARCHING AND DISCOVERING NICHE TECHNOLOGY AREA USING PATENT INFORMATION ANALYSIS

Chul-Young Kim[1], Min-Soo Kang[1], Dong-Moon Shin[1], and SungMin Bae[2]*

[1]KGT Lab Co., Korea
E-mail: cykim@patentpia.com
[2]Dept. of Industrial Management and Engineering, Hanbat National Univ., Korea
E-mail: loveiris@hanbat.ac.kr

Abstract: *In the past decade, speed of technology development is so rapid. New technology is adapted to existing product and/or service. We experience new product and service as we never expected. To penetrate market with a new product and/or service, every company gets their exclusive right using patent related to their product and/or service. As a results, ratio of patent infringement grows very fast compared with several decades ago. In other word, patent plays an important role in keeping their market share and developing new technology. In this paper, we propose new framework for searching and discovering niche technology area using patent information analysis coupled with patent classification categories. With two categories that we want to analyze, proposed system finds related patents; summarize their descriptive statistics, such as application count, and registration count. After that, it analyze in view point of quality of patents, expendability, possibility of preoccupy, and degree of technology convergence. With our framework, company could find their niche technology development area very easily and it helps company's direction of technology development.*

Keywords: *Patent information, Patent classification, F-term, Technology Management*

KSQ07

INCORPORATING PLATFORM-BASED PRODUCT DEVELOPMENT INTO SYSTEMS ENGINEERING PROCESS

Hee-Kweon Yoon[1], Jai-Hyun Byun[2,]

[1] Korea Aerospace Industries, Ltd., Sacheon, Republic of Korea, E-mail: heekweon@koreaaero.com
[2] Dept. of Industrial and Systems Engineering and Engineering Research Institute,
Gyeongsang National University, Jinju, Republic of Korea, E-mail: jbyun@gnu.ac.kr

Abstract: *Systems engineering processes have been applied throughout system life cycles from defining system requirements to system disposal. There have been various standards for the application of a systems engineering process which can be utilized in any product design and development program. Markets are demanding products with variety and short life cycles, which require an efficient and effective approach to the product development process. One approach is using a platform strategy for developing products. This study shows how the platform-based product development process needs to be incorporated into systems engineering standards. The characteristics between platform strategy and systems engineering standards are compared throughout the system life cycle from requirement to support. Some recommendations on applying the platform strategy to those standards are addressed.*

Keywords*: platform strategy, product development, product variety, systems engineering standards*

KSQ08

MEASURING THE QUALITY COST IN SERVICE INDUSTRY

Liu Fan[1], Sang-Chan Park[1], Yung-Ho Suh[1], Sang-Chul Lee[2]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: imfanliu@gmail.com, sanchanpark@paran.com, suhy@khu.ac.kr
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *The purpose of this study is to propose a methodology for estimating the quality cost considering Cost of poor process performance in one of Korea service industries. An appropriate framework is proposed for capturing quality costs and detailed analysis is carried out to characterize quality cost in a service company. The study demonstrates the calculation of quality cost using typical Key Performance Indicators (KPI) for each process. This paper develops a service-oriented Qcost model, and thus conducts a case study targeting at 14 branches of a service company to test the validity of the model. First, by adapting the Process Classification Framework (PCF), this study defines 12 processes that will be used to analyze Qcost. Then, KPIs that can be useful to analyze Qcost of each process is developed, with a total of final 118 indicators. Typical KPIs of each process are selected to analyze the Qcost. This paper provides a method to calculate quality cost through different processes for a corporation within a service industry, and finds some managerial insights which can help improve the efficiency within the corporation.*

Keywords*: quality cost, service industry, key performance indicator, Process Classification Framework*

KSQ09

SERVICE QUALITY INNOVATION AND PERFORMANCE IN THE MEDICAL INDUSTRY-EXPLORATORY APPROACH

Gye-Soo, Kim

Department of Business Management, School of Business Administration, Semyung University, Jechon, Chungbuk 390-711, Korea
Email: gskim@semyung.ac.kr

Abstract: *Services are central to the economic activity in any society. Services are not peripheral activities but rather integral parts of society.*

In Korea, Service quality competition among Medical Centers is severe. Medical centers are trying to differentiate from other. And they are make effort to upgrade service quality.

SQI (Service Quality Innovation) Model was developed by strong theoretical foundation. Questionnaire was made, and analyzed for this study. An empirical test on panel data by SEM (Structural Equation Model) shows that the external factors affecting service innovation. Service Innovation activities had significantly influence on business performance in medical center.

Keywords: *Services, Service quality competition, SQI (Service Quality Innovation), Model, SEM (Structural Equation Model), Business Performance*

KSQ11

ANALYZING CLINICAL PATTERNS OF THE INTEGRATIVE MEDICAL SERVICE

Hyung-Lae Lee[1], Sang-Chan Park[1], Sang-Chul Lee[2]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: anobo23@hanmail.net, sanchanpark@paran.com
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *The purpose of this research is to develop the clinical pathway for optimizing the integrative medical service (oriental-western integrated medical service) and to analyze the clinical pattern of the integrative patients who received the oriental-western integrated medical service. This research developed the clinical pathway by interviewing with doctors, nursing and experts at K Medical Center. To analyze the clinical patterns, this research used 860 integrative patients and 6345 non-integrative patients at K Medical Center since 2007. This study developed the clinical pathway for optimizing the integrative medical service. Comparing the clinical pattern of the integrative patients with the non-integrative patients, the results indicated that the interval and frequency of the integrative patients is shorter than that of the non-integrative patients. Comparing the medical treatment type, the integrated patients take much more medical care and more participate in medical treatment. In conclusion, it is different that the clinical pathway of the integrative medical service from the non-integrative medical service and the integrative medical treatment is more effective that the non-integrative medical treatment.*

Keywords*: Medical service optimization, clinical pathway, oriental-western integrated medical service, clinical pattern*

KSQ12

A STUDY OF THE KNOWLEDGE SHARING EFFECTS ON THE PROJECT ORGANIZATION CHARACTERISTIC, MANAGEMENT ENVIRONMENT CHARACTERISTIC, AND PROJECT OUTCOME

Jae-Young, Moon [1], Won-Hee, Lee[1]

[1]Division of Business Administration, Dongseo University, Korea (KSQM) jaymoon@gdsu.dongseo.ac.kr

Abstract: *Today's society is information society based on knowledge that influences competitiveness of a company. In particular, domestic construction companies of Korea are having many difficulties with unstable factors at home and abroad. They use knowledge transfer as one of the methods to solve these problems. The purpose of this study is to find out the effect of knowledge sharing and use on internal factors and project outcomes using structural equation model. As a result of this study, knowledge sharing and use by domestic construction companies are closing the physical and temporal distance between the headquarters and branches.*

Keywords: *Information Sharing, Relationship Formation, User Satisfaction*

KSQ13

DIFFERENCE IN USERS' BEHAVIOR BETWEEN PRESENT AND PAST USERS BASED ON THEIR PERSONAL TRAITS

Sae-Bom Lee[1], Liu Fan[1], Sang-Chul Lee[2], Yung-Ho Suh[1]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: spring@khu.ac.kr, imfanliu@gmail.com, suhy@khu.ac.kr
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *This study develops a model to explain users' self-disclosure on twitter, and compares the user groups (present users and past users). This study uses structural equation modeling (SEM) to confirm the validity and analyze the causal relationship of the suggested model. Multigroup structural equation modeling (MSEM) is used for comparisons between two groups in the model. This research use a questionnaire survey to 183 twitter users in Korea. The results of the multigroup comparison test indicate that the path coefficient from privacy concern to perceived trust, perceived risk to perceived trust, self-presentation to self-disclosure, and perceived risk to self-disclosure are different across the present users and past users. Other path coefficients are not different across the two groups. This study explains an individual's self-disclosure by employing the antecedents of personal characteristics (represented by privacy concern and self-presentation) and personal belief (represented by perceived risk and perceived trust).*

Keywords*: Self-Disclosure, Privacy Concern, Self-Presentation, Multi-group analysis, Twitter*

KSQ14

DFSS FOR NON-MANUFACTURING INDUSTRY AT THE SAMSUNG GROUP

Seunghyeon Lee[1], Eunseok Cheon[2], Bong Choi[3], and Chongman Kim[4*]

[1]Samsung Economic Research Institute, Seoul, Korea
Email: aerios@samsung.com[1]
[2]Samsung Fire & Marine Insurance, Seoul, Korea
Email: es.cheon@samsung.com
[3]Seoul Development Institute, Seoul, Korea
Email: cbong@sdi.re.kr
[4]Department of Industrial and Management Engineering, Myungji University, Yong-in, Korea
Email: chongman@mju.ac.kr[*]
[2]Industrial

Abstract: *Six sigma has been developed in manufacturing environments and is rapidly expanding to the service area. However, while a number of successful cases for DFSS projects have been reported in the manufacturing industry, there has been a lack of studies that consider the DFSS methodology for non-manufacturing sectors. The present work introduces a DFSS methodology, developed and being used in Samsung Group, for non-manufacturing industries. This paper compares DFSS methodology with DMAIC and presents a DFSS roadmap that consists of five macro phases: define, measure, analyze, design and verify. We also provide a real industry case to illustrate the usage of the methodology.*

Keywords: *Six sigma, DFSS, Service industry, Road map*

KSQ15

CASE STUDY ON IMPROVING OF DESIGN STAGE CONSIDERING CUSTOMER COMPLAINT – FOCUS ON L COMPANY

Sangbok Ree[1*], Rohgook Park[2]

[1]Seokyeong Uiversity, Korea (KSQM), Email: sbree@skuniv.ac.kr
[2]Sangji Uiversity, Korea (KSQM), Email: rogpark@sangji.ac.kr

Abstract*: It is basis to consider customer complain at design step that develop product. But it is not considering enough customer complain at product developments of many enterprises. Many product developers are reflecting customer complain partially, also voice of AS step is not reflected insufficiently. In this paper, we give one example of process improvement which Customer complain is reflected systematically for product design.*

Keywords*: Customer Complain, Design step, process improvement*

KSQ16

DEVELOPING MANUFACTURING KNOWLEDGE SHARING PLATFORM: FOCUS ON KOREA ROOT-TECHNOLOGY INDUSTRY

Young-Gue Kim[1], HyoungWook Lee[2], Young-Mu Huh[3], and SungMin Bae[1*]

[1]Dept. of Industrial & Management Engineering, Hanbat National University, SAN16-1 DuckMyoung-Dong, Yusong-Gu, Daejeon, Korea
Email: youngkyukim89@gmail.com[1], loveiris@hanbat.ac.kr[1*]
[2]Dept. of Energy Systems Engineering, Korea National University of Transportation, 50 Daehak-ro, Chungju-si, Chungbuk, Korea
Email: hwlee@ut.ac.kr
[3]Molds & Dies Technology R&D Group, KITECH, 7-47 Songdo-Dong, Yeonsu-Gu, Incheon, Korea
Email: ymheo@kitech.re.kr

Abstract: *Production technology is processing raw materials into final parts in the manufacturing industry and is composed of casting, molding, welding, heat treatment, surface treatment, and plastic working. Also, it plays important roles in Korea's main export industries including automobiles, shipbuilding, and semiconductors. These technologies are one of the enabler of "high productivity, high-value-added" future industries. However, knowledge of production technology is mostly achieved and transferred through experienced worker and results of R&D are only available to the corresponding enterprise or research institute. The objective of manufacturing knowledge sharing platform is to convert the production experience like a worker's know-how into quantitative values, to construct database of the process technologies and to share the technologies systematically via web portal service. In addition, the knowledge sharing platform contains the total production processes of automobile and mobile products such as information of experts, facilities, and cutting-edge R&D outputs. In this manner, production knowledge platform system could strengthen the technological competitiveness of small and medium sized manufacturing companies in Korea.*

Keywords: *Knowledge Sharing Platform System, Production-based Process Technology, Technology Diffusion*

KSQ17

A STUDY ON THE WAVE OF K-POP AND ITS SUCCESS FACTORS

Wan Seon Shin[1*], Liu Fan[2], Hyung Wook Kim[3], and Yun Chung Hong[4]

[1]Sungkyunkwan University, (Korea) KSQM
[2]Kyung Hee University, (Korea) KSQM
[3]Hongik University
[4]Jungkyung High School

Abstract: *K-POP refers to Korean popular music, which is a musical genre consisting of Pop, dance, electropop, hip hop, rock and R&B music originating in South Korea. K-POP swept for high rankings in Oricon chart in Japan, and Billboard chart in the U.S. even establishes a K-POP chart in 2011. This reveals the popularity of K-POP not only in Japan, China or Southeast Asian countries, but also its influence to Europe, U.S. and etc. This paper intends to introduce the popularity of K-POP overseas and analyze the factors causing its success. Dividing the domain into Asia, Europe, and U.S., this paper introduces the I-DOL singers that are active in each area. Based on a questionnaire survey targeting at foreigners aging between 10s and 20s, who are regarded as key customers of K-POP, this paper investigates the factors influencing the success of K-POP. Furthermore, this paper also carries out the questionnaire survey to teenagers in Korea, and understands the differences between domestic customers and foreign customers in viewing K-POP.*

Keywords: *I-DOL singers, K-POP, Success factors*

KSQ18

PUBLIC ONLINE SERVICE AND CUSTOMER SATISFACTION IN U-CITY

Insu Cho[1] and Heejun Park[2]

[1]Yonsei University, 124 Shinchon-Dong, Seodaemoon-Gu, Seoul 129-749, Rep. of Korea
E-mail: bluefin84@yonsei.ac.kr
[2]Yonsei University, 124 Shinchon-Dong, Seodaemoon-Gu, Seoul 129-749, Rep. of Korea
E-mail: h.park@yonsei.ac.kr

Abstract: *Through the development of ubiquitous technology, Korea public agency provides knowledge and information service to customers through online based system. This requires the evaluation of online service quality. Therefore, we examine the impact of public online service quality factors on customer satisfaction. this study evaluated public online service quality categories and items based on the eQual program developed by Barnes and Vidgen (2006). Using a questionnaire designed to test online service qualities for public websites designed by The Knowledge and Information Resources Management Project, we examined 707 users and then measured the effects of service quality factors on customer satisfaction. The results show that information quality, usability, and service interaction has a positive effect on customer satisfaction. We modify eQual to be suitable for ubiquitous environment. And we identify key service factors for customers. Our findings will be necessary for public agency to design and provide service to customer based on ubiquitous technology.*

Keywords: *Customer Satisfaction, Public Web Service, eQual, Ubiquitous City (U-City)*

KSQ19

A STUDY ON EFFECTS OF THE MANUFACTURER'S MARKET ORIENTATION ON INNOVATIVE ACTIVITY AND BUSINESS PERFORMANCE

Hanjoo Yoo [1], Jong-Woo Park[2], Gwangsuk Song[3]

[1] Soongsil University, Korea, KSQM, Email: hyoo@ssu.ac.kr
[2] Soongsil University, Korea, KSQM, Email: jongpark7@ssu.ac.kr
[3] Soongsil University, Korea, KSQM, Email: songks72@ssu.ac.kr

Abstract: *This study is intended to define the interrelationship between market orientation, enterprise innovative activity and management performance of Korean manufacturing companies. In order to achieve this objective, analysis was conducted on how market orientation affected to enterprise innovative activity and management performance with 526 enterprises (180 large and 346 small and medium companies). In particular, enterprise innovative activities were analyzed in related with management performance on the basis of different activities such as product innovation, process innovation, organization innovation activities. The result of analysis showed that market orientation affected significantly on product innovation, process innovation and organization innovation activities, and in turn, product innovation and organization innovation affected significantly on business performance. However, it indicated that process innovation activity did not affect significantly on business performance. Furthermore, the result of analysis showed that market orientation had no significant direct effect on business performance.*

Keywords: *Market Orientation, Innovation Activity, Product Innovation, Process Innovation, Organizational Innovation*

KSQ20

FUZZY RELATION ANALYSIS ON THE CORE COMPETENCE OF CEO AND MANAGEMENT INDEX

Jignesh Panchal[1], PARK Bong-Gyeong[2], HWANG Seung-Gook[3] and PARK Young-Man[4]

[1]JPAN TUBULAR COMPONENTS PVT.LTD, New Delhi, India
E-mail: jpanchal@jpantubular.com
[2]JAE HYUN AUTONICS Co., Changwon, Kyungnam, Korea,
E-mail: bkpark5261@hanmail.net
[3]Kyungnam University, Changwon, Kyungnam, Korea
E-mail: hwangsg@kyungnam.ac.kr
[4]Kyungnam University, Changwon, Kyungnam, Korea
E-mail: youngman @kyungnam.ac.kr

Abstract: *This paper suggests an analysis method through the fuzzy relation matrix between core competence of CEO and management index using fuzzy relation matrix which has possibility and necessity of fuzzy system. This is very important part for the management of business. In this paper, core competence of CEO will be used twenty-four core competences in terms of entrepreneurial aspects, managerial aspects, technical aspects, and social aspects. Also, management index will be used 5 indexes, that is, productivity, growth, profitability, safety, activity. Here, fuzzy relation matrix can be obtained input matrix and output matrix of fuzzy system. Using the results of fuzzy relation matrix, the relationship between core competence of CEO and management index will be analyzed. In this paper, it is expected that the results of this study can be used to improve the management index through improvement of core competence of CEO in small and medium-sized companies.*

Keywords*: Fuzzy Relation, Fuzzy System, CEO, Core Competency, Management Index*

KSQ21

DEVELOPING A TPM MODEL FOR QUALITY MANAGEMENT

Ju-Young Han[1], Liu Fan[1], Sang-Chul Lee[2], Sang-Chan Park[1], Yung-Ho Suh[1]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: jyhan1214@google.com, imfanliu@gmail.com, sanchanpark@paran.com, suhy@khu.ac.kr
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *Many companies are spending effort to improve its quality competitiveness, thus methodologies such as Total Productive Maintenance (TPM) are adopted. Based on TPM methodologies used in manufacturing industry, this study develops a TPM model for quality management in service field. At the same time, the developed model is tested in 14 branches of a service company with TPM level analyzed and the development vision provided. The result reveals that the current TPM level for 14 branches of a company's averages 4.9 sigma, and Pillar 7-Office TPM catches the highest sigma level. Dividing the activities generally into Key activity and Support activity, the result indicates that differences exist among 14 branches. Some branches appear to have a higher sigma level in key activities, while some are higher in support activities. Some branches show an average high sigma level in both key and support activities, while some others show both low sigma levels accordingly*

Keywords: *Total Productive Maintenance, six sigma, quality management*

KSQ22

DEVELOPING THE QCOST SYSTEM IN SERVICE COMPANY

Kwang-Hyuk Im[1], Liu Fan[2], Sang-Chul Lee[3], Sang-Chan Park[2], Yung-Ho Suh[2]

[1]Department of Electronic Commerce, Pai Chai University, Daejeon, Korea
Email: khim@pcu.ac.kr
[2]School of Management, Kyung Hee University, Seoul, Korea
Email: imfanliu@gmail.com, sanchanpark@paran.com, suhy@khu.ac.kr
[3]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *The purpose of this research is to develop the Qcost management system (QCMS) which can estimate and analysis the quality cost considering Cost of poor process performance in service industries. This research developed the QCMS through the process of the systems development methodologies, such as requirement analysis, system analysis & design, implementation and test. This research took a field study on data collected from a service company. This research developed the system configuration diagrams, interface design diagrams and manual of user and administrator. Final, the QCMS was implemented. To test the QCMS, this research analyzed the Qcost in a service company. This research developed the Qcost management system (QCMS) which can be used in service industries based on process classification framework and 6 sigma methodologies. With this system, companies can control and manage their cost of poor process performance.*

Keywords*: Qcost System, quality cost, service industry, cost of poor process performance.*

KSQ23

DEVELOPING A METHOD FOR INTEGRATIVE MEDICAL SERVICE BY USING DECISION MODELING METHOD

Ka-Eun Oh[1], Sang-Chan Park[1], Sang-Chul Lee[2]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: kaeun@khu.ac.kr, sanchanpark@paran.com
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr

Abstract: *The purpose of this research is to introduce new analysis method using Decision Modeling of Data Mining which is not applied yet in medical field and to analyze feature of patients who received integrative medical service (oriental-western integrated medical service). This research is based on K Medical Center. Data has been come from Warehouse and gathered but patient's entire name has been converted by serial number. Total data number is 1,239. The data of patient is analyzed by Chance Variable and Decision Variable. The result is verified by Chi-square test of SAS program ver. 9.3. As a result of setting a null hypothesis and analyzing patients who received integrative medical service, there is different participation rate in treatment according to age of male and female. Also integrative medical service group more participate in treatment than other group and there is no different to choice integrative medical service in each age.*

Keywords: *Data Mining, Decision Modeling, Cooperative Treatment, Western-Oriental Hospital, Integrative Medical Service (Oriental-Western integrated medical service)*

KSQ24

DEVELOPING R&BD EVALUATION SYSTEMS

Young-Tae Kim[1], Ka-Eun Oh[1], Hyung-Lae Lee[1], Sang-Chan Park[1], Sang-Chul Lee[2], Kwang-Hyuk Im[3]

[1]School of Management, Kyung Hee University, Seoul, Korea
Email: {supermind, kaeun}@khu.ac.kr, anobo23@hanmail.net, sanchanpark@paran.com
[2]Department of Business Administration, Korea Christian University, Seoul, Korea
Email: leecho@kcu.ac.kr
[3]Department of Electronic Commerce, Pai Chai University, Daejeon, Korea
Email: khim@pcu.ac.kr

Abstract: *This study primarily establishes value assessment systems for research and business development (R&BD) retained by business entities to ultimately contribute to supporting decision-making for R&D investment through government-level business assessment and establishing corporate R&D strategies. In the feasibility assessment system for R&D business model projects, technology is analyzed as business value. Therefore, in this study, the representative constituents of business models were used, and the value of technology was quantitatively assessed. The calculated value of technology was used as a primary data for systems analysis. Here, systems are designed with four major assessment models to form the infrastructure of an assessment system. In specific, the four models include marketability analysis, customer growth pattern analysis, competition analysis, and financial analysis. Through each analytic model and simulation, the business value of technologies retained by corporations can be assessed and the future value of these technologies can be estimated. The system developed in this study facilitates consistent analysis on every technology across a variety of industries from a business perspective by using business constituents. The preceding technology assessment systems mostly analyzed only the return that particular technologies bring; however, the newly developed system in this study also considered competition elements and analyzed both the return and risk to improve the accuracy of simulation.*

Keywords: *R&BD, evaluation system, Modeling & simulation, Business model component*

KSQ25

EFFICIENCY ANALYSIS OF PUBLIC ORGANIZATIONS MANAGEMENT ASSESSMENT CRITERIA IN KOREA

Wan Seon Shin[1*], Jae Yeon Park[1], Sung Hoon Hong[2], Eun Ki Jung[2]

[1]Sungkyunkwan University, (Korea) KSQM
[2]Chonbuk National University, (Korea) KSQM

Abstract: *This research deals with efficiency analysis of management assessment criteria for public organizations in Korea. The assessment criteria were initially designed by benchmarking Malcolm Baldrige model and applied to evaluate the performance of 52 public organizations including social overhead capital corporations.*

In this study, the relationships between qualitative process indicators and quantitative performance indicators have been observed using the evaluation results from 2008 to 2010. DEA, the Data Envelopment Analysis, was employed in analyzing efficiency of the assessment criteria in light of productivity. Malmquist Productivity Index has been also used to rank the efficiency of the public organizations. The results of this study on efficiency analysis of public organizations can be utilized in the future not only to design evaluation criteria but also to enhance operational management.

Keywords: *Performance Evaluation, Baldrige Model, Efficiency Analysis*

KSQ26

A SEMANTIC WEB APPROACH TO IMPROVING THE QUALITY OF XBRL BUSINESS REPORT

Pyo Jin Jeon[1], Young Gon Bae[2], Dae Won Kim[3]

[1]Republic of Korea Naval Academy Department of Management
E-mail: besho@yonsei.ac.kr
[2]Republic of Korea Naval Academy Department of Mathematics
E-mail: younggon.bae@gmail.com
[3]Republic of Korea Naval Academy Department of English
E-mail: prudentcircle@gmail.com

Abstract: *This study introduces XBRL(eXtensible Business Reporting Language) and related information surrounding XBRL ontologization in the beginning and moves on to look at the limits of constraint language in expressing conventional business information. Also, we present examples of expressing semantic constraints with SWRL(Semantic Web Rule Language) and SWCL(Semantic Web Constraint Language) and application in the business field with regards to the introduction of IFRS(International Financial Reporting Standards). This paper hopes to aid in an efficient and effective utilization of business information. It also hopes to help regulatory agency diagnose soundness of current financial standing management and use it in the development of accounting fraud detection model and so on.*

Keywords: *XBRL, Ontology, Semantic Web, SWRL, SWCL*

KSQ27

A STUDY ON DEVELOPMENT OF GREEN MANAGEMENT SYSTEM IN KOREA

Hyung-wook Kim

Business School, Hongik University, Seoul, Korea
Tel: 82-2-320-1706, e-mail:kimhw@hongik.ac.kr

Abstract: *Nowadays green growth has been a one of the most important issues concerned with sustainable growth in the world. In Korea the government is also pursuring the "Low CO_2Green Growth" as the new national polotical project. For the sucessful ongoing of this critical project, the enterprizes must be interested in this issue and pursue the green management with green growth. But green management system is not yet developed and applicable in most companies. In this paper the needs and required contents for developing green management system to be successfully applicable in Korean companies are searched; and also the measures for successful certification of this system will be discussed.*

Keywords: *Green growth, Green Management System, ISO 14000 System*

KSQ28

A STUDY ON OPTIMAL RELIABILITY GROWTH MODEL OF EMBEDDED SYSTEMS WITH HARDWARE-SOFTWARE LINKAGE FAULTS

Kyung H. Nam[1], Do Hoon Kim[2]

Department of Applied Information Statistics, Kyonggi University,
94-6, Yiui-Dong, YeongTong-Gu, Suwon 447-760, Korea
Email: {knam[1], dhkim1125[2]}@kyonggi.ac.kr

Abstract: *There has recently been a trend that IT industry is united with traditional industries. Therefore, embedded system which controls hardware of the system should guarantee the high reliability, availability and maintainability. We propose a new software reliability model to improve quality and reliability of embedded system considering maintenance policy with hardware-software linkage faults.*

Keywords: *Software Reliability Growth Model, Nonhomogeneous Possion Process, Software Release Time, Warranty Period, Software Maintenance Activity*

KSQ29

DETERMINING THE MOST PROFITABLE TARGET VALUES FOR A TOOL WEAR PROCESS BASED ON A CORRELATED VARIABLE

Cheol-Eun Jeong[1], Hyuck Moo Kwon[2], Sung-Hoon Hong[3], Taeho Park[4] and Min Koo Lee[5*]

[1]Korea Atomic Energy Research Institute, Daejeon, South Korea, 305-353
Email: cejeong@kaeri.re.kr
[2]Department of Systems and Management Engineering,
Pukyong National University Yongdang-dong San 100, Nam-gu, Busan 608-739, Korea
Email: iehmkwon@pknu.ac.kr
[3]Department of Industrial & Information Systems Engineering,
Research Center of Industrial Technology
Chonbuk National University, Chonju, Chonbuk 561-756, Korea
Email: shhong@chnbuk.ac.kr
[4]Department of Organization and Management, College of Business,
San Jose State University, CA95192, U.S.A
Email: Park_t@cob.sjsu.edu
[5]Department of Information and Statistics, Chungnam National University
220 Gung-dong, Yuseong-gu, Daejeon, 305-764, KOREA
Email: sixsigma@cnu.ac.kr
*Corresponding author

Abstract: *We present a profit model for determining the most profitable initial process mean, length of resetting cycle, and screening limits for a tool wear process in which there is a linear shift in the process mean value. Each outgoing item is inspected with a surrogate variable which is correlated with the quality characteristic of interest. A profit model is constructed which involves selling price, costs of resetting, production, inspection, scrap, and losses due to the type I and II errors. Assuming that the quality characteristics of interest and the surrogate variable are jointly normally distributed, the initial process mean, length of resetting cycle, and screening limits are obtained by maximizing expected profit function using a numerical search method.*

Keywords: *Initial process mean, Length of resetting, Screening limits, Tool wear process*

KSQ30

A CONTINUOUS SCREENING PROCEDURE USING PERFORMANCE AND SURROGATE VARIABLES WITH A SPECIFIED AOQL VALUE

Sung Hoon Hong[1], Eun Ki Jung[2], Hyuck Moo Kwon[3], Min Koo Lee[4]

[1]Department of Industrial & Information Systems Engineering, Chonbuk National University, Chonju, Chonbuk 561-756, Korea, Email: shhong@jbnu.ac.kr
[2]Department of Industrial & Information Systems Engineering, Chonbuk National University, Chonju, Chonbuk 561-756, Korea, Email: 201150493@jbnu.ac.kr
[3]Department of Systems and Management Engineering, Pukyong National University Yongdang-dong San 100, Nam-gu, Busan 608-739, Korea, Email: iehmkwon@pknu.ac.kr
[4]Department of Information and Statistics, Chungnam National University, 220 Gung-dong, Yuseong-gu, Daejeon, 305-764, Korea, Email: sixsigma@cnu.ac.kr

Abstract: *When the nature of measuring a performance variable is destructive or very expensive, the use of a surrogate variable as the screening variable is attractive if the surrogate variable is relatively less expensive to measure and highly correlated with the performance variable. In this paper, a continuous screening procedure interchangeably using the performance and surrogate variables is proposed. At the start of the inspection, the performance variable is measured for all items. As soon as* i *consecutive items are found to be free of defects, the surrogate variable is measured instead of the performance variable. If an item is rejected, the inspection based on the performance variable is resumed. It is assumed that the performance variable and the surrogate variable are jointly normally distributed with known means, standard deviations, and correlation coefficient. The average outgoing quality (AOQ) expression is derived, and methods of finding the inspection procedure with a specified average outgoing quality limit (AOQL) are presented.*

Keywords: *Average Outgoing Quality Limit, Screening Procedure, Performance Variable, Quality Inspection, Surrogate Variable*

NZ01

LEAN THINKING AND SIX SIGMA IN HEALTH CARE: CHALLENGES AND SUSTAINABILITY ISSUES WITHIN NEW ZEALAND

Nigel P. GRIGG[1, 2] and Mohammad ALSHADIEFAT[2]

[1]New Zealand Organisation for Quality, Palmerston North, New Zealand,
N.Grigg@massey.ac.nz
[2]Massey University, Manawatu Campus, Palmerston North, New Zealand

Abstract: *Global population and longevity trends mean that health care providers face increasing pressure to operate efficiently and effectively. Continuous Improvementprojects involving Lean and / or Six Sigma are increasingly being used within the sector to achieve this. The health care sector in New Zealand is a relatively recent adopter of Lean Thinking, Six Sigma and hybridised approaches to Continuous Improvement (e.g. Lean Six Sigma). This paper explores the implementation and sustainability of Lean thinking and Six Sigma within the sector. The study examines selected implementations and related outcomes, using a survey and two case studies of major NZ health care providers. The study and paper focus upon implementation efficacy and challenges, and the resultant sustainability of the CI programme. It provides health care researchers with an insight into the challenges of implementation, and assesses the potential sustainability of these approaches within NZ's Health care system.*

Keywords: *Lean, Six Sigma, Health Care, New Zealand*

OV02

THE APPLICATION OF POLICY DEPLOYMENT IN INDIAN COMPANIES

Charles A. LIEDTKE, Ph.D.

Strategic Improvement Systems, LLC, 6231 Hummingbird Road, Excelsior, MN, 55331, USA
caliedtke@aol.com, www.strategicimprovementsystems.com

Abstract: *Policy Deployment (PD), also known as Hoshin Kanri, originated in Japan in the 1960s. It is a core component of TQM with Cross-Functional Management, Daily Management, and Small Group Activities. India is a leading emerging markets (BRICS) country. Many Indian companies have developed an advanced quality management system. Twenty Indian organizations have been awarded the Deming Application Prize since 2001. This paper presents the findings of a study on the application of PD in Indian companies. Four Indian Deming Application Prize winners served as insight-stimulating case studies. The findings reveal that the PD practices of the four organizations are consistent with Japanese practices, but differences were found. This study provides insight into current Indian PD practices and offers emergent ideas on how PD practices can be improved. The findings can help increase the effective spread of PD. Also, the concept of Flexible PD is discussed.*

Keywords: *Policy Deployment, Hoshin Kanri, Deming Prize, India, Flexible Policy Deployment*

OV03

QFD + DOE = NEW PRODUCT QUALITY EXCELLENCE

Ronald D. MOEN

Associates in Process Improvement-Detroit USA
rmoen@apiweb.org

Abstract: *Organisations designing new products should consider adopting Up-front planning with increased learning in the design phase where the uncertainty is the greatest and do lots of prototyping and testing to gain knowledge required for decision making.*

The methods of quality function deployment (QFD) and design of experiments (DOE) will help improve communication and coordination, accelerate the learning, increase the leverage for higher quality products, and reduce the time necessary to bring the new product to market.

The relationships in the matrix of QFD are mostly predicted based on subject matter knowledge and not evidence based on experimentation using DOE. This paper provides the integration of DOE with QFD for better product quality excellence.

Keywords: *Accelerated learning, QFD, DOE, Taguchi*

OV05

APPLYING TOOLS OF QUALITY TO QUANTIFY THE BUSINESS CASE FOR SOCIAL RESPONSIBILITY

Milton KRIVOKUCA, DBA

California State University Dominguez Hills, Carson, CA 90747, USA, mkrivokuca@csudh.edu

Abstract: *Social responsibility is a core business process. From a single-person entrepreneurship to a multi-national corporation, social responsibility is a necessary component of any successful business. This topic continues to be addressed from a global perspective through various white papers and industry publications. Confusion exists for the business case of social responsibility due to the lack of clear metrics that reflect an organization's commitment to supporting social responsibility and to the absence of a working definition of social responsibility specific to the organization and its stakeholders. A culture-specific working definition is the baseline required for any organization to conduct a self-assessment of its level of commitment to social responsibility. The ISO 26000 Standard is a lengthy and complex document with core elements that may or may not apply to every organization in every nation. This presentation provides guidance to an organization to determine its level of commitment to social responsibility.*

Keywords: *Social responsibility, application tools, business case for social responsibility, quality metrics*

OV06

DEVELOPMENT OF KNOWLEDGE MANAGEMENT CAPABILITIES FOR ISO 9001 CERTIFIED ENTERPRISES: A RESEARCH AGENDA

Kit Fai PUN[1] and Man Yin Rebecca YIU[2]

Department of Mechanical and Manufacturing Engineering, The University of the West Indies,
St Augustine, Trinidad and Tobago, West Indies
[1]E-mail: KitFai.Pun@sta.uwi.edu
[2]E-mail: Rebecca.Yiu@sta.uwi.edu

Abstract: *The foundation of organisational competitiveness in the contemporary economy has shifted from tangible resources to knowledge. Organisations are beginning to recognise the need to tap into knowledge assets diffused around the organisation in order to remain agile. There is potential for integrating knowledge management (KM) capabilities into quality management (QM) practices (particularly the ISO 9001 system) in fostering organisational performance. Trinidad and Tobago (T&T) is a leading industrialised country in the English-speaking Caribbean. Many industrial enterprises in T&T have been certified to ISO 9001 standard. However, the industry focus, particular of those including small or medium-sized enterprises (SMEs), is largely put on fixing quality system defects and product/service non-conformities in a heavily documented system. This paper reviews the concepts of KM and QM practices, and proposes a research agenda to develop KM capabilities in improving QM practices at ISO 9001 certified enterprises in T&T.*

Keywords: *Quality Management, Knowledge Management, ISO 9001, model, SMEs*

OV07

GLOBAL SERVICE PROCESS TRANSFORMATION

Jane SEDDON[1] and Jan GILLETT[2]

[1]Chairman, Process Management International. janeseddon@pmi.co.uk
[2]Jan Gillett, Deputy Chairman, Process Management International. jangillett@pmi.co.uk

Abstract: *This paper asserts that, in order to give improvement or transformation programmes the best chance to endure, they must be based upon a few foundation principles rather than on mass training and projects. The authors propose Dr W Edwards Deming's System of Profound Knowledge, and the active use of the Plan-Do-Study-Act cycle. They illustrate the application of these ideas through a programme with an international container ports operator.*

Keywords: *Service process improvement, Transformation, Deming, Plan-Do-Study-Act.*

OV08

MEASURING KNOWLEDGE MANAGEMENT PERFORMANCE IN INDUSTRIAL ENTERPRISES: AN INTEGRATED MODEL

Man Yin Rebecca YIU[1] and Clement K. SANKAT [2]

Department of Mechanical and Manufacturing Engineering, The University of the West Indies,
St Augustine, Trinidad and Tobago, West Indies
[1]E-mail: Rebecca.Yiu@sta.uwi.edu
[2]E-mail: Principal@sta.uwi.edu

Abstract: *Knowledge management (KM) is a trans-disciplinary approach to improving organisational outcomes through maximising the use of knowledge. This paper proposes an integrated paradigm that aligns the KM performance measures to attain corporate/quality goals in industrial enterprises with particular reference to those in Trinidad and Tobago. The paradigm incorporates the criteria of KM performance measures and the design of self-assessment tools. An integrated knowledge management (IKM) model is derived. This paper also presents the results of a panel discussion with a group of industry experts and practitioners on the potential applicability of the IKM model. It is affirmed that the adoption of the model and its tools could help organisations to profile their strengths and weaknesses, and identify improvement opportunities. Future research could validate the key criteria of KM performance in industrial enterprises, and develop an implementation framework to foster the IKM efforts across industry sectors.*

Keywords*: Knowledge management, performance measures, self-assessment, industrial enterprises*

RUS01

FORMATION OF QUALITY OF LIFE THROUGH REVEALING AND DEVELOPMENT OF INCLINATIONS AND BENTS OF CHILDREN IN PRESCHOOL EDUCATION ESTABLISHMENTS

A. Volkov Oleg GAVRILOVICH[1] and B. Vorobchenko Yulia ALEKSANDROVNA[2]

[1] Professor, Ph. D. in Chemistry, Deputy Director of Cheboksary Polytechnic Institute (branch) SEE HPE "Moscow State Open University", 428000, Russia, Cheboksary, P. Lumumba street, 8, office 230, volgamgou@mail.ru

[2]Rersearch worker, specialist of a department of additional professional education of Cheboksary Polytechnic Institute (branch) SEE HPE "Moscow State Open University", 428000, Russia, Cheboksary, P. Lumumba street, 8, office 230, yulyavv@gmail.com

Abstract: *Inherent inclinations carry possibilities for development of abilities in the process of upbringing, training, education and labor activity. That is why it is very important to reveal inclinations and bents of children as soon as possible to purposefully form their abilities. After special short-term training (short-term advanced-training courses), teachers carry out constant scanning-testing of different, might be still bright not expressed qualities and characteristics of a child. And best results are fixed in a specially designed Card of diagnostics and development of a child. Parents of the child are also included in the diagnostics process.*

A teacher recommends to specialists of preschool educational institutions (DOU) to give additional classes for developing of corresponding abilities of the child on the basis of the analysis of the change dynamics of inclinations and bents of the child. And teachers together with parents define the most optimum trajectory of the subsequent development of revealed abilities, directing children to specially selected teachers.

Keywords: *early development, genetic preconditions, bents and abilities of a preschool child, individual Card of diagnostics, quality of life*

RUS02

PRACTICAL PROGRAM OF REVOLUTIONS IN FACTORIES “(PPORE) 20 KEYS”® IN RUSSIA: HOLISTIC CONTINUOUS BUSINESS IMPROVEMENT SYSTEM

Yury SAMOYLOV

Executive Director of Russian Organization for Quality, General director of “Business Excellence” Ltd. – Licensee of “PPORF.20 Keys”® in Russia and CIS countries from PPORF Development Institute (Japan), Vice-President of Russian benchmarking club “Business Excellence”, Expert of Russian Government Award in Quality, Member of International Quality Professionals Guild, Member of Global Benchmarking Network Board

Email: usamoylov@mail.ru

Abstract*: The main idea of this paper is to provide the best practice of creation a benchmarking system of measuring of improvements which will be used by Russian companies and organizations as a tool for their staff’s motivation on Business Excellence.*

ROQ assists Russian companies and organizations in creation of their own improvement system. This WORK is being made within the frames of ‘Practical Program Of Revolutions in Factories.20Keys”® and implemented by Russian Benchmarking Club “Business Excellence” basing on the license obtained from Japanese PPORF Development Institute Inc. (Iwao Kobayashi and Yoshiuki Kobayashi).

PPORF.20Keys® can be considered as an integrated holistic system for continuous business improvements because it is understandable for all employees on all levels providing common language and standards for measuring improvements for all staff.

Keywords: *Team, Measuring improvements, Benchmarking, Holistic system, Motivation for business excellence*

RUS03

COMPARISON BETWEEN THE DESIRABILITY FUNCTION BY E.C. HARRINGTON AND THE LOSS FUNCTION BY GENICHI TAGUCHI

Dr. Yuri ADLER[1] and Galina STASOVA[2]

[1]Professor of National University of Science and Technology "MISIS", Moscow, Russia
E-mail: adler.37@mail.ru
[2]Quality specialist Philips LLC, Moscow, Russia
E-mail: galina.stasova@rambler.ru

Abstract: *It is a common situation when we have a big set of different characteristics our processes and each of them pretends on the role of the response function for processes optimization. There is huge quantity of approaches to transformation many characteristics into one generalized response function or criterion of optimization. We'll try comparing only two from such approaches: the desirability function (DF) E.C. Harrington (1965) and the loss function (LF) G. Taguchi (1986). Our choice was connected with empirical background of both approaches in contrast with many formal mathematical procedures. Empirical nature of a method gives much more trust to results in the real World. The goal of DF is direct transformation all criteria in dimensionless form because in such form they are additive and the additive function of them may works as a generalized response function. It is one of the most convenient ways to construct a generalized response. The goal of LF is some transformation all criteria in form of money in which they are additive too. And some sum of them may works as generalized response function.*

The question is: what is the best DF or LF? And is it depending from circumstances?

Keywords: *Desirability Function, Loss Function, Comparison, Optimization, Generalized Response Function.*

RUS04

INNOVATIVE ENTERPRISE MANAGEMENT SYSTEM

Orlov KIRILL, Ph.D

Expert, Business Excellence Ltd.
E-mail: orlov_k_a@mail.ru

Abstract: *Nowadays, the main competitiveness factors of any kind of enterprises are as follows: reduction of production costs, coupled with a decrease in manufacturing cycle time, and permanent quality level increase in goods or services. Many Russian leaders and business owners are always asking questions - how to achieve effective value-for-time-quality? At present, the author conducted research in this direction and in this presentation introduces the concept and the first model of such a system. The author defined basic requirements for such a system.*

Keywords: *Management system, competitiveness, business improvement*

RUS05

THE FUTURE OF ISO 9001 STANDARD THROUGH THE LENS OF THE SYSTEM OF PROFOUND KNOWLEDGE

Dr. Yuri ADLER[1] and Dr. Vladimir SHPER[2]

[1]Prof. of Moscow Institute of Steel and Alloys, Moscow, Russia,
E-Mail: adler.37@mail.ru
[2]Ass.Prof. of Moscow Institute of Steel and Alloys, Moscow, Russia,
E-Mail: vshper@gmail.com

Abstract: *The purpose of our paper is to raise a question of the future of ISO 9001 standard from the viewpoint of Dr. Deming system of profound knowledge. We think that the World has changed in such way that quality community should rethink both the goal and the applications of this standard. The thing is that the growth of the number of ISO 9001 certificates and concomitant accredited bodies lead to a giant growth of bureaucracy, which cancels out all positive sides of quality management standards and lead to the results opposite to the original ones. We suggest a simple remedy but it should be considered very carefully and from different viewpoints.*

Keywords: *ISO 9001, certification, bureaucracy, quality systems*

SQI01

HUMAN CAPITAL RISK IMPLICATIONS ON QUALITY AND PRODUCTIVITY

Dr Roy RIMINGTON

BA (hons), Ph.D (Management Science), MSQI, MRIMAS
Exco Member, Singapore Quality Institute, Email: sqisecanq@sqi.org.sg

Abstract: *In today's fast moving and complex world, the operating environment facing organisations can change very quickly. Strategies and processes that were successful before may not be so in the future. Instead of taking the state of the operating environment for granted, organisations now should be keenly aware of the threats that they can face, and take steps to proactively pre-empt, manage and mitigate the risks. Organisations need to be able to size up risks associated with organisation-wide threats and opportunities, understand them and learn how to manage them. Indeed, the speed of events has exposed the inherent weakness in organisations' ability to effectively manage their most significant asset – human capital.*

Human capital is the composite of competencies, knowledge and personality attributes embodied in the ability to perform tasks effectively so as to produce economic value. Effective human capital is essential for an organisation's success, and increases through education and experience and conditions of employment. Human capital risk (HCR) is the ability of the workforce to meet the objectives of the organisation. Human capital risk has the potential to radically change the way organisations view and utilize their workforce. Human capital risk can create conditions of threats and opportunities for an organisation such as "no risk no gain". This paper will examine the meaning of HCR, and primary area of impact on an organisation.

Keywords: *Human Capital Risk, Behaviour, Competency*

SQI02

IMPROVE STRAIGHT TROUGH PROCESSING RATE OF FINANCE COMPANY BY SIX SIGMA METHODOLOGY

Too Meng KEN[1] and Karthik Vasu KRISHNAN[2]

[1]Certified Course Chairman, Singapore Quality Institute, SQI (Singapore),
Email: ktmken@singnet.com.sg
[2]Finance Manager, Finance Company, SQI (Singapore).
Email: vk_kari@yahoo.com.

Abstract: *In the finance industry, the company is always looking for way to cut cost through reducing manpower expenses and overhead cost. On top of this, the company is also looking way to improve efficiency of operation. Hence the company is looking into increasing the Straight Through Processing Rate. Straight Through Processing Rate refers to the percentage of transactions of fund transfer that are processed without manual intervention. If this can be done, it will bring additional benefits of significant faster turnaround times for customers, resulting in customer satisfaction and consequently additional business revenues.*

The Straight Through Processing Rate had fallen to a monthly average of 43.5%. The Six Sigma Methodology of DMAIC (Define-Measure-Analyze-Improve-Control) was deployed to tackle this problem. By doing so, the Straight Through Processing Rate had increased to a monthly average of 64.2%. That was an improvement of 48% ! Apart from tremendous cost saving, the company also achieved customer satisfaction and increased the business revenue as more clients were using these facilities.

Keywords: *Straight Through Processing Rate, Finance Company, Multiple Regression, Electronic Banking, Statistical Analysis.*

SQI03

MAINTENANCE SCHEDULING OF PLASMA ETCHING CHAMBER IN WAFER FACRICATION FOR HIGH YIELD RTCHING PROCESS

Le Minh DUC and Cher Ming TAN

Nanyang Technological University (NTU)
School of Electrical & Electronics Engineering (EEE)
Singapore

Abstract: *Plasma etching is common in chemical etching process in semiconductor industry due to its low cost and good control of etching profile and uniformity. Inductive Couple Plasma (ICP) tool is popular because of its higher throughput and better width control. To ensure the cleanliness of the etching chamber, Particle per Wafer Pass (PWP) test must be carried out in order. Once the number of particle exceeds a pre-defined threshold, the etching chamber must be wet-cleaned. In actual manufacturing, the gaseous recipes used during etching vary with the etched materials, which lead to unexpected and unpredictable by-products in a given production run, rendering the particle count from PWP highly stochastic, which may result in missing of needed wet-clean maintenance.*

In this work, we analyze the daily PWP results from an inductively coupled plasma etching (ICP) chamber for an eight-month period. We model the behaviour of the particle count as a stochastic function of the accumulated gaseous recipes flowing though the chamber. Based on the model, we determine the optimal schedule for wet clean and significant reduction in the failure occurrence is achieved.

Keywords: *Inductive Couple Plasma Etching, Particle per Wafer Pass, Particle Count, Negative Binomial Distribution, maintenance scheduling.*

SQI05

FLOW IMPROVEMENT IN HISTOPATHOLOGY LABORATORY THROUGH RESOURCE LEVELING

NG Yun Suan Melissa[1] and Ilyana Huda Bte Mohammed Hussain[2]

[1]Department of Pathology, Singapore General Hospital, Singapore
Email: melissanys@live.com
[2]Department of Pathology, Singapore General Hospital, Singapore
Email: ilyana_huda@hotmail.com

Abstract: *Lean is a philosophy that recognizes waste as the primary driver of high cycle time, high cost and low quality. It deploys techniques to continually drive out waste in processes and at the same time pursues optimum streamlining throughout the entire system. This paper illustrates how Lean principles and tools were used to improve the workflow in a Histopathology laboratory. The objective of this project was to improve the flow in the Histopathology laboratory through reducing waste, variability and unreasonableness, and also to raise the overall staff satisfaction on the workflow to 90% in 6 months. The experience learnt from this project can be extended to other laboratories or various other industries.*

Keywords: *Resource Leveling, 'Push-Pull' System, Lean in Histopathology Laboratory*

SQI06

TO REDUCE PAIN AND DISCOMFORT FOR PATIENT WITH SCROTAL SWELLING

LEE Teng Teng[1] and XU Yi[2]
HONE Swee Mui, HENG Pei Boon, MUHAMMAD Najib Bin Ngasewan, TAN Wu Meng, NORHAYATI Bte Mohd Dali, KOU Seow Wei

[1]Singapore General Hospital, Singapore, lee.teng.teng@sgh.com.sg
[2]Singapore General Hospital, Singapore, xu.yi@sgh.com.sg

Abstract: *Scrotal swelling is a distressing symptom that affects patient who suffers from cancer or lymphedema. Lack of interventions to relieve pain, discomfort and friction affects patient's quality of life. After root causes analysis and brainstorming of solutions, Serendipity technique was adopted for developing of a modified scrotum support using the Tubifast®. 1st phase of project involved 9 patients in 3 PDSA cycles. Results show a mean reduction from 5.7 to 0 for pain and 5.7 to 0.2 for discomfort within 48hours. During 2nd phase, 14 patients were recruited. On average, there was a reduction pain score of 3, discomfort score of 3.33 and improved mobility level by 1.16. There was an average reduction in scrotal circumference of 3.1cm over 48hours throughout the 6 months. No additional pressure points were noted and results were consistent. Striving for excellence using simple inventions can make a great difference in improving patient's outcome.*

Keywords: *Swollen Scrotum, Scrotum Support, Pain, Discomfort, Mobility Level.*

SQI09

TO ERADICATE SPLINT: ASSOCIATED PROBLEMS AT SGH NEONATAL TO ZERO WITHIN 6 MONTHS

LEE Wai Kheng

Singapore General Hospital, Singapore, juliet.lee.w.k@sgh.com.sg

Abstract: *This project serves to examine the problems associated with the use of splints in SINGAPORE GENERAL HOSPITAL (SGH) WARD54 NEONATAL (W54N). Splint is used to immobilise patient's limb that has an intravenous access in-situ. Being made of metal and a thin layer of cushion, these hospital-supplied splints are wrapped by the W54N nurses to provide patient comfort during its use.*

However, skin breakdown, loose and untidy splint covers during use, and inability to achieve ideal alignment were observed over the cannulated limbs. Surveys revealed that 80% of the problems surfaced from the poor design of the splints. Root causes were identified and solutions chosen by the team were guided by patients' best interest in mind.

Data collection on the improvised splint making and wrapping methods shows an achievement of 100% successful rate in eliminating the splint-associated problems at SGH W54N with no re-occurrence of problems.

Keywords: *Splint-associated problems, Nurses, Patients, SGH*

SQI15

ORDER UP! TO REDUCE THE TIME TAKEN FOR A1/B1 DIET ORDERING PROCESS IN WARD 73 BY 50% WITHIN 6 MONTHS

LEE, C. W.[1], ROSLAN, S.[2], OSMAN, H.[3]

Hospital Drive, Singapore General Hospital, Singapore
[1]Email: lee.chee.woei@sgh.com.sg
[2]Email: shahidah.roslan@sgh.com.sg
[3]Email: hartini.osman@sgh.com.sg

Abstract: *The purpose of this Quality Improvement Project is to look into the improvements to the diet ordering process by nurses in Singapore General Hospital (SGH) Ward 73, Department of Internal Medicine. Nurses are responsible for ordering and serving the meals to patients as to ensure that patients receive adequate nutrition during their hospitalization. However, the process of ensuring that patient's meal order is being ordered correctly is tedious and time consuming. Therefore, the team used Cause and Effects Diagram and Multi Voting Technique to identify the root causes. Serendipity and Delphi Technique were used to generate solutions. Prioritization Matrix was then used for identifying the best 3 solutions for the project implementations. With the implementations of the project, the median time taken to order diet for patients were reduced from 1 hour 15 minutes to 30 minutes daily. The reduction in time have also improved quality care to patients as the nurses now have more time to conduct patient's education and discharge planning, thus improving patients' and staffs' satisfaction.*

Keywords: *Patient, Diet, Order, Satisfaction*

THA02

REDUCE BASIS WEIGHT VARIATION

SRIWONGSIRIWAT Charat[1], NANTURAT Seksan[2], SURASAK Lertsirimongkolsuk[3]
SOMSAK Sothornprapakorn[3], SABSEREE Jaran[3]

[1]Thai Cane Paper Public Company Limited, Kanchanaburi , Thailand
[2]Thai Kraft Paper Industry Company Limited, Kanchanaburi, Thailand
[3]SCG Center of Excellence and Sustainability Development, Bangkok, Thailand
E-mail: charasr@thaicane.com

Abstract: *Basis weight is an important qualification in kraft paper and poor process capability of basis weight used to be a serious quality problem at Thai Cane Paper Public Co. Ltd. Process Capability of basis weight in kraft paper was solved by using QC story with special quality tools. Data was collected from machine automation measurement system, called the QCS (Quality Control System). The system composed of subsystems such as fibrous of paper loop, moisture loop. Each subsystem displayed and recorded many process parameters affecting basis weight of kraft paper. Process observation as well as intrinsic knowledge was used to address the possible root causes. Multiple regression was applied to identify the root causes and to build the statistical model between basis weight and significant factors. The factors in flow approach system process, such as silo levels and valve opening levels, were the most significant factors and had high variation. The process capability of basis weight was improved by controlling the significant factors with in appropriate control ranges. The result showed that process capability of basis weight was increased from 0.7 to 1.2.*

Keywords: *QC Story, Multiple Regressions*

THA03

REDUCE COST OF IMPACT PREVENTING ROOF

SEREEVIRIYAKUL Vithayavut[1] and SABSEREE Jaran[2]

[1]Siam Fibre Cement Co.,Ltd., Bangkok, Thailand, vithayas@scg.co.th
[2]SCG Corporate Total Quality Promotion Center, Bangkok, Thailand, jaransab@scg.co.th

Abstract*: Impact preventing roof tile is used to protect finish goods from cracking and dirt. The cost of impact preventing roof tile was a critical problem of SFCC's business. This problem was solved by QC Story with special quality tools, TRIZ, why-why analysis and DOE. Improvement ideas was generated by using TRIZ' s 40 inventive principles, finding that using dummy roof tile could reduce the cost of impact preventing roof. Furthermore, why-why analysis was used to identify the root cause of cracking in roof tile, finding that untightened screw caused the damage of the roof tile. Moreover, DOE full factorial was used to optimize the number of impact preventing roof, finding that one pieces of securing roof tile and 2 pieces of supporting roof tiles were the optimal solution. The overall improvement solution was implemented and the improvement result showed that cost of impact preventing roof was reduced 3.9 Million Baht/Year.*

Keywords*: TRIZ, 40 inventive principles, QC story, Design of Experiment, Full Factorial*

THA04

REDUCE WATER CLOSET GRINDINGS: A CASE STUDY SCG

KANJANAPONGSAWET Watchara[1], LERTSIRIMONGKOLSUK Surasak[2], KESPRATHUM Jessada[2], SOTHORNPRAPAKORN Somsak[2]

[1]Siam Sanitary Ware Industry Co.,Ltd., Saraburi, Thailand
[2]SCG Corporate Total Quality Promotion Center, Bangkok, Thailand
Email : watchark@scg.co.th

Abstract: *The percentage of water closet grindings was reduced through problem solving QC story approach with special quality tools. The water closets were grinded when their slopes were greater than the standard slopes. The attribute MSA was used to verify and improve the slope measuring method. The stratification factors were identified, after observation. We found that several factors could affect the slopes of the water closets. After that, the data collection plan was created. The Chi-Square test was used to identify the root causes, and we found that the root causes came from the casters on one line out of the three lines. The Lean analysis was used to reduce the working time in the cast shop to flatten the clay for being easier to work. The result showed that the percentage of grinding was reduced from 12% to 6%. For this project the cost was saved about 0.15 million baht/year.*

Keywords: *QC story, attribute MSA, Chi - Square test, Lean analysis*

THA05

IMPROVE MEASUREMENT PERFORMANCE OF CARBURIZATION INSPECTION ROBOT

Manaspiti Kolmanas[1], Rattanangam Phinyakarn[1], Khandiphanichakul Santad[1], Lertsirimongkolsuk Surasak[2], Kesprathum Jessada[2]

[1]Rayong Engineering & Plant Service, Co., Ltd. (Rayong, Thailand)
[2]SCG Corporate Center of Excellence & Sustainability Development (Bangkok, Thailand)
E-mail: kolmanam@scg.co.th

Abstract: *QC Story-Problem Solving approach with special quality tools was implemented to enhance measurement credibility of Carburization Inspection Robot. Measurement System Analysis (MSA) was performed to ascertain the precision of own-developed sensors. Based on Gage R&R study, the reproducibility among sensors was significantly improved by using Why-Why Analysis to identify and eliminate sources of measurement variability. The measurement accuracy was determined through Gage Linearity & Bias study, and improved via the conversion equations derived from Regression Analysis with quadratic relationship. The results indicate that the percentage of study variation was reduced from 72.74% down to 12.51%, which is considered acceptable, and the accuracy of the conversion equations was statistically guaranteed within +/- 1% of full scale, which is adopted as specification of the Robot.*

Keywords: *QC Story, Measurement System Analysis, Gage R&R, Gage Linearity & Bias, Regression Analysis*

THA06

IMPROVE PPK OF 28-DAY STRENGTH OF OPC FOR RMC APPLICATION

TREAMSAKSAKUL Sumed[1], SABSEREE Jaran[2],
LERTSIRIMONGKOLSUK Surasak[2], SOTHORNPRAPAKORN Somsak [2]

[1]The Siam Cement (Kaeng Khoi) Co., Ltd., Saraburi, Thailand
[2]SCG Center of Excellence and Sustainability Development, Bangkok, Thailand
e-mail: sumedt@scg.co.th, jaransab@scg.co.th

Abstract: *A major quality requirement of ready mixed concrete (RMC) is 28-day strength, mainly depending on quality of ordinary portland cement (OPC) consumed. The 28-day strength was a quality problem at the Siam Cement (Keang Khoi) Co. Ltd. (SKK). The quality of OPC was improved by using QC story with special quality tools. Path analysis was applied to indentify the relationship between factors. Multiple regression with interaction and quadratic relationship was applied to identify the root causes as well as to build the statistical model between 28-day strength of RMC and significant factors. The result showed that C_3A orthorhombic, GyHeAn and Blaine of cement were significant factors affecting 28-day strength of RMC. In addition, there were quadratic relationship in Blaine and C_3A orthorhombic as well as interaction relationship between C_3A orthorhombic and GyHeAn. The process was optimized from the statistical model and the quality improvement results showed that the 28-day strength of RMC was increased from 425 to 440 ksc. and the Ppk was increased from 0.85 to 1.50.*

Keywords: *QC story, multiple regression, path analysis*

THA07

INCREASE PPK OF LOAD BEARING CAPACITY INDEX

KARNKORN Nichachan[1], SEREEVIRIYAKUL Vithayavut[1], SABSEREE Jaran[2]

[1]Siam Fibre Cement Co.,Ltd., Bangkok, Thailand
[2]SCG Center of Excellence and Sustainability Development, Bangkok, Thailand
e-mail: nichachk@scg.co.th ,vithayas@scg.co.th ,jaransab@scg.co.th

Abstract: *Load bearing capacity (LBC Index), testing used to evaluate the strength of Roman tile, was a critical problem at Siam Fibre Cement - Thungsong Plant. This problem was solved by QC story with special quality tools; reversed hypothesis test and multiple regressions. Reversed hypothesis test was used to identify the root causes in process parameters, showing that material level and density were significant factors. Multiple regressions with interaction and quadratic relationship was used to identify root causes in raw material and to build statistical model, showing that the composition of material and material distribution were significant factors. The results from reversed hypothesis test and multiple regression were used to optimize the process and to set the new tolerance for process control. The overall improvement solutions ware implemented and the improvement result showed that the Ppk of load bearing capacity was increased from 0.375 to 0.714.*

Keywords: *Problem solving, reversed hypothesis test, multiple regression, QC story*

THA09

ENHANCE TRUCK UTILIZATION BY CREATING VISIBLE SUPPLY CHAIN MANAGEMENT

BOONCHAVAL Sirichai[1] and KESPRATHUM Jessada[2]

[1]SCG Logistics Management Co., Ltd., Bangkok, Thailand
E-mail: sirichab@scg.co.th
[2]Center of Excellence and Sustainability Development, SCG, Bangkok, Thailand
E-mail: jessadak@scg.co.th

Abstract: *Low truck utilization is considered as one of the major problems in logistics business. The objective of this project was to enhance truck utilization in the northern fleet of Thailand with cost-effective solutions. To achieve that objective, QC Story-Problem Solving, 3Gs (Genba, Genbutsu, Genjitsu) approaches and stratification technique were applied. These approaches led us to see the problem's prominent features which were used to identify the root causes. Therefore, the countermeasures were set to tackle them. As a result, truck utilization increased from 61.5% to 82.7% which was capable to serve customers' increasing demand. Moreover, average round trip of the truck increased from 4.31 to 5.79 rounds/month, waiting time at lignite mine reduced from 17 hours to 2.36 hours. From this project, "Visible Supply Chain Management" concept was proved effective in terms of clearly sharing information amongst related people in the supply chain, from customers to suppliers.*

Keywords: *QC Story Problem Solving, Supply Chain Management, Stratification, Genba Genbutsu Genjitsu, Fact and Data*

THA10

WASTE REDUCTION BY USING THE SCREENING WASTE MANAGEMENT

Udsanee MEEPRASERTSAGOO[1], Somnuk PURIPANYAPINUN[1],
Danai CHAROENSUK[1], Thanakom SOONTORNCHAINACKSAENG[2]

[1]Cotco Plastics Co., Ltd., Bangkok, Thailand
E-mail: udsanee.ccp@gmail.com
[2]EM-MV Center, STRI and Department of Mechanical Engineering and Aerospace,
Faculty of Engineering, King Mongkut's University of Technology North Bangkok, Thailand.
Email: tss@kmutnb.ac.th

Abstract: *Screening waste management is used to reduce the screening off grade problems from coating process. The design of experiment was studied by using problem solving QC story with quality tools. They data was collected from data-logger equipment. The Pareto Diagram was used for lists of the all off grade problems and the result showed that the most problems were caused by thickness off grade. Furthermore, the basic method of the cause and effect diagram was applied to the Brainstorming method. Analysis to identify and eliminate sources of measurement variability. The measurement accuracy was determined through variable speed drive, digital temperature controller and improved via the equations derived from Regression Analysis with quadratic relationship. The results showed that the more satisfaction level of our target, team working, multi skilled workers and techniques improvement, participative energy saving, to be improved various processes and solved quality problems and to reduced screening off grades problems more than 3%.*

Keywords: *Quality Control Tools, Benchmarking, Production Factor, PDCA, ECRS*

VIE01

CONSTRUCTION STANDARD TRAINING PROGRAM OUTPUT AND USE STANDARD FOR QUALITY MANAGEMENT EDUCATION AT HO CHI MINH CITY UNIVERSITY OF FOOD INDUSTRY, VIET NAM

Prof. Dang Vu Ngoan[1] and Le Hoang Vu[2]

[1] Director, Ho Chi Minh City University of Food Industry (HUFI)
Email: dangvungoan@cntp.edu.vn
[2] ISO Department, Ho Chi Minh City University of Food Industry (HUFI)
Email: vulh@cntp.edu.vn

Abstract: *Standard output of a program of education and training is the inner meaning of the minimum quality of graduate programs, are the indicators of quality, previous knowledge, skills, technique, personality, behavior of training products. Learners have been after the end of training and education programs in university. Declaration standards for a program of education and training of primary university is claiming responsibility for the quality of education and training primarily for the students, then to society, those who enjoy and use of school training products. The curriculum of each subject were compiled so that instructors and learners can base on which to convey information through a process of teaching and learning by integrating the "hard skills and soft skills" make the capacity of training products.*

Keywords: *Knowledge, skills, technique, personality, behavior and training products*

VIE02

THE APPLICATION OF CONTROL THEORY IN ANALYZING TRAINING PROCESS, SUGGESTING METHODS FOR THE IMPROVEMENT OF TERTIARY TRAINING QUALITY

Dinh Van Nhuong[1], Nguyen Thi Huyen[2]

[1]Red Star University, Vietnam
Email: nhuongdv2000@gmail.com
[2]Red Star University, Vietnam
Email: nguyenhuyenknn@gmail.com

Abstract: *In the tendency of intensive development of technology, the combination of multi-sciences in solving problems of different sectors of technology, economics, socio-politics, education… has been attracting much attention of the countries with the purposes of finding out the effective methods for promoting the country's economy and intellectual standards of people. The science of Control Theory has been widely and effectively applied in industrial processes promoting to the improvement of productivity and quality of products. The training process is also considered to be a manufacturing process, in which training objective is considered to be "the input" and "output" is the qualification of the learners.*
To solve the "training quality problem", there have been many researches on the improvement of training quality. However, the researches focus on the renovation of teaching methodology, a few researches applies the theory of control in education. This paper focuses on "The application of Control Theory in analyzing training process, suggesting methods for the improvement of tertiary training quality"

Keywords: *Application of control model, factors affecting the training quality*

VIE03

THE INNOVATION OF TRAINING CURRICULUM FOCUSING ON TRAINING SKILLS – A METHOD OF IMPROVING THE TRAINING QUALITY AT SAO DO UNIVERSITY

Vu Quang Thap[1], Phi Dang Tue[2], Nguyen Thi Huyen[3]

[1]Red Star University, Vietnam
Email: thapsd@gmail.com
[2]Red Star University, Vietnam
Email: tue.phidang@yahoo.com.vn
[3]Red Star University, Vietnam
Email: nguyenhuyenknn@gmail.com

Abstract: *According to the status of manufacture in our country, there is a demand of high-tech human resource with enough theoretical knowledge but the proficient practical skills. In the next period, with the speed of changing in the manufacture technology and the international integration, this demand tends to increase fast. The innovation of education curriculum targets focusing on training skills to fulfill that demand is a necessary request of recent training institutions. Innovated education curriculum helps graduate students be familiar with practical manufacturing technology and they are able to use and operate technical devices, especially advanced technical equipment well.*

The real status of the domestic human resource and experience of countries in the region and all over the world shows that the improvement of human resource is very necessary. To solve this problem, the duty of training institutions is to train technicians to fulfill the demand of the market economy in the international integration.

Red Star University has designed the education curriculum focusing on skills intensifying at different levels, which initially gets good achievements and makes great contribution to the fast promotion of the integration of Vietnam tertiary education into the regional and international education.

Keywords: *Innovation, training curriculum, training method, skill, quality.*

VIE04

ENHANCE SERVICE QUALITY FOR DISTRIBUTING SYSTEM OF RETAILED SALES IN HO CHI MINH CITY, VIETNAM

Vo Phuoc Tan[1], Pham Xuan Thu[2]

[1]Ho Chi Minh City University of Industry (VSR), vo_phuoctan@yahoo.com
[2]College of Foreign Economic Relations (VSR), phamxuanthu@gmail.com

Abstract: *With total revenue of 85 billions USD from retailed sales in 2011, retailed sales market in Vietnam is becoming attractive to retailed sales distributors inbound and outbound. HCMC, Vietnam – an economic and trading center of the whole country with population of more than 10 million people – needs thousands of consuming goods daily. With such high demand but manufacturers and distributing systems of retailed sales in HCMC, Vietnam can supply only 20-25% of goods quantity while the rest is supplied by traditional markets, so it is very difficult to control quality of goods and service. With about 600 supermarkets and trading centers along with 9000 traditional markets in the whole country, distributing system of retailed sales contributes its part to enhance circulation and consuming of goods in areas around the country. However, distributing system of retailed sales in Vietnam is quite new and lack of moderniqualityzation. In addition, it has not formed comparable supply chain to manufacturers so it leads to unstable service, many complaints about quality of goods, slow payment system, bad service attitude before, while and after sales.*

Keywords: *Quality, Service Quality, Retail Distribution System*

VIE07

ISO 26000 - SHOWING THE WAY IN SOCIAL RESPONSIBILITY AND SUSTAINABILITY DEVELOPMENT

Ngo Van Nhon[1], Le Ngoc Diep[2]

[1]Vietnam Quality Association of Ho Chi Minh City (VQAH)
Email: vqa.hcm@gmail.com
[2]Ho Chi Minh City University of Industry (HUI)
Email: lengocdiep@hui.edu.vn

Abstract: *ISO 26000:2010 is developed by International Organization for Standardization (ISO), using a multi stakeholder approach involving experts from more than 90 countries and 40 international or broadly-based regional organizations; experts from six different stakeholder groups: consumers, government, industry, labour, non-governmental organizations (NGOs), service, support, research, academics. This Standard can be used by any type, size and nature of organization and provides guidance on underlying principles of social responsibility, recognizing social responsibility and engaging stakeholders, the core subjects and issues pertaining to social responsibility and ways to integrate socially responsible behavior into the organization.*

This Standard provides guidance to users and is neither intended nor appropriate for certification purposes. ISO 26000:2010 is showing the way in social responsibility and sustainability development. This paper is a discussion about social responsibility issues and how we can be managed within a business for the benefit of society today and in the future and to avoid any *misconceptions and misuse.*

Keywords: *Social responsibility, sustainability development, misconceptions and misuse.*

VIE08

MENTORING ELT TEACHERS INTO THE LEARNER-CENTRED APPROACH TO IMPROVE STUDENTS' ORAL ENGLISH PROFICIECY AT RED STAR UNIVERSITY

Nguyen Thi Huyen[1], Phi Dang Tue[2]

[1]Red Star University, Vietnam
Email: nguyenhuyenknn@gmail.com
[2]Red Star University, Vietnam
Email: tue.phidang@yahoo.com.vn

Abstract: *In this article, an attempt is made to study the situation of applying the learner-centered approach in teaching English speaking skill for developing non-English major students' oral English proficiency which is required for their career and daily life in the trend of international economic integration. The paper starts with the background knowledge of the learner-centred approach and mentoring. Then it presents the teachers' perception and real implementation of the learner-centred approach. It is suggested that in order to apply this approach effectively to promote non- English major students' oral English proficiency the ELT teachers should be mentored how to teach English speaking skill using the learner-centred approach effectively. It is also suggested that the teachers should pay attention to develop learning activities which promote students' participation in practicing speaking skill such as group-work, pair-work and allow students to take part in learning assessment.*

Keywords: *mentoring, learner-centred approach, proficiency, non-English major student*

VIE09

SOCIETY'S NEEDS ATTACH TO SCHOOL DEVELOPMENT PROGRAM IN THUA THIEN HUE COLLEGE OF EDUCATION

Hoang Ngoc Quy

Thua Thien Hue College of Education (HCE)
Email: quyhong82@yahoo.com

Abstract: *Improving training quality, increasing competition and responding to the diversity needs of society are the objectives of each university and college. Thua Thien Hue College of Education has set training strategy under the social development perspective. To meet the society's needs, the focus is not only on the educational programs but also in the close connection between the college and other enterprises and social organizations. There are five main activities to implement, including:*

1. *Attach the training activities to society's needs to meet the social expectations in terms of knowledge, skills and lifelong learning spirit: Build specific educational programs to meet diverse employment standards.*
2. *Attach scientific research to social practices: Based on the school research strength to solve practical problems.*
3. *Share and exchange knowledge and skills with enterprises, social organizations.*
4. *Open professional consultancy services to the society: Provide chances for individuals and organizations to access to the school's resources.*
5. *Participate in social activities in local areas: Contribute to the society, on the other hand, improve life skills and moral quality for students.*

Keywords*: School development, social expectations, knowledge exchange, professional consultancy services, social contributions.*

VIE10

THE ADVANTAGES AND DISADVANTAGES OF USING SMART PENS FOR YOUNG CHILDREN'S ENGLISH LEARNING

Le Ngoc Diep[1] and Ngo Van Nhon[2]

[1]Ho Chi Minh City University of Industry (HUI)
Email: lengocdiep@hui.edu.vn
[2]Vietnam Quality Association of Ho Chi Minh City (VQAH)
Email: vqa.hcm@gmail.com

Abstract: *A smart pen, also called touch-talk pen, reads out loud paragraphs, stories and vocabulary in books designed specifically for it. They also include puzzles and songs. The books are of many subjects, including English. The aim of this study is to investigate the advantages and disadvantages of the use of smart pens for English learning activities of young children. First, the smart pen's functions and effects will be reviewed from the perspective of producers' declaration. Afterwards, a survey including questionnaires and interviews will be carried out amongst parents whose children have been using smart pens. Their answers, which reflect the effects of smart pens on their children's English learning, will be analyzed to draw out the advantages and disadvantages of the use of smart pens for children's English learning, especially in comparison to the commitments made by suppliers. Finally, recommendations will be made referring the purchase, use, manufacture, and supply of this product.*

Keywords: *smart pen, learning habit, English acquisition, advantage, disadvantage*

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IAQ/ANQ Symposium 2012

New challenges:
Quality and Sustainability in Education of Asia Pacific

3rd August, 2012 (Friday)
Hong Kong

Time:	08:45 – 12:30
Symposium Venue:	Lecture Theatre no. 9 (LT-9), Academic Building I, City University of Hong Kong (CityUHK), Kowloon Tong, Kowloon, Hong Kong (www.cityu.edu.hk)
Target participants:	Any person interested in this topic (expected no. of 60)
Symposium Fee:	Free of Charge (but prior registration is required, acceptance is based on first-come-first-served basis)
Language:	English
Transport:	Ref. (http://www6.cityu.edu.hk/wayfinder/GettingToU/index.htm) For IAQ members and ANQ Congress 2012 participants, a 1-way coach service will be provided from The Salisbury -YMCA Hotel to CityUHK in the morning of 3rd August 2012, but no return service (Details will be posted on the homepage of the ANQ Congress 2012: www.anq2012.org)
Enquiry:	Dr. K.S. Chin Email: mekschin@cityu.edu.hk

Preliminary Agenda for IAQ/ANQ Symposium 2012

(More updates on the homepage: www.anq2012.org)

08:45	Registration
09:00 – 09:30	Opening Session
	Group Photo with Symposium participants
09:30 – 10:15	Keynote Presentation: *"Breakthrough Management in Education of Asia"* *by* ***Prof. Dr. Shoji Shiba, Japan*** *Professor Emeritus of University of Tsukuba, Japan,* *Advisory Professor, Shanghai Jiao Tong University, China, Distinguished Honorary Professor, Indian Institute of Technology, Kanpur, India, and Academician of International Academy for Quality (IAQ), USA*
10:15 – 10:45	Coffee/Tea break
10:45 – 12:30	*Panel Discussion on* *"A big challenge: How can we contribute to a significant improvement of quality and sustainability in Education of Asia Pacific?"* Moderator: **Academician Roland K. Jahnke** Chairman, IAQ Quality in Education Think Tank (QiETT) Speakers from Quality Organizations in Asia Pacific: • Hong Kong (Host) *Dr. Kwai-Sang Chin,* *Past Chairman of Hong Kong Society for Quality (HKSQ)* • Chinese – Taipei (Eastern Asia) *Dr. Kuan Chi-Ming,* *Secretary of Chinese Society for Quality (CSQ)* • India (South Asia) *Rajinder Singh,* *Indian Society for Quality (ISQ)* • Kazakhstan (Central Asia) *Prof. Azat Abdrakhmanov ,* *President of International Association for Quality Managers and Auditors (IAQMA)* • Vietnam (Southeast Asia) *Dr. Ngo Van Nhon,* *Chairman of Vietnam Quality Association of Ho Chi Minh City (VQAH)* • New Zealand (Oceania) *Prof. Nigel Grigg,* *President of New Zealand Organization for Quality (NZOQ)*

Keynote Speaker – Shoji Shiba:

Shoji Shiba will share his rich experience from US, Europe and Asia in his Keynote speech in Hong Kong, 3rd August, 2012

Prof. Shiba is Professor Emeritus of University of Tsukuba in Japan, Advisory Professor, Shanghai Jiao Tong University, China, and Distinguished Honorary Professor, Indian Institute of Technology, Kanpur.

He is, at present, the Chief Advisor to the Visionary Leaders for Manufacturing Program (VLFM) in India. It is an innovative management transformation program being implemented in collaboration with Japan International Cooperation Agency, to create a critical mass of Visionary Leaders to lead India's manufacturing sector in to future growth. It is a globally successful experiment in collaboration with the Indian Industry (Confederation of Indian Industry), Indian Academia (Indian Institute of Technology, Kanpur and Madras) and the Indian Government (National Manufacturing Competitiveness Council).

Professor Shoji Shiba has taught at Massachusetts Institue of Technology's (MIT) Sloan School of Management for 15 years from 1990 to 2004, primarily in the Leaders for Manufacturing program (LFM) as an adjunct professor or visiting professor during his stay at MIT.

From 1996 to 2000, he also was a professor of business administration and dean of the School of Applied International Studies at Tokiwa University in Japan. Professor Shiba was also a co-founder of the Center for Quality of Mangement (CQM).

As an international expert and teacher in TQM Shoji Shiba is responsible for disseminating the practices and methodologies of TQM to the industries and governments of many countries (including Hungary, China, India, Europe, USA).

Shoji Shiba is the author of Four Practical Revolutions in Management. The Japanese edition of his book Breakthrough Management organized and summarized the previous decade of Professor Shiba's investigation into practical methods of surviving in a rapidly changing world, where top management leadership toward business breakthrough is equally important as traditional management techniques (or even more important). The English edition was published in US in 2006 and in France in 2007. Shoji Shiba is also co-author of other important books like A New American TQM and Integrated Management Systems.

Professor Shiba has been received many awards. In 2001, he received the school's Teaching Excellence Award for his work in the course Breakthrough Management at MIT Sloan. He was also honored by the Ministry of Industry in Hungary establishing the annual IIASA Shiba award for his work there in TQM. In January 2002, Professor Shoji Shiba received the coveted honor of being named an Academician of the International Academy for Quality (IAQ). Only 75 people throughout the world are recognized as academicians at any given time. Already 9 months later the Deming Prize Committee announced that Professor Shoji Shiba, Visiting Professor at MIT Sloan, would be awarded the 2002 Deming Prize for Individuals. The Deming Prize (Japan) is one of the highest awards for Total Quality Management (TQM) in the world. In 2005, the European Organization for Quality (EOQ) recognized Shoji Shiba by presenting him the Georg Borel International Medal for individuals' performance in the sense of their mission for the European quality movement. In 2006 Hungarian President awarded Shoji Shiba the Hungarian Republic Grand Cross of Merits, the highest award for a foreign civilian.

For his "immense contributions towards fostering academic exchanges between Japan and India" Shoji Shiba received in 2011 the Award from the Emperor of Japan – The Order of the Sacred Treasure, Gold Rays with Neck Ribbon. In 2012 he received the Padma Shri Award from the Government of India.

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New challenges:
Quality and Sustainability in Education of Asia Pacific

3rd August, 2012 (Friday), 08:45 – 12:30
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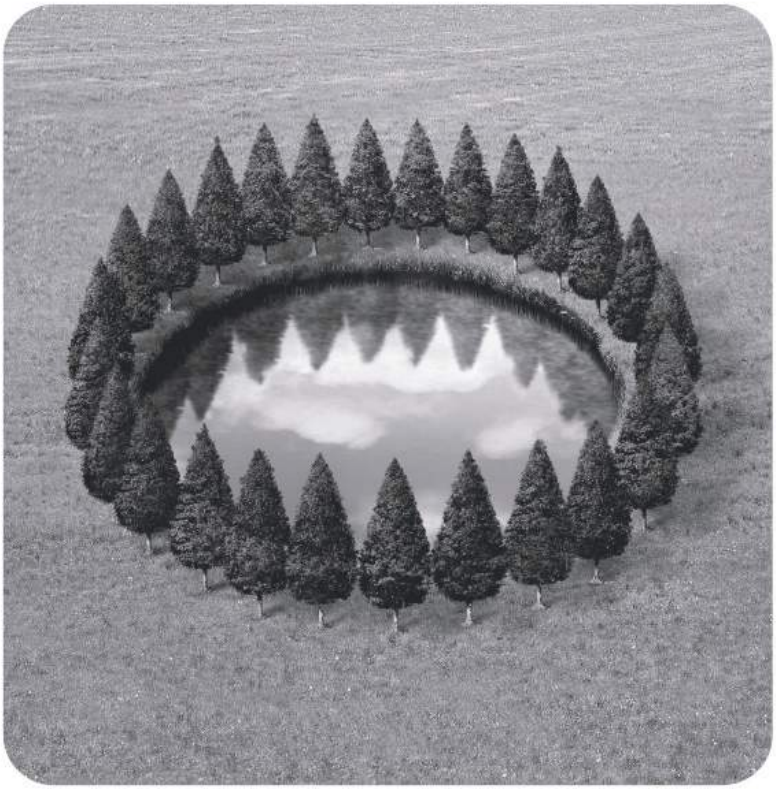

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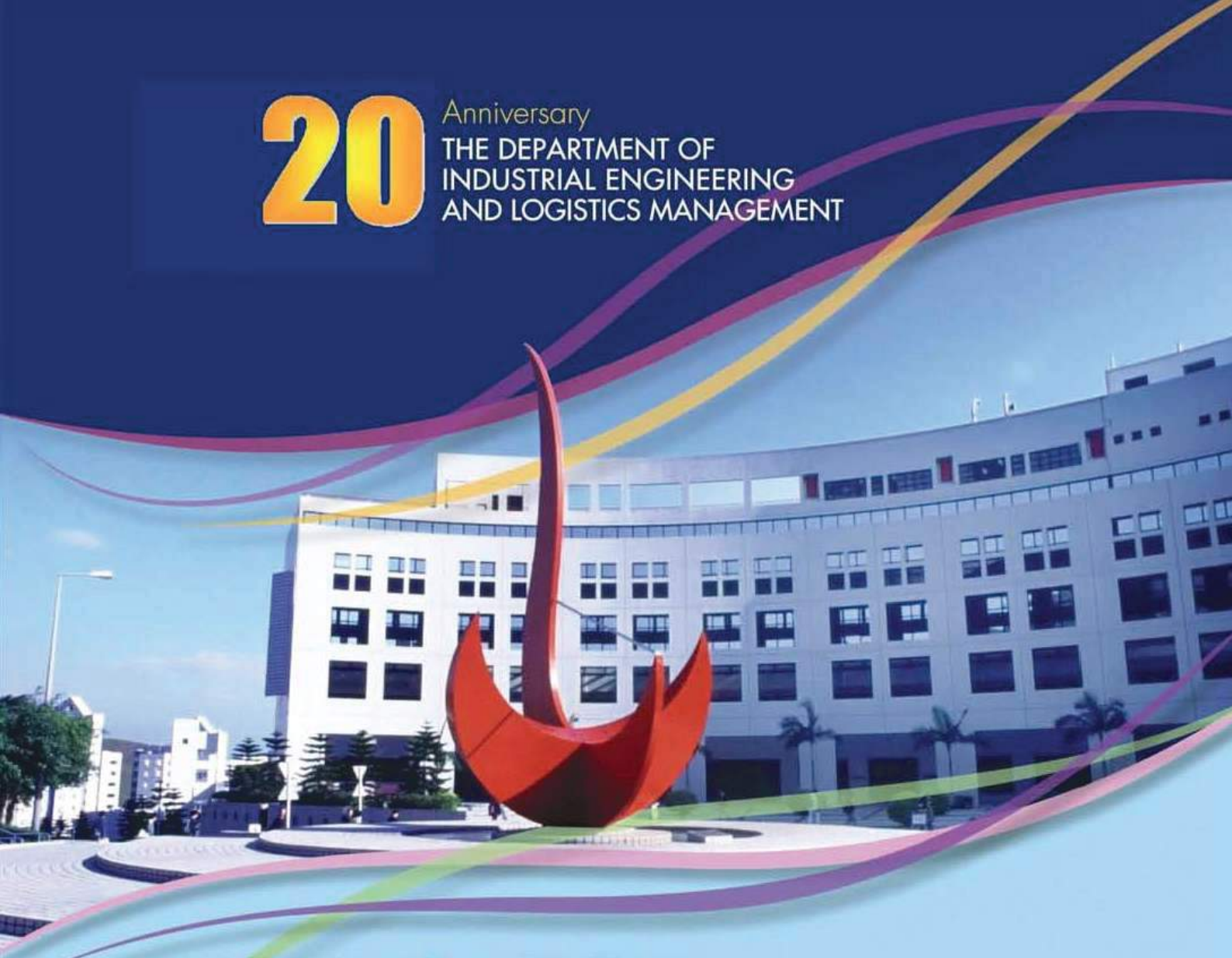

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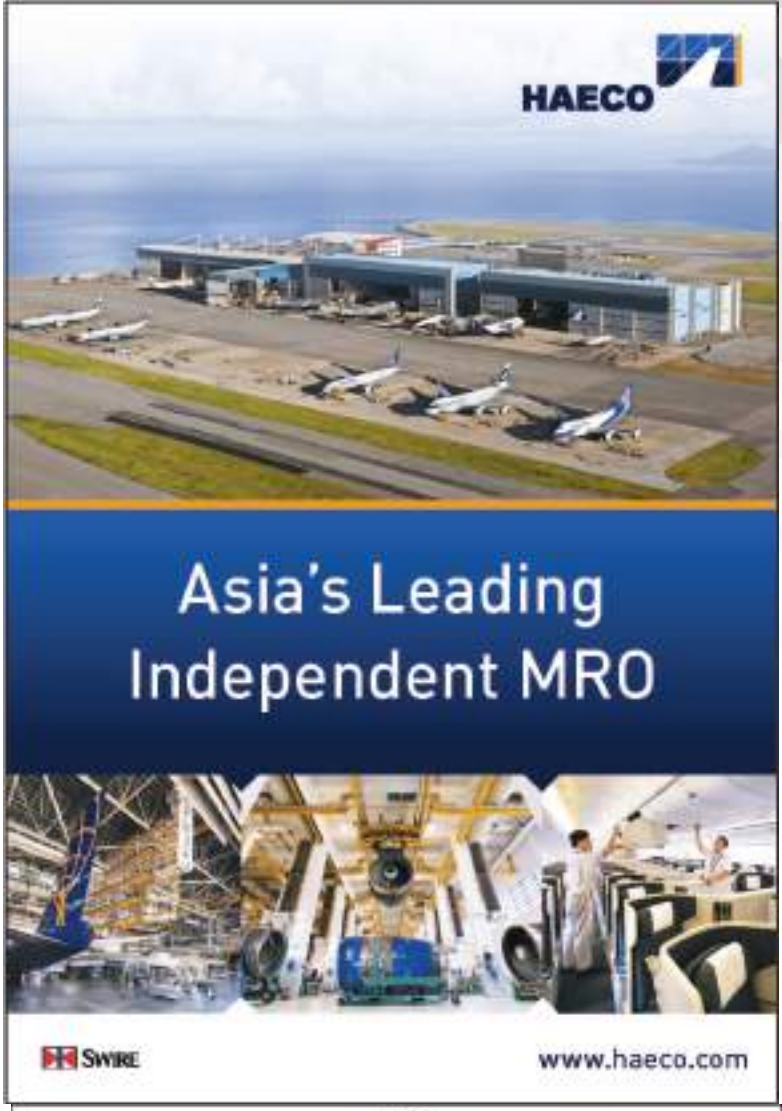

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