

Proceedings of the 18th Annual International Conference on Electronic Commerce

“e-Commerce in Smart Connected World”
Suwon, Korea, August 17-19, 2016

Conference Honorary Co-Chairs:

Toru Ishida, Kyoto Univ., Japan
Norman Sadeh, CMU, USA
Jae Kyu Lee, KAIST, Korea

Conference Co-Chairs:

Federico Casalegno, MIT, USA
Wooju Kim, Yonsei Univ., Korea

Program Co-Chairs:

Sohyeong Kim, Stanford Univ., USA
Sung-Byung Yang, Kyung Hee Univ., Korea

Welcome Message from the ICEC 2016

Welcome to Suwon, and the 18th International Conference on Electronic Commerce (ICEC 2016)!

ICEC has been one of the first and premier information systems conferences specializing on electronic commerce issues since 1998. It has offered a great venue for researchers to exchange research findings on the latest development in the electronic commerce field, and to foster regional and international collaboration within the community.

During the past 20 years, we have observed the world changing to the “connected world”. Stores and customers are connected through electronic commerce, and people are globally connected through social media, messengers, and online communities. Government and its citizens do not only handle civil affairs, but also exchange opinions through electronic government services and free bulletin boards online.

Yes, here comes everybody! Through so-called “O2O (online to offline)” or “on-demand economy” services, various offline services such as calling a taxi, searching for accommodations, using chauffeur services, laundry services, food delivery services, beauty services, etc. are connected to create new experiences and a new market, innovating the preexistent industry. These changes are evidence to how the world has transformed to the “connected world” throughout the past 20 years by the Internet and smart devices.

For the next 20 years, we will see the “smart connected world” phenomenon in which smart technologies and connected technologies combine to change the world. Manual driving will evolve to autonomous self-driving for human safety and convenience. Internet of Things (IoT) and O2O services combine to create smart hospitals and smart homes, respectively. We can define the “smart connected world” as a world in which each object will become smart and inter-connected.

The discourse on the fourth industrial revolution emphasizes the changes in work habits, jobs, and the resultant social influences. For example, the finance sector, through artificial intelligence (AI) technologies, will bring a significant change in the way one works. Business transactions and payment systems will change to more customer-centric transaction methods by which customers will be able to protect their information and determine their prices.

Through smart connected technologies and business models, today’s dark Internet fraught with hackings, crimes, and frauds will become the “Bright Internet” of the future. Prospects of ways to enjoy life as well as production and consumption of culture and arts will change. For instance, one can compose music through creative AI techniques such as Jukedek (Jukedek.com) created by Cambridge alumni. Photographs are transformed into new art works through using convolutional neural network technology such as the Prisma application (app) made in Russia. As one could not experience culture and art services such as online cartoons or Pokémon GO 20 years ago, in the smart connected world of the future, one can enjoy new culture and art services.

In the smart connected world, simple IoT technologies such as the Button Internet and virtual reality (VR) technologies are implemented so that ordinary people are able to make smart connected products and services. In addition, one can construct one's own smart home and analyze the necessary data and network. Ordinary people handle their own AI tools, rather than letting the AI control them.

One nation's perspective of looking at the world will change from the industrial perspective of the production of products and consumer markets. It must be changed to how one nation can construct media and business platforms with originality in the process, in which global consumers' action and people's reactions are globally interconnected.

We must hurry our preparations as the world is changing more rapidly. Therefore, the 18th International Conference on Electronic Commerce (ICEC 2016), focusing on the theme of "e-Commerce in Smart Connected World" is held in Suwon, from August 17th to 19th, 2016. This conference is held in conjunction with the 2016 Spring Korea Intelligent Information System Society (KIIS) conference and SmartConnected.World, a brand new forum for building and preparing for the connected world with smart technologies. At ICEC 2016, world-renowned researchers, experts, business leaders, policy makers, and citizen come together and share their knowledge and hopes for making the better "Smart Connected World".

We are excited about the intellectually stimulating program, which features more than 20 keynote speeches, 21 papers sessions, 15 hands-on tutorials, and 4 master classes. We wish everyone to enjoy the conference and the hospitality of the Suwon, the capital city of Kyonggi Province, close to Seoul, South Korea.

Wooju Kim (Yonsei University), Conference Co-Chair, ICEC 2016

Sung-Byung Yang (Kyung Hee University), Program Co-Chair, ICEC 2016

Min Yong Kim (Kyung Hee University), President of Korea Intelligent Information Systems Society

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Conference Honorary Co-Chairs

- Toru Ishida, Kyoto Univ., Japan
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- Jae Kyu Lee, KAIST, Korea

Program Co-Chairs

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- Sung-Byung Yang, Kyung Hee Univ., Korea

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- Yoonok Jang, MoneyToday News
- Yuni Jeong, Yuni Gallery
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- Chulmo Koo, Kyung Hee Univ.
- Sang-Man Han, Sungkyunkwan Univ.

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- Wooju Kim, Yonsei Univ., Korea

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- Sang-Un Park, Kyonggi Univ.
- Il Im, Yonsei Univ.

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Sponsors



Program at a Glance

Time	August 17, Wednesday					
	Champagne	Nantes	Azalea 1	Azalea 2	Azalea 3	Art Hall
08:00-09:20	Registration & Information					
09:20-10:50	KNW-01		ICECW-01	ICECW-02		
10:50-11:10	Coffee Break					
11:10-12:40	KNW-02					HoW-01
12:40-14:00	Lunch					
14:00-15:30	KNW-03	CRM Master Class	ICECW-03	ICECW-04		HoW-02
15:30-15:50	Coffee Break					
15:50-17:20	KNW-04	CRM Master Class	ICECW-05	ICECW-06		HoW-03
17:20-18:30	Break					
18:30-20:30	Welcome Reception					

Time	August 18, Thursday					
	Champagne	Nantes	Azalea 1	Azalea 2	Azalea 3	Art Hall
08:00-09:20	Registration & Information					
09:20-10:50	KNT-01		ICECT-01	ICECT-02		
10:50-11:10	Coffee Break					
11:10-12:40	KNT-02					HoT-01
12:40-14:00	Lunch					
14:00-15:30	KNT-03	IoT Business Master Class	ICECT-03	ICECT-04		HoT-02
15:30-15:50	Coffee Break					
15:50-17:20	KNT-04	IoT Business Master Class	ICECT-05	ICECT-06		HoT-03
17:20-18:00	Break					
18:00-21:30	Gala Dinner					

Time	August 19, Friday					
	Champagne	Nantes	Azalea 1	Azalea 2	Azalea 3	Art Hall
08:00-09:20	Registration & Information					
09:20-10:50	KNF-01	Serendipity Master Class	KIISS	KIISS	KIISS	
10:50-11:10	Coffee Break					
11:10-12:40	KNF-02	Serendipity Master Class				HoF-01
12:40-14:00	Lunch					
14:00-15:30	KNF-03	Business Model Master Class	KIISS	KIISS	KIISS	HoF-02
15:30-15:50						
15:50-17:20	KNF-04		KIISS	KIISS	KIISS	HoF-03

KNW: Keynote Speeches on Wednesday, August 17

KNT: Keynote Speeches on Thursday, August 18

KNF: Keynote Speeches on Friday, August 19

HoW: Hands-on Tutorials on Wednesday, August 17 (Only in Korean)

HoT: Hands-on Tutorials on Thursday, August 18 (Only in Korean)

HoF: Hands-on Tutorials on Friday, August 19 (Only in Korean)

ICEC: Technical Sessions of ICEC (International Conference on Electronic Commerce, Only in English)

KIISS: Technical Sessions of KIISS (Korean Intelligent Information Systems Conference, Only in Korean)

Session Information for ICEC 2016

WEDNESDAY, AUGUST 17

09:20-10:50 **ICECW-01: Smart Devices** **Azalea1**
Session Chair: Daegon Cho (KAIST)

- Is Smartwatch Perceived as a Wristwatch or a Wearable Device? The Experimental Study for Examining the Categorization and the Perceived Fit with Manufacturer on Consumer Evaluations
Yong Wan Park, Soomin Son, Beomsoo Kim (Yonsei University, Korea)
- Characterizing the Technological Evolution of Smartphones: Insights from Performance Benchmarks
Qiwei Han (Carnegie Mellon University, USA), Daegon Cho (KAIST, Korea)
- Consumer Valuations on Digital Product Innovation
Nila Zhang, Gun-woong Lee (Nanyang Technological University, Singapore)

09:20-10:50 **ICECW-02: Economics of e-Commerce** **Azalea2**
Session Chair: Seongmin Jeon (Gachon University)

- Using a Markov-Switching Approach to Modelling Value Co-creation
Yen-Hao Hsieh, Wei-Ting Chen (Tamkang University, Taiwan)
- Are You a Local or a Visitor? An Exploratory Study on Consumer Behavior in Online Group Buying Commerce
Jiyuan Wang (Beijing University of Posts and Telecommunications), Jiayin Qi (Shanghai University of International Business and Economics, China), Seongmin Jeon (Gachon University, Korea), Xiangling Fu (Beijing University of Posts and Telecommunications, China)
- Does a Customer's Purchase Behavior Have an Impact on its Review Behavior?
Huili Liu, Meng Zhao (Beijing University of Posts and Telecommunications), Jiayin Qi (Shanghai University of International Business and Economics, China)
- An Empirical Analysis of Semantic Network in Online Crowdfunding: Evidence from Kickstarter
Jongho Kim, Minhyung Lee, Daegon Cho, Byungtae Lee (KAIST, Korea)

14:00-15:30 ICECW-03: Social Media Azalea1
Session Chair: Carsten D. Schultz (University of Hagen)

- Effects of Promotion Tweets on the Number of Followers in Micro-Blogging Site
Yi Liu (ESC Rennes School of Business, France), Bernadetta Tarigan (ETH Zurich, Switzerland)
- Driving Likes, Comments, and Shares on Social Networking Sites - How Post Characteristics Affect Brand Interactions in Apparel Retailing
Carsten D. Schultz (University of Hagen, Germany)
- Enhancing Purchase Intention through Social Media Brand Community: The Roles of Social Presence, Interactivity, and Peer Motivation
Chun-Ming Chang (Ming Chuan University), Wen-Hui Cheng (Aletheia University, Taiwan)

14:00-15:30 ICECW-04: Big Data Analytics..... Azalea2
Session Chair: Hong Joo Lee (The Catholic University of Korea)

- Electronic Word of Mouth (eWOM) in the Movie Industry
Ho Lee (Software Policy & Research Institute), Hong Joo Lee, Ruth Angelie Cruz, John Laurence Enriquez (The Catholic University of Korea, Korea)
- Sentiment Classification for Unlabeled Dataset Using Doc2Vec with JST
Sangheon Lee, Xiangdan Jin, Wooju Kim (Yonsei University, Korea)
- Detecting Blog Spam Hashtags Using Topic Modeling
Yoonjin Hyun, Namgyu Kim (Kookmin University, Korea)

15:50-17:20 ICECW-05: Mobile and Social Commerce Azalea1
Session Chair: Habin Lee (Brunel University)

- Analysis on Influencing Factors of Consumers' Purchasing Behavior Online for Furniture: A Case Study on Furniture Malls and Business Centers in Harbin
Ying Li (Northeast Forestry University), Zong-li Zhang (Northeast Forestry University, Jiamusi University), Yue Zhao (Northeast Forestry University, China)
- Understanding the Influence and Service Type of Trusted Third Party on Consumers' Online Trust: Evidence from Australian B2C Marketplace
Cong Cao, Jun Yan, Mengxiang Li (University of Wollongong, Australia)

- How Online Brand Community Participation Strengthens Brand Trust and Commitment: A Relationship Marketing Perspective
Marios Pournaris, Habin Lee (Brunel University, UK)

15:50-17:20 ICECW-06: Recommendation Systems Azalea2
Session Chair: Jaewon Choi (Soonchunhyang University)

- The Impact of Information Amount on the Performance of Recommender Systems
Hyun Sil Moon, Jung Hyun Yoon, Jae Kyeong Kim (Kyung Hee University, Korea)
- The Effectiveness of User-centric Social Interfaces on Evaluating Mobile Recommendations
Jaewon Choi (Soonchunhyang University), Hong Joo Lee (The Catholic University of Korea, Korea)
- Enhanced User Modeling based on Link Attributes for Recommendation System
Inay Ha, Kyeong-Jin Oh, Myung-Duk Hong, Geun-Sik Jo (Inha University, Korea)

THURSDAY, AUGUST 18

09:20-10:50 ICECT-01: Social Network Azalea1
Session Chair: Somayeh Koohborfardhaghighi (Seoul National University)

- How Network Visibility and Strategic Networking Leads to the Emergence of Certain Network Characteristics: A Complex Adaptive System Approach
Somayeh Koohborfardhaghighi, Jörn Altmann (Seoul National University, Korea)
- How Strategic Networking Impacts the Networking Outcome: A Complex Adaptive System Approach
Somayeh Koohborfardhaghighi, Jörn Altmann (Seoul National University, Korea)
- Time-Sensitive Trust Calculation between Social Network Friends for Personalized Recommendation
Mohamed Frikha, Mohamed Mhiri, Mounir Zarai, Faiez Gargouri (University of Sfax, Tunisia)

09:20-10:50 **ICECT-02: Technical Issues of e-Commerce** **Azalea2**
Session Chair: Hyun Jung Lee (Yonsei University)

- A Cross-Cultural Comparison of Information Privacy Concerns in Singapore, Sweden and the United States
Zafer D. Ozdemir, John H. Benamati, H. Jeff Smith (Miami University, USA)

- Increasing the Value of Farm Products: Connecting Farmers and Consumers through an E-commerce System
Gilbert M. Tumibay (Angeles University Foundation), Fernand T. Layug (Santa Rita College of Pampanga), Daisy S. Yap (Angeles University Foundation), Mar Stephen M. Sembrano (Mabalacat City College, Philippines)

- A Smart Orchestrator of Ecosystem in Medical Tourism
Hyun Jung Lee (Yonsei University), Se Young Park, Hae Ran Jin, Mye Sohn (Sungkyunkwan University, Korea)

- An Impact of Information Security Investment on Information Security Incidents: A Case of Korean Organizations
Hansol Lee, Eunkyung Kwon (Ewha Womans University), Kyeongwon Yoo (Sangmyung University), Sangmi Chai (Ewha Womans University, Korea)

14:00-15:30 **ICECT-03: Smart Connected Services** **Azalea1**
Session Chair: Do-Hyung Park (Kookmin University)

- The Use of Software as a Service by Students in Higher Education Institutions
Akinlolu Olumide Akande, Jean-Paul Van Belle (University of Cape Town, South Africa)

- Innovative Service Concept Generation based on Integrated Framework of Design Thinking and VRIO: The Case of Information Supporting System for SMEs in Korea
Bong-Goon Seo, Do-Hyung Park, Daeheon Choi (Kookmin University, Korea)

- Which Group Do You Want to Travel with? A Study of Rating Differences among Groups on Online Travel Reviews
Daehwan Ahn, Hyanghee Park, Byungjoon Yoo (Seoul National University, Korea)

- An NFC-based O2O Service Model in Exhibition-space

Joon-Yeop Lee, Yong-Hyuk Kim (Kwangwoon University), Yourim Yoon (Gachon University, Korea)

14:00-15:30 ICECT-04: Design Science Azalea2
 Session Chair: Younghoon Chang (BNU-HKBU UIC)

- A Document Query Search Using an Extended Centrality with the Word2vec

Wooju Kim, Heewon Jang, Hak-Jin Kim (Yonsei University), Donghe Kim (Korea Railroad Research Institute, Korea)

- Effects of Negotiation Tactics and Task Complexity in Software Agent - Human Negotiations

Rustam Vahidov, Raafat Saade, Bo Yu (Concordia University, Canada)

- Ontology-Based Model of Law Retrieval System for R&D Projects

Wooju Kim, Youna Lee (Yonsei University), Donghe Kim (Korea Railroad Research Institute), Minjae won (INNOPOLIS Foundation), HaeMin Jung (Yonsei University, Korea)

15:50-17:20 ICECT-05: Sharing Economy Azalea1
 Session Chair: Jae Yun Moon (Korea University)

- Implication of the Fit between Airbnb and Host Characteristics: A Trust-Transfer Perspective

Heejeong Han, Chulmo Koo, Namho Chung (Kyung Hee University, Korea)

- Are Uber Really to Blame for Sexual Assault? Evidence from New York City

Jiyong Park, Junetae Kim, Byungtae Lee (KAIST, Korea)

- Calling for a Shared Understanding of the "Sharing Economy"

Sunjooh Oh, Jae Yun Moon (Korea University, Korea)

- Reducing Congestions in Decentralized Matching by Using Preference Signaling

Shigeo Matsubara, Ryuya Kagifuku (Kyoto University, Japan)

15:50-17:20 **ICECT-06: FinTech** **Azalea2**
Session Chair: Taekyung Kim (The University of Suwon)

- Successful Crowdfunding: The Effects of Founder and Project Factors
Meng Hong Por (One More Restaurant, Cambodia), Sung-Byung Yang (Kyung Hee University), Taekyung Kim (The University of Suwon, Korea)

- Critical Factors of the Lending Intention of Online P2P: Moderating Role of Perceived Benefit
Qin Yang, Young-Chan Lee (Dongguk University, Korea)

- A Qualitative Study on Adoption of Biometrics Technologies: Canadian Banking Industry
Inkingi Fred Gatali (Bishop's University), Kyung Young Lee (Dalhousie University, Canada), Sang Un Park (Kyonggi University), Juyoung Kang (Ajou University, Korea)

- What Motivates Chinese Consumers to Adopt FinTech Services: A Regulatory Focus Theory
Younghoon Chang (BNU-HKBU UIC, China), Siew Fan Wong (Sunway University, Malaysia), Hwansoo Lee (Dankook University, Korea), Seon Phil Jeong (BNU-HKBU UIC, China)

Papers only in Proceedings

- What Makes Social Shopping? Re-examining the Effects of Multi-attributes Utility, Trust and Relationship on Social Shopping Intention
Yanya Ruan, Qi Li, Xiaoyou Xu (Xi'an Jiaotong University, China)

- A Study on Consumer Acceptance of Online Pharmacies in China
Meng Yin, Qi Li, Zhilin Qiao (Xi'an Jiaotong University, China)

- Electronic Word-of-Mouth: A Systematic Perspective and Multilevel Analysis
Xiaorong Wang, Lifang Peng (Xiamen University, China), Xin (Robert) Luo (The University of New Mexico, USA)