A Scholarly Magazine of the Decision Sciences Institute

Vol. 49, No. 2 Marc

March 2018





Decision Sciences Institute Election Results

DECISION

Vivian Landrum

The Decision Sciences Institute holds Board member elections every year, following an open recommendation and nominations process. After a 30-day voting time frame via a secure email voting system, the DSI membership made their decision on who would serve on the 2018-2019 Board and lead the Institute into a new decade. >>

NFORMATION TECHNOLOGY

2018 ANNUAL MEETING



Big Data and Information Privacy

Silvana Faja and Silvana Trimi

Big Data has disrupted the traditional information value chain due to numerous new sources of data (e.g., SNS), new ways of collecting data (e.g., smart sensors), and more recently, much advanced analytics such as artificial intelligence and deep learning. >>



Make Plans Now to Attend DSI 2018 Annual Meetingal

Subodha Kumar

Submissions are now being accepted. We cordially invite you to join DSI, the global community of scholars in the decision sciences, in debating key issues for the future of business. Come and share your views with experts from the six continents! >>

FEATURES

- 3 President's Letter Farewell from outgoing DSI President Gupta
- 4 From the Editor Maling Ebrahimpour provides an overview of this issue.
- 9 Information Technology "Big Data and Information Privacy"
- **17** Decision Sciences Journal Update Preview of articles published in DSJ 49(1)
- 20 Decision Sciences Journal of Innovative Education Update Preview of articles published in DSJIE Volume 16, Issue 2

SPECIAL REPORTS

- 22 DSI Election Results
- 23 DSI 2018 Annual Meeting
- 26 In Memoriam
- **27** Home Office Update
- 29 Latta Call for Nominations
- **30** From the Regions EDSI
- **32** From the Regions SWDSI
- **34** Regional Officers
- **36** Open Academic Positions
- **37** Past Presidents
- 38 DSI Fellows
- **39** Calendar
- 39 DSI Membership Rates

2017-2018 DECISION SCIENCES INSTITUTE OFFICERS

President

Jatinder (Jeet) N. D. Gupta, University of Alabama in Huntsville

President Elect

Johnny Rungtusanatham, The Ohio State University Immediate Past President

Funda Sahin, University of Houston

Vice President for Finance (Treasurer) Joy Field, Boston College

Secretary

Anand Nair, Michigan State University Functional Vice Presidents:

Vice President for Global Activities Eldon Li, National Chengchi University Vice President for Marketing

Srinivas Talluri, Michigan State University Vice President for Member Services

Kathryn Zuckweiler, Midwestern State University Vice President for Professional Development Soumen Ghosh, Georgia Institute of Technology

Vice President for Publications Jennifer Blackhurst, University of Iowa

Vice President for Technology Natalie Simpson, University at Buffalo-SUNY

Vice President for the Americas Division Vijay Kannan, Utah State University

Vice President for the Asia-Pacific Division Ravi Kumar Jain, Symbiosis Institute of Business Management, Hyderabad Campus Vice President for the European Division Markku Kuula, Aalto University

Executive Director

Vivian Landrum, University of Houston

Decision Sciences Journal **Co-Editors** Cheri Speier-Pero, Michigan State University Mark Ferguson, University of South Carolina

Decision Sciences Journal of Innovative Education Editor

Matthew Drake, Duquesne University

Decision Line **Editor** Maling Ebrahimpour, University of Rhode Island

2018 Program Chair

Subodha Kumar, Temple University

2018 Associate Program Chairs Carmela Di Mauro, University of Catania Kevin Linderman, University of Minnesota

Annual Meeting Webmaster and CMS Manager Stephen Ostrom, Arizona State University

Regional Presidents

Asia-Pacific Tritos Laosirihongthong, Thammasat University, Thailand

European Subcontinent Gyula Vastag, Szechenyi University, Hungary

Indian Subcontinent Abhijeet K. Digalwar, Birla Institute of Tehnology &

Science, Pilani Midwest

Peggy Daniels Lee, Indiana University – Indianapolis

Northeast Pedro Reyes, Baylor University

Southeast Suzie Smith, Presbyterian College

Southwest

Mohan Rao, Texas A&M University-Corpus Christi Western

Natasa Christodoulidou, California State University,Dominguez Hills DECISION LINE is published five times a year by the Decision Sciences Institute to provide a medium of communication and a forum for expression by its members, and to provide for dialogue among academic and practitioner members in the discipline. For more information about the Institute, please call 713-743-4815.

News Items: Send your news items and announcements to the editor at the address below.

Advertising: For information on agency commissions, annual contract discounts, and camera-ready copy, contact the managing editor. Market- place classifieds (job placement listings) are \$60 per 50 words.

Membership Information/Change of Address: Contact the Decision Sci- ences Institute (DSI), University of Houston 4750 Calhoun Rd, Room 325A, Houston, TX 77204-6021; Phone: 713-743-4815, info@decisionsciences.org

Website: Decision Line feature articles and more information on the Decision Sciences Institute can be found on the DSI website at www.decisionsciences.org

Editor: Maling Ebrahimpour, College of Business Administration, The University of Rhode Island, 7 Lippitt Road, Kingston, RI 02881; <u>mebrahimpour@uri.edu</u>

President: Jatinder (Jeet) N. D. Gupta, University of Alabama in Huntsville

Executive Director: Vivian Landrum, University of Houston; <u>vlandrum@bauer.uh.edu</u>

ISSUE MONTH January issue March issue May July issue October issue DEADLINES FOR AUTHORS December 10th (prior year) February 10th April 10th June 10th September 10th

VISION STATEMENT

Decision Sciences Institute will be recognized globally as a scholarly professional association that creates, develops, fosters and disseminates knowledge to improve managerial decisions.

MISSION STATEMENT

Decision Sciences Institute provides forums to create, disseminate and use knowledge to improve managerial decision making involving systems and people.

ACHIEVEMENTS IN REALIZING THE PROMISING FUTURE

Jatinder (Jeet) N. D. Gupta College of Business University of Alabama in Huntsville

I am deeply humbled and honored to have served as DSI President from April 1, 2017 through March 31, 2018, following the excellent performance of all previous DSI leaders. It has been an exciting and thrilling experience to participate as DSI President especially as it gets ready to celebrate its golden jubilee in 2019. Over these 49 years, we have built a strong membership base and DSI has become a truly global society with a well-established and recognized identity and has reached out to ever expanding set of professional communities in decision sciences.

It has been an invigorating experience to have the opportunity to lead a team of committed individuals to drive DSI to its next level of evolution: a premier society that is truly global in spirit and action with an overarching impact on the future developments in decision sciences. This has been possible only because of the dedicated service of numerous past and present DSI board members and because of the active participation of our members. Collectively, we have made our Institute what it is today. Our actions and visions assure that DSI will remain responsive to our needs and serve decision sciences professionals by being a leader now and in the future.

In the rest of this President's letter (and my last one in this capacity), I (1) describe our Institute's premier status; (2) delineate achievements and progress on several initiatives from April 1, 2017 through March 31, 2018 in realizing the promising future; (3) suggest some possible future directions for decision sciences research, teaching and community service areas; (4) invite each of us to participate in ways that will serve our individual, personal and professional needs; and (5) offer a vote of thanks.

DSI IS THE PREMIER SOCIETY FOR DECISION SCIENCES

In one of my previous letters, I stated that DSI is alive and well. It has developed an increasing sense of purpose through its achievements. While we had some bumps on the road and a few challenges during the past few years, we are well on our way to recovery. I am happy to now report that DSI is the premier society for DSI academicians and professionals. It is the most comprehensive and interdisciplinary professional society in disciplines represented in decision sciences. This theme was evident from the last annual DSI conference in Washington DC. At that conference, many DSI members and conference participants shared their enthusiasm about their participation in DSI and their excitement to be involved in the society with a well-defined purpose and plans for its future.

As I shared in my previous letters, an interesting aspect of DSI conferences is the melding of the matured and young professionals. At these conferences, you can interact with many of DSI's previous presidents, board members, and leaders in decision sciences. At the annual DSI conference last November, this was guite evident by the observations in several special sessions including the new member welcome reception and various faculty development programs that were seen as a mechanism to help our younger members learn the ropes to prosper and grow in their careers. In addition, the Washington DC conference included keynotes by practitioners and academicians that helped the participants to be effective leaders of their organizations by enhancing their organization's effectiveness and productivity. These keynotes and other invited and contributed sessions were well received by the participants.

As the DSI President-Elect and President from April 1, 2016 through March 31, 2018, I had the opportunity to travel to all regional DSI conferences including its annual conferences and had an opportunity to



Jatinder (Jeet) N. D. Gupta, College of Business, University of Alabama in Huntsville

Maling Ebrahimpour is the Dean and Professor of Supply Chain in the College of Business Administration at The University of Rhode Island. He is an active researcher and has authored or coauthored over 100 articles that have been published in scientific journals and proceedings. Most of his work focuses on various issues of quality in both service and manufacturing companies. He received his PhD in husiness administration from University of Nebraska-Lincoln and has served on the editorial review board of several journals, including Journal of Ouality Management. Journal of Operations Management, and International Journal of Production Research. mebrahimpour@uri.edu

It is with a great sadness that we inform our readers of the passing away of one of the pioneers in the area of Decision Sciences and the 1983 DSI president, Larry Moore. Professor Moore was a prolific writer authoring many articles and books. We send our sympathy and condolences to his family.

Jeet Gupta has written his last letter to you as the President of DSI. In his letter he touches on highlights of DSI accomplishment during his tenure as the President and the work ahead for the organization. He delineates the role of DSI as the premier society for Decision Sciences, increased membership and annual conference participation, revision of DSI constitution, discussion on creation of DSI Colleges, expanded role of regions, improving communication with members, and finally invites all members to participate in the upcoming Annual Conference in Chicago.

In their article titled "Big Data and Information Privacy," authors Silvana Jaja and Silvana Trimi provide an in-depth discussion of big data, privacy, risk in big data management, and government regulations. They conclude that sophisticated AI can help the big data (if collected properly) usher new opportunities and insights helping to solve major problems that can lead to major economic, scientific, and social impact.

Cheri Speier-Pero, editor of Decision Sciences Journal (DSJ), provides us with a list of articles along with their abstracts that will appear in the DSJ, volume 49, Issue 1. There are six articles in this issue examining topics such as Employee performance and role of experience, supplier selection, and a simulation based optimization of capacitated assembly systems.

In the latest issue of Decision Sciences Journal of Innovative Education (DSJIE), Matthew Drake, the editor of the journal, provide a list of articles along with their abstracts that are published in Volume 16, Issue 2 of this journal. The list of articles includes topics such as Experiential Learning for Logistics and Supply Chain Management, Teaching Line Balancing through Active and Blended Learning, and Examin-

DECISION LINE FEATURE EDITORS:

Dean's Perspective, Maling Ebrahimpour, University of Rhode Island mebrahimpour@uri.edu

Doctoral Student Affairs, Varun Grover, Clemson University, vgover@clemson.edu

Ecommerce, Kenneth E. Kendall, Rutgers, The State University of New Jersey <u>ken@thekendalls.org</u>

From the Bookshelf, Kirsten M. Rosacker, Minnesota State University-Mankato <u>kirsten.rosacker@mnsu.edu</u>

In the Classroom, Kathryn Zuckweiler, Midwestern State University of <u>kathryn.zuckweiler@mwsu.edu</u>

Analytics and Data Science, Subhashish Samaddar, Georgia State University, <u>s-samaddar@gsu.edu</u>

Information Technology, Silvana Trimi, University of Nebraska-Lincoln, <u>silvana@unl.edu</u>

In the News, Vivian Landrum, Decision Sciences Institute, <u>vlandrum@bauer.uh.edu</u>

International Issues, Minoo Tehrani, Roger Williams University, <u>mtehrani@rwu.edu</u>

Membership Roundtable, Gyula Vastag, National Szechenyi University gvastag@gmail.com

Supply Chain Management, Daniel A. Samson, University of Melbourne, Australia <u>d.samson@unimelb.edu.au</u>

Research Issues, Mahyar Amouzegar, University of New Orleans, mahyar@uno.edu

ing the Relationship between Math Self-Efficacy and Statistics Motivation in the Introductory Business Statistics Course.

This issue of Decision Line contains the results of the DSI election. Congratulations to the newly elected officers: President-Elect Janet Hartley (Bowling Green State University); VP Finance, Alan Mackelprang (Georgia Southern University); VP Global Activities, Wendy Tate (University of Tennessee-Knoxville);

VP Professional Development, Sriram Narayanan (Michigan State University); VP Member Services, Shanan Gibson (Texas A&M University); and VP European Division, Carmela di Mauro (Università di Catania).

Subodha Kumar, DSI 2018 Program Chair provides some details about the upcoming conference with CONTINUED ON PAGE 19

CONT. FROM PG. 3 int

interact with DSI professionals from around the world. In all these interactions, I found an excitement and pride in their participation in DSI. Thus, we have succeeded in our vision of a premier global DSI.

ACHIEVEMENTS AND INITIATIVES DURING THE 2017-18 YEAR

Using the framework of alignment, agility, accuracy, accessibility, and adaptability that I suggested in the May 2017 President's Letter, the following paragraphs summarize, with some repetitions from my previous letters, the achievements during the period April 1, 2017 through March 31, 2018 in realizing the promising future for DSI. I also report on various initiatives and activities designed to enhance value to our members on one hand and to move DSI forward on the other.

"We have developed a structure and procedures to implement the concept of DSI colleges as focused groups to serve the common interests of the subgroups of DSI members."

• Increased membership and annual conference participation: I am excited to report that due to the hard work of the DSI Board, conference program committee, the DSI home office and several volunteers, the number of DSI members and the number of participants show a significant increase over the previous years. In addition, the

participants perceive the annual DSI conference to be of high quality. These results show that DSI is growing in both quality and quantity and is transforming itself to be a truly service oriented institute to provide significant value to its members and the decision sciences profession. These results also show the process of alignment, agility, accuracy, and adaptability is taking shape and is helpful in the future growth of DSI.

 DSI strategic goals and objectives: The DSI Board worked hard on creating and approving a five-year strategic plan that ensure DSI policies and procedures are aligned, agile and accurate. This five-year strategic plan is available for review on the DSI website and outlines the strategic goals with their priorities, identifies energy and resources required, improves efficiencies and effectiveness of operations, and sets measures and performance metrics. The plan includes both short and longterm goals and creates a clearly defined roadmap with key performance indicators for incoming and future DSI leadership over that five-year period.

- DSI constitution revisions: The revised constitution updates and accurately aligns various goals, policies, and processes used at DSI. It also is adaptive and timely, and forward-looking to create opportunities for future growth. This revised DSI constitution (1) reduces the possibility of conflicting information in various documents by (1) merging the Constitution and the Bylaws; (2) creates flexibility and agility in making and implementing decisions; (3) implements the decisions made by the recent three DSI Board of Directors; and (4) streamlines several processes to remove redundancy and enhance membership value. This draft constitution, which we briefly discussed at the DSI General Body meeting in Washington DC, is with a Georgia attorney who is in the process of making recommendations to bring it into the 21st century and align better with current non-profit standards and practices. As soon as the DSI Board has received and reviewed his comments, we will send the revised constitution (whatever form it takes) to the membership for ratification. Following the ratification of the revised constitution, we will complete and approve the revision and update of the Policies and Procedures to align with the revised Constitution. We will share these results with DSI members as soon as these processes are completed.
- DSI colleges: We have developed a structure and procedures to implement the concept of DSI colleges as focused groups to serve the common interests of the subgroups of DSI members. Upon their approval by the DSI Board, we will work on

PRESIDENT'S MESSAGE

CONT FROM PG 5

establishing a few colleges that the members find appropriate and timely.

- DSI publications: As I shared in my earlier communication, to be adaptive and responsive to ever-changing needs requires us to improve the quality of our publications. Therefore, the Board of Directors and the editor-in-chiefs of DSI publications have been working hard to prepare plans to enhance the quality of the publications and perhaps clarify and redefine the scope and editorial structure of the publications. During this process, the DSI Board appointed Professor Mark Ferguson as coeditor-in-Chief of our flagship Journal, Decision Sciences (DSJ) to work with the current editor-in-chief Cheri Speier-Pero to enhance the scope of DSJ and to improve its quality and reputation. Efforts are underway to develop plans and activities for including our Decision Sciences journal in at least one of the three indices: Financial Times, Business Week, and UT Dallas List.
- Information technology systems: To be agile, accurate, accessible and service-oriented, we have implemented a restructured website, an improved member management system, and a new conference management system. I am happy to report that these new systems enable us to register participants for the DSI annual conference and DSI regional conferences. Further system implementations include searchable membership directory and expanded membership resources. We can now capture the needed data that can define and delineate our broad member base, including the member's affiliation with a specific region and their areas of interest.
- Enhancing accounting processes and program: In order to be financially responsible and more easily comply with the legal requirements of our non-profit 501(c)(3) status, the Home Office has completed its move to QuickBooks as its new accounting system. This move has provided DSI with a more cost-effective system that allows for

process streamlining and an increased flexibility in reporting. The additional ability to interface with other systems and easier financial management and tracking has enabled the Home Office to serve the needs of the DSI regions much more effectively and efficiently. As a result, we are able to get more timely and accurate accounting information about various DSI activities. In addition, the auditing process now takes less time and ensures accuracy.

- Ensuring that DSI remains a service organization: During the process of revising the DSI constitution and preparing the proposed strategic plan, we reinforced the basic core value of DSI as a service organization. Our institute is committed to serving its members and the decision sciences profession. Therefore, in all its actions, the DSI Board and Home Office remain committed to ensuring that DSI remains a service organization and enhances its capabilities and activities to enhance the effective and efficient service it provides in as flexible a manner as possible. Our proposed revisions of the DSI constitution, policies and procedures, and strategic plans ensure that this core DSI value is preserved. We are very conscious and explicit about this core value in all our future work.
- Implementing decisions: During 2017-2018, we placed high priority in implementing decisions in addition to making decisions. Thus, for example, we implemented the decision to enable non-DSI members to participate in regional DSI conferences by paying a higher conference registration fee. We also implemented several decisions to enhance the services provided by DSI Home Office. While we made good strides in implementing decision, more work lies ahead in this area. Knowing the incoming President, President-Elect, and the DSI Board, I am confident that we will continue these efforts in the future and will excel at implementing the decisions made to better serve our members and the decision sciences profession. Further, we will ensure the consistency and

PRESIDENT'S MESSAGE

CONT FROM PG 6

continuity of decisions and actions of various DSI Boards in the future.

- Expanded role of regions: As DSI President-Elect and President, I visited various regional conferences and had discussions with the regional officers and board of directors. It became guite clear that regions are an integral part of DSI and provide an essential outreach, one of the important and significant core values to our members and the decision sciences profession. During these discussions, it also became evident that the regions play an essential and significant role in reaching out to those members who, in addition to sharing their research results, are primarily interested in instructional innovations and teaching pedagogy. I am happy to report that some regional conferences in 2018 are including several innovative and expanded workshops and plenary sessions that provided expanded coverage of teaching and research horizons to the conference participants. This new and expanded role of DSI regions is useful in propagating the One DSI to our members and the profession.
- Improving communications with members: As I reported earlier, during my visits to the regional conferences, I also heard the need for expanded and improved communications with members. Expanding the President's letter in the Decision Line is one effort to enhance communication and information flow to our members. In addition, the Board of Directors is working on strategies and tactics to enhance and improve communications with members. In this regard, we would like to hear ideas for (a) the types of communications needed; (b) the mode of communications; and (c) the frequency of such communications. With serving our members better, we have appointed an ad-hoc committee to investigate the use of social media. Working together, we can improve and enhance the quality and quantity of communications needed for us to be effective and efficient in achieving the DSI strategic goals.

POSSIBLE DIRECTIONS FOR THE DECISION

SCIENCES PROFESSION

I would like to share my vision for our profession and its contribution to the world. Since its inception, DSI academicians and practitioners have participated in solving hard and complex organizational and technical problems at the firm and the industry level. During the past century and the beginning of this century, we can be proud of our accomplishments to enhance industrial productivity, quality of life, and working conditions in almost all industry government sectors. In doing so, we have contributed at various levels within a firm, from the shop floor to the executive board. However, it is time for us to widen the scope of the clientele we serve. In the emerging world, several other problem areas deserve our attention and our expertise. Therefore, I suggest that we widen our horizons to include society as a unit requiring the solution of problems utilizing our expertise and collective abilities. Thus, for example, what does it take to manage natural disasters like Hurricanes Katrina? What can we contribute to efforts in saving lives and minimizing disruptions? How can we contribute to mitigate the spread of an epidemic? How can we avoid the upcoming world crisis in electric power availability? How can we make our governments be more responsive and efficient? Perhaps it is time for us to initiate debate as to what our role in the emerging world is. Perhaps we can use some sessions at future DSI conferences and publications to develop such themes. Thus, while we work on the current initiatives to their completion and implementation, I suggest that efforts in this direction are worthy of consideration.

AN INVITATION TO PARTICIPATE IN DSI AND THE ANNUAL CONFERENCE IN CHICAGO

From the brief description of various activities and accomplishments from the last year, it is clear that while DSI has become a premier institute and has accomplished a lot, much work is still to be done to maintain and enhance contributions that DSI can make to its members and profession. As I stated **PRESIDENT'S MESSAGE**

CONT. FROM PG. 7

earlier, successful completion of DSI activities depends on the fullest extent of active participation in carrying out these works by its members. DSI is our institute. It was created by us—for us, and hence, it is up to us to enable it to contribute to our professional growth and career enhancements. Therefore, I once again invite everyone to get involved in various DSI activities by presenting papers at the conferences, publishing in our journals, serving on various committees and on editorial boards, holding board positions, persuading and nominating our members for various volunteer positions, voting in DSI elections, and participating in various networking opportunities including being mentored or mentoring students and junior faculty members. This will ensure that DSI is aligned,

agile, accurate, accessible, and adaptable for every one of us.

"With this experience, I invite each of our members to jointly complete various activities that will create value for each of us and will enhance our society and profession. There is ample variety of activities and each one of us can participate in doing whatever we like and value the most."

In this regard, I share my own experience of participating in professional and academic societies. Over the fifty-plus years of my professional and academic career, I have participated and volunteered for various activities and offices (elected and appointed) in several associations like DSI. Each time I have undertaken a volunteer task with various societies. I have created more value for myself than the effort I had spent in doing the task. In addition. I contribute to the effort to assure that our future

is bright and full of excitement. With this experience, I invite each of our members to jointly complete various activities that will create value for each of us and will enhance our society and profession. There is ample variety of activities and each one of us can participate in doing whatever we like and value the most. Above all, as I shared in my earlier letters, the water is warm and the swim is enjoyable. It is accessible to everyone and is quite adaptive, agile, aligned, and accurate. Thus, I renew our earlier invitation to everyone to jump in and have a good time.

One way to ensure your participation is to ensure that you plan on participating and contributing (perhaps by submitting a paper for presentation) to the 2018 Annual DSI Conference in Chicago that promises to be high quality and relevance. Detailed information can be found at https://decisionsciences. org/annual-meetings/national-dsi/

A VOTE OF THANKS

Earlier in the President's letters, I stated that I have been fortunate to work with highly committed, dedicated, able, and willing people to do whatever was needed to move DSI to the next level of its evolution. Without their support, participation, and encouragement, it would not have been possible for us to make DSI the premier society for our profession. I appreciate their support and thank them personally for the hard work they have done and continue to do. These individuals (too many to mention by name) include all those who have served DSI in various capacities, as Presidents, board members, committee chairs and members, conference chairs, track chairs, and members of program committees, presenters, reviewers, and discussants at sessions, volunteers at various DSI events, members our great institute and profession, the able staff of DSI Home Office under the leadership of our Executive Director, Vivian Landrum, the College Dean Jason Greene, Department Chair Fan Tseng, and faculty members in the College of Business at the University of Alabama in Huntsville. To each one of these colleagues and friends, I express my heartfelt thanks and congratulate them on the job well done. We could not have succeeded without them and their excellent work and support.

Keep up the good work!!!!

Jatinder (Jeet) N. D. Gupta DSI President College of Business University of Alabama in Huntsville

BIG DATA AND INFORMATION PRIVACY

There is no question that Big Data (BD) holds great potential for a wide range of benefits for individuals, businesses, government, healthcare, and society in general. In the advent of the digital age, BD has helped facilitate urban planning, national security, college admissions, hiring or dating, just to mention a few examples. For businesses, big data offers opportunities to achieve competitive advantage through business intelligence, improved decisionmaking and innovation for new products and tailored services.

Big Data has disrupted the traditional information value chain due to numerous new sources of data (e.g., SNS), new ways of collecting data (e.g., smart sensors), and more recently, much advanced analytics such as artificial intelligence and deep learning. Consequently, BD has received a significant amount of attention by researchers and practitioners (Abbasi et al., 2016). However, the focus has been mostly on the technical aspects of BD, including data security, but not enough on people, their social and institutional environments. One area that is increasingly and urgently demanding particular attention is privacy. Data security and privacy is considered by experts as one of the top three issues related to data analytics, along with data quality and new enabling technologies, such as machine learning and AI (Davis, 2018). While most of organizations have focused on security, privacy is becoming a top concern, particularly because of the new EU's General Data Protection Regulation (GDPR) privacy law going into effect on 25th of May, 2018. While the new rules come from Europe, they impact organizations globally.

Silvana Faja is a Professor of Computer Information Systems at the University of Central Missouri. She received her Ph.D. in Management Information Systems from the University of Nebraska-Lincoln. Her research areas include issues of privacy and security, electronic commerce, big data and analytics, e-health, agile development, and IS education topics such as online education, collaborative learning and adoption of agile development in the classroom. She has published in journals such as Journal of Software Maintenance and Evolution, Communications of the Association for Information Systems, International Journal of Electronic Business, Information Systems Education Journal. Service Business: An International Journal, and Journal of Information Science and Technology. She has served as a reviewer for several journals and conferences and as technical reviewer for textbooks.



Silvana Faja University of Central Missouri, Department of Computer Information Systems and Analytics, Warrensburg, MO, USA, <u>sfaja@ucmo.edu</u>

Silvana Trimi is an Associate Professor in Department of Supply Chain Management and Analytics at the University of Nebraska -Lincoln. Her research interests are on Big Data, Artificial Intelligence and Machine Learning, Green IT and Supply Chain Management, Social Networking, Organizational and IT Innovation, Digital Convergence, and Knowledge Management. She has published more than 60 articles in such journals as Communications of the ACM, International Journal of Production Research, Journal of World Business, Communications of the AIS, Information and Management, Journal of Computer Information Systems, Industrial Management and Data Systems, International Journal of Public Administration, Journal of Innovation and Knowledge, International Journal of Knowledge Management, Management Decision. and others.



Silvana Trimi University of Nebraska-Lincoln, Department of Supply Chain Management and Analytics silvana@unl.edu

The main issue of BD is that its goals and those of privacy are diametrically opposed: BD relies (and therefore, aims) on collection, storage, sharing, and analysis of data; while privacy aims at protecting this data, thus, attempts to minimize most of these processes. While individuals, organizations, and governments are concerned about data privacy, yet they seek the benefits that can be acquired from BD analytics, which may rely on invasion of privacy. This phenomenon has been referred to as the 'privacy paradox'.

INFORMATION PRIVACY

There have been several definitions and conceptualization of information privacy. A well-known information privacy measure in IS research is the Concern for Information Privacy (CFIP) (Smith et al., 1996). This measure consists of four dimensions of privacy concerns: collection, secondary use, access, and errors. 'Collection' represents the concern that an excessive amount of data is being collected and stored by organizations. 'Secondary use' refers to concern that data that is collected for one purpose is being used for another purpose. The measure further distinguishes between concerns about internal and external secondary use. 'Errors' refer to concern about protection measures against accidental and deliberate errors in data handling. 'Access' is about the concern that data is readily available to people who are not properly authorized to access the data. These dimensions, identified more than two decades ago, hold true and have become even more critical in the context of BD, most worrisome being collection and secondary use. While concern about data collection, related to the volume aspect of BD, is most obvious.

secondary use is what BD is all about: its value lies in identifying secondary uses of data.

With the wide spread use of networked and web-based technologies, other measures of privacy concerns were developed. Malhotra et al. (2004) introduced Internet User's Information Privacy Concerns (IUIPC). This measure includes three dimensions: control, awareness, and collection. Control refers to the degree at which the individual has control over personal information. Awareness represents the degree to which a consumer is concerned about his/her awareness of organizational information privacy practices. Collection is the degree to which a person is concerned about the amount of individual-specific data that others possess relative to the benefits received. James et al. (2016) introduced the concept of Interpersonal Privacy Identity (IPI) which comprises the information belief and interaction control belief, in other words, the right to control what information is released and to whom. More recently, Kayhan (2016) distinguished between situational privacy and dispositional privacy. Situational privacy concern refers to the concern related to a specific online provider, and varies depending on the context of the interaction. Dispositional privacy concern depends on the individual personality characteristics and their overall concern about privacy. Using the above measurements, significant research has indicated that privacy concerns affect user intention to use technology, thus it is very important to be dealt with.

We are at the beginning of new era of BD: that of artificial intelligence (AI). Analytics tools utilizing machine learning are

"These dimensions. identified more than two decades ago, hold true and have become even more critical in the context of BD, most worrisome beina collection and secondary USP"

DSI / DECISION LINE 10

precursors of tomorrow's super-intelligent systems, and ultimately of "general AI", machines that will perform the full range of human cognitive tasks. AI is contributing to societal transformational "3000 times the impact" of the Industrial Revolution (The Economist, 2016). The following breakthroughs are making significant impact on: data collection and aggregation - IoT, ubiguitous devices, and cloud networking; data processing - better business intelligence (BI) and algorithms (AI and especially its subsidiaries, machine learning (ML) and deep learning (DL)); and computing power – better and faster new processors, and cloud and edge computing. However, new technologies bring new challenges. BD technologies advance faster than the chain of systems that preserve information security and privacy, which includes legislation, policies, and processes (Lowry et al., 2017).

RISK IN BIG DATA MANAGEMENT

In a world where news of security breaches or data privacy violations make frequent headlines, it is not surprising that people are concerned or have 'data anxiety' (Pink et al., 2018). This anxiety is related to how people experience the uncertainty about data accuracy, ownership, and (mis)usage.

Organizations have always collected and analyzed customer data in an effort to better understand them. What has changed now is that the technology to collect, store and analyze this data has advanced. While in principle individuals have a choice on whether to disclose or not their personal information, in practice, in the era of smart devices, e-commerce, and social platforms, there is not much choice.

Much of users' data is collected without users being aware of it, not only as they use digital devices, but also as they move through public and personal spaces (Barton et al., 2017). This tracking typically takes place without the informed consent of the user. Information about browsing, games, payment, geo-locations, etc. are being collected without users' awareness and consent. To use "free" services like Facebook, Google, Instagram or Snapchat, one "pays" with some identifiable information they need to disclose and the large amount of data he/she creates using them. Another crucial feature of modern big data analytics is the concept of collective privacy (Hernstruwer, 2017). Individual users of online services have the right to disclose as much personal information as they like. However, due to the ties among users in social networking sites, for example, people who willingly reveal about themselves increase the chances of disclosing personal information about other users regardless of the other users' consent.

Furthermore, even though individuals may have consented to secondary use of data, the ways this data could be used is not transparent and seem to grow exponentially. In fact, it is more likely that an individual would have not reasonably consented to the use of data or is not aware of a specific new data analysis. BD tools and techniques seem to be shrouded in secrecy, while they are used to collect all kinds of private data, something Richards and King (2013) refer to as Transparency Paradox.

People's personal characteristics are of great interest to businesses to better target their promotional campaigns at

right market segments. However, when data about these characteristics cannot be directly collected from individuals, inferences could be made using online data, such as web browsing behavior. For example, these analyses could infer probability of a person being a female, introverted, drug user, etc. BD is enabling the creation of very detailed and rich profiles of individuals. Assumptions made based on BD analytics are especially of great concern.

Another benefits of BD is helping businesses better understand their customers and provide new value through customized products and services. This could be supported by predictive analytics, one of the types of BD analytics. Predictive analytics could be further broken down into preferential predictions (such as recommendation systems used by Amazon or Netflix) and preemptive predictions (Kerr and Earle, 2013). Preemptive predictions, however, used to diminish a person's range of future options, can be unfair and discriminatory. Even though governments and corporations use BD to preempt activities in order to reduce risk, this is often done with little or no transparency or accountability. For example, loan companies use algorithms to determine interest rates for clients with little or no credit history to decide who is at risk for default. Orbitz, the travel website, shows higher priced deals to customers searching from Apple computers than those from PCs. Orbitz assumed Apple computer owners are willing or able to pay more. In all these cases, individuals are unable to observe and respond to information gathered or assumptions made about them.

BD relies on a tightly interconnected in-

frastructure of technologies and organizations.

Businesses share or sell the data they own to their partners/vendors or to data brokers. Data brokers monetize data by aggregating information from multiple sources. This clearly raises concern about protecting customer data. In analyzing nine large data brokers, the Federal Trade Commission (FTC) found that the data broker industry was a complex and multilayered industry, collecting data from both public and private sectors (Huerta and Jensen, 2017). In addition, data brokers in guestion acquired data from other data brokers, creating a complex chain of custody. One of the brokers analyzed had compiled profiles containing 3,000 data points on every U.S. consumer. Another way organizations are connected in the context of data is through their outsourcing of data services. Due to their massive size, BD often cannot be stored on traditional corporate servers causing organizations to outsource their data storage and processes to third parties. This dependency significantly increases the potential for security and privacy leaks.

Given this connectivity, it has even been suggested that BD should be considered an industry, not a technology (Martin, 2015). The separate and distinct firms in the BD industry work through agreements to produce a product (BD) for customers. The privacy implication here is that customer data protection depends not only on the privacy practices of the company that initially collected the data, but also on data collection practices of other participants in the BD industry (Martin, 2015). For example, when Facebook seeks to use information from data brokers such "BD often cannot be stored on traditional corporate servers causing organizations to outsource their data storage and processes to third parties." CONT. FROM PG. 12 as Acxiom and Datalogix, it should worry about their data collection methods.

Another aspect of BD risk management is data veracity or quality. Poor quality may come from inaccuracies in the data from the manner in which the data was collected, data manipulation, or users providing purposefully incorrect data. Incorrect outcome of BD analysis could impact people's lives. Consequences could be: denied credit, losing jobs, harsher or unfair judicial punishment, increased insurance cost or actual financial loss, etc. The consequences will have negative impact not just to individuals but to organizations and society at large.

DEALING WITH PRIVACY IN BIG DATA

Traditionally, privacy issues have been dealt using two approaches: informed consent and anonymity. However, applicability of these two approaches have become limited in the context of BD. 'Informed consent', which involves notice and choice, has not been very effective to begin with, even before the BD era. Research has shown that users do not read lengthy privacy policies or End User Agreements. Efforts to simplify these disclosures would lead to loss of fidelity, omission of necessary details to explain information practices. This has been referred to as the "transparency paradox" (Barocas and Nissenbaum, 2014). Notice and choice have become even more problematic in the era of BD, because it is difficult to foresee future uses of the data collected today: data could be shared, sold and analyzed for secondary uses unrelated to their original purpose of collection; organizations cannot realistically anticipate what the data will reveal until

after intensive data analysis is complete. In other words, even if the customer read and understood the privacy policy, the policy may be incomplete.

A second approach to deal with privacy, more technical in nature, is data anonymity or de-identification. This involves removing any personally identifiable information while retaining the research utility of the data. In the era of AI and ML, creating data ecosystems is of the utmost importance for scientific discoveries (such as preventing or curing diseases), smart cities, and safe world. De-identification is an obvious response to privacy concerns related to BD. In fact, the proposition that BD does not include any personally identifiable data is one of the common arguments for dismissal of privacy concerns related to BD. However, experts warn that this is a dated concept (Hutnik and Drye, 2017). When data from various sources are combined, new personal information is created, or data is re-identified. Technological advances support combining disparate pieces of data that could lead the customer identification even if the individual pieces of data are not personally identifiable. For example, even if locationbased data collected through mobile devices may not be considered personally identifiable, when combined with other data, it could create an identifiable profile of a user.

Other technical mechanisms to deal with BD privacy have been developed in recent years. They can be grouped based on the stages of the BD life cycle: data generation, storage, and processing (Jain et al., 2016). In the data generation phase, access restriction as well as falsifying data techniques are used. In data storage phase, privacy protections are based mainly on encryption procedures. In the data processing phase, Privacy Preserving Data Publishing (PPDP), anonymization techniques such as generalization and suppression, are utilized to protect the privacy of data.

GOVERNMENT REGULATIONS

Privacy regulations around the world vary from country to country. At one end of the spectrum, countries like China and Thailand lack many of the foundational regulations found in most other countries (Shey and lannapollo, 2017). On the other end are the European countries, with a deep commitment to protecting individuals' right to data privacy. The EU's GDPR, a substitute (on 25th May, 2018) for the EU Data Protection Directive is expected to provide users more control over the ways that their personal information is collected and used. Within Europe, GDRP expands the data protection scope so that it applies to anyone or any organization that collects and processes information related to EU citizens, no matter where they are based or where the data is stored (EUGDRP, 2018). GDRP also changes the definition of personal data. For example, it will include IP addresses or cookies. Based on the new regulation, organizations that store and analyze large amounts of data will be required to have a data protection office. Organizations need to keep records of all personal data, be able to prove that consent was given, and show where the data is going, what it is being used for, and how it is being protected. It even has a vague (on purpose, as it is still technically hard to do) provision for "right to explanation" to the consumers for automated decision-making (by AI) (Porup,

2018). Penalties for not complying with the regulations are substantially increased.

There has always been a gap in terms of privacy regulations between US and EU. This has important implications for US companies. Many US firms depend on access to and use of the personal information of EU citizens to provide data-driven services on the continent. Cross-border information flows represent the fastest growing component of trade in both EU and the US (Shwartz, 2017). However, there have always been concerns on the EU side about insufficient privacy protection in the US. The European data protection system centers itself around the data subject as a bearer of rights. It views data privacy as part of its legal culture of fundamental rights, while the US anchors its information privacy law in the marketplace (Shwartz, 2017). To bridge the gap between EU and the US, the Safe Harbour Agreement was introduced in 1999. This agreement would allow US companies to handle personal data of Europeans as long as they provided data protection for this subset of data that was similar to EU standards. However, in 2015, this agreement was voided in light of events such as Snowden leaks that put doubt into the adequacy of data protection in the US. A new agreement "EU-US Privacy Shield' took place in August 2016. Privacy Shield requires 'opt-in' before processing sensitive data of EU customer. In addition, if US companies want to use data for other purposes than its original purpose of collection, they have to collect a new consent from data subjects. Privacy Shield also places restrictions on the transfer of such data to third parties.

"To bridge the gap between EU and the US, the Safe Harbour Agreement was introduced in 1999."

CONT. FROM PG. 14 BIG DATA PRIVACY IN THE DIGITAL AGE

Today businesses operate in the digital era. The old economic model within the national boundary has given way to the new paradigm of the networked global economy where capitalism can flourish without capital (Haskel and Westlake, 2017). The accelerating boundary-less ecosystem, including global supply chains and innovation alliances, and powered by advanced technologies, has been created. In this dynamic environment, organizations must be agile, flexible, resilient, absorptive, speedy, and innovative to survive and prosper. Thus, digitalization and disruptive smart innovations have become imperative for organizational transformation. Advances in automation, BD and analytics, AI, IoT, cloud and edge computing, have facilitated the creation of smart automobiles, smart homes, smart factories (Industry 4.0), smart organizations, smart cities, smart infrastructures, smart countries, and the aspiration of a smart future (Lee and Trimi, 2017).

The innovation system is no longer an isolated island of R&D of an organization. The new innovation paradigm advocates co-innovation (Lee et al., 2012) where new ideas come from many different sources: outside-in (including customers, suppliers, partners, and even competitors), inside-out (alliances, licensing, etc.), collective intelligence (open innovation, open source, crowd sourcing, data ecosystems), and convergence of technologies. BD is what is driving the innovation system. The BD system is an organic living system that can sense the pulse of the environment, analyzes relevant data to extract useful information for strategic decisions, and evaluate the performance

of operational systems. The BD system must utilize the most advanced available technologies to keep the system humming: including smart sensors, Internet of Things (IoT), Internet of Brains (IoB), machine learning, 3-D technologies, blockchain technologies, cloud computing, and the like. Then, to harmonize these technologies to support the BD system, a data-friendly artificial intelligence (AI) ecosystem must be developed for discoveries, innovations, on-demand delivery of appropriate information and automation of management decision making.

The antagonistic dichotomy of open/sharedata vs. closed/private-data has become bigger and more important than ever to resolve. Privacy and security issues are "wicked problems" that involve conflicting values of many stakeholders (Lowry et al., 2017) and lie at the intersection of individual, organizational, technological, legal, and ethical implications. Opening government data spurs private-sector innovation; opening private-sector data enhances government capability to provide security and improve the welfare of citizens; collecting information from individual and broadly sharing it help new discoveries, innovations, betterment of life. Privacy, however, is a very important right of individuals. Regulations are still evolving, and are globally diverse. There is no international cooperation for data (collection, access, usage) regulation and processing (algorithms sharing advances and also regulating/controlling bad use of data and AI, such as AI weaponry). Governments should take care of safety of their citizens, while respecting citizens' privacy and not violating laws and democratic rules. Organizations should not only comply with multi-countries privacy regulations, but also meet customer expecCONT. FROM PG. 15 tations and beyond (Huerta and Jensen, 2017).

To conclude, big data, collected and shared properly, and used by sophisticated AI, will create enormous opportunities, innovations, and insights that will solve a large number of problems that will have great scientific, economic and social impact. Integration of siloed data across platforms, organizations, cities, and countries can really bring enormous benefits to the welfare of society. Developing a smart "Deep BD" system supported by AI, capable of managing the wicked problems, should be the goal.

REFERENCES

Abbasi, A., Sarker, S., & Chiang, R. (2016). Big Data research in information systems: Towards an inclusive research agenda, Journal of Association for Information Systems, 17(2), Article 3.

Baesens, B., Bapna, R., Marsden, J., Vanthienen, J., & Zhao, J. (2016). Transformational issues of Big Data and analytics in networked business, MIS Quarterly, 40(4), pp. 807-818.

Barocas, S., & Nissenbaum, H. (2014). Big Data's end run around procedural privacy protection, Communications of the ACM, 57(11), pp. 31-33.

Barton, D., Woetzel, J., Seong, J., and Tian, Q. (2017). Artificial intelligence: Implications for China, Report McKinsey Global Institute, April 2017, https://www.mckinsey.com/global-themes/china/artificialintelligence-implications-for-china, Accessed February 4 2018.

Davis, J. (2018). Unlocking the value: From data quality to artificial intelligence, InformationWeek, <u>https://www.informationweek.com/big-data/ai-machine-learning/unlock-the-value-from-data-quality-to-artificial-intelligence/a/d-id/1331076</u>, Accessed March 1, 2018.

EUGDRP, EU General Data Protection Regulation, (2018). <u>https://</u> www.eugdpr.org/, Accessed March 1 2018.

Haskel, J. and Westlake, S. (2018). Capitalism without Capital. The Rise of the Intangible Economy, Princeton University Press.

Hermstruwer, J. (2017). Contracting around privacy: The (behavioral) law and economics of consent and Big Data, Journal of Intellectual Property, Information Technology & Electronic Commerce Law, 8, pp. 9-26.

Huerta, H., & Jensen, S. (2017). An accounting information systems perspective on data analytics and big analytics, Journal of Information Systems, 31(3), pp. 101-114.

Hutnik, A., & Drye K. (2017). A privacy roadmap for avoiding big risks with Big Data, Inside Counsel, <u>https://www.law.com/insidecounsel/</u> almID/5939b47e140ba0875da882f9/?slreturn=20180212123306, Accessed February 28 2018.

Jain, P., Gyanchandani, M., & Khare, N. (2016). Big Data privacy: A technological

perspective and review, Journal of Big Data, 3(25).

James, T., Nottingham, Q., Collignon, S., Warkentin, M. & Ziegelmayer, J. (2016). The Interpersonal Privacy Identity (IPI): Development of a privacy as control model. Information Technology and Management, (17), pp. 341-360.

Kayhan, V., & Davis, C. (2016). Situational privacy concerns and antecedent factors, The Journal of Computer Information Systems, 56(3), pp. 228-237.

Kerr, I., & Earle, J. (2013). Prediction, preemption, presumption: How Big Data threatens big picture privacy, Stanford Law Review Online, 66, pp. 65-72.

Lee, S. M., Olson D., & Trimi, S. (2012). Co-innovation: Convergenomic, collaboration, and co-creation for organizational values, Management Decision, 50(5), 817-831.

Lee, S. M. & Trimi, S. (2017). Innovation for a smart future, Journal of Innovation and Knowledge, doi:10.1016/j.jik.2016.11.001.

Lowry, P., Willison, R., & Dinev, T. (2017). Why security and privacy research lies at the centre of the Information Systems (IS) artefact: Proposing a bold research agenda, European Journal of Information Systems (EJIS), 27(6), pp. 546-563.

Martin, K. (2015). Ethical issues in the Big Data industry, MIS Quarterly Executive, 14(2), pp. 67-85.

Malhotra, N., Kim, S., & Agarwal, J. (2004). Internet users' information privacy concerns

(IUIPC): the construct, the scale, and a casual model, Information Systems Research, 15(4), pp.336–355.

Pink, S., Lanzeni, D., & Horst, H. (2018). Data anxieties: Finding trust in everyday digital mess, Big Data and Society, January-June, pp. 1-14.

Porup, J. M.,(2018). What does the GDPR and the "right to explanation" mean for AI? CSO from IDG, 02/09/2018, <u>https://www.csoon-</u> line.com/article/3254130/compliance/what-does-the-gdpr-and-theright-to-explanation-mean-for-ai.html, Accessed March 2 2018.

Richards, N., & King, J. (2013). Three paradoxes of Big Data, Stanford Law Review Online, 66, pp.41-46.

Shey, H., & lannopollo, E. (2017). Compliance strategy is just the start of your privacy program, CIO, <u>https://www.cio.com/article/3234682/regulation/compliance-strategy-is-just-the-start-ofyour-privacy-program.html</u>, Accessed March 8 2018.

Smith, H., Milberg, S., & Burke, S. (1996). Information privacy: measuring individuals' concerns about organizational practices, MIS Quarterly, 20(2), pp.167-196.

Schwartz, P., & Peifer, K. (2017). Transatlantic data privacy law, The Georgetown Law Journal, 106, pp. 115-179.

The Economist. (2016). The return of the machinery question, Special Report: Artificial Intelligence, June 25th 2016. The following articles were published in the Decision Science Journal 49(1). The articles in this issue reflect the breadth, from both a methodology and problem domain, that reflect the diverse interests in our community.

CAN SERVICE CLIMATE DETRACT FROM EMPLOYEE PERFORMANCE? THE ROLE OF EXPERIENCE IN OPTIMIZING SATISFACTION AND PERFORMANCE OUTCOMES

Colin B. Gabler, Adam Rapp, Robert Glenn Richey Jr., and Frank G. Adams

In this research, we test the curvilinear relationships between service climate perceptions and two employee performance outcomes. Specifically, we propose that while service climate can be beneficial, high levels can actually be detrimental to customer satisfaction and sales performance. Additionally, we propose that a global assessment of employee experience that captures knowledge, skills, and abilities, or KSAs, moderates these curvilinear relationships by providing a means to balance outcome goals. We test our theory using data obtained from 312 employees in a service setting, which we pair with their managers' assessments of their sales performance as well as satisfaction ratings from their customers. Our results reveal two things: (1) an inverted U-shaped relationship between service climate and sales performance and (2) the level of experience moderates the relationship. These findings suggest that more experienced employees are better able to adjust behaviors to achieve high levels of performance than less experienced employees. Based on these results, we offer theoretical implications and applications for managerial practice.

Dr. Cheri Speier-Pero is Professor of Information Systems and currently serves and the faculty director for MSU's Masters in Business Analytics program. She has also served as the Associate Dean for MBA and MS Programs at The Eli Broad College of Business, Michigan State University. Dr. Speier-Pero received her Ph.D. in Management Information Systems from Indiana University in 1996.

ekovsky

"DO AS I DO AND NOT AS I SAY": EXPLORING PRICE-ORIENTED MAVERICK BUYING DURING SUPPLIER SELECTION Marc A. Scott, Gerard Burke, and Joseph Szmer-

This article empirically examines the occurrence of price-oriented maverick buying (MB) during supplier

selection, in a direct purchasing process context. Drawing on agency theory, maverick buying, and total cost of ownership (TCO) literature, the statistically significant existence of price-oriented MB is investigated and the purchasing manager (PM)-related factors that influence such noncompliant behavior are determined. A discrete choice experiment is designed to simulate a TCO-based supplier selection process in which an established purchasing framework agreement stipulates PMs not necessarily be price-oriented (i.e., select suppliers primarily based on lowest price), and then models PM choice behavior in the supplier selection process (SSP), utilizing a conditional logit model (CLM) to determine PM compliance to the established purchasing framework agreement and identify if price-oriented MB exists. Statistical tests utilizing comprehensive primary and secondary data are then conducted to determine if correlational relationships exist between PM-related factors and PM price-orientation. Results indicate that three PM-related factors bear a significant correlational relationship to PM price-orientation.

LEADERSHIP, DOMINANCE, AND PREEMINENCE IN A CHANNEL STRUCTURE WITH A COMMON RETAILER

Fang Fang, Haresh Gurnani, and Harihara Prasad Natarajan

As firms embrace collaborative principles, partners of varying strengths and standing are coming together to deliver products effectively to consumers. In a two-tier collaborative channel, a partner's relative standing is manifest in the order in which wholesale and retail prices are determined; in turn, standing influences a partner's ability to achieve profits. We propose a framework, based on two factors that specify the strength of partners across channel tiers (channel leadership) and *within a tier(*echelon **DSJ UPDATE**

CONT. FROM PG. 17

dominance) and together determine a partner's standing in the pricing process, to effectively study various channel strength scenarios. Our analysis of Stackelberg games corresponding to these scenarios reveals interesting insights regarding the impact of channel leadership and echelon dominance, both individually and jointly. For instance, we show that the presence of a dominant player in the upstream manufacturing tier benefits both the dominant and the weak manufacturers. The leadership-dominance framework also allows us to study the effect of a retailer's sequencing of its pricing of the two manufacturers' products. By embedding the retailer's timing choices in channel strength scenarios, we find that both retailer and weak manufacturer prefer that the retailer set prices for the two products simultaneously; in contrast, the echelondominant manufacturer benefits from the retailer sequentially pricing the manufacturers' products. Our analysis also covers preeminent channel leaders that control both wholesale and retail prices, finding that preeminent partners achieve significant gains and consumers benefit from low retail prices. Moreover, the weak manufacturer benefits from the presence of a preeminent manufacturer.

CONTRACT DESIGN WITH INFORMATION ASYMMETRY IN A SUPPLY CHAIN UNDER AN EMISSIONS TRADING MECHANISM Xin Ma, William Ho, Ping Ji, and Srinivas Talluri

We aim to design an appropriate sourcing mechanism with information asymmetry in a supply chain with one manufacturer and multiple suppliers subject to an emissions trading scheme. The manufacturer purchases raw materials from suppliers, who hold private information regarding the green degree—that is, the unit emission rates—of their raw materials. An appropriate strategy must be adopted by the manufacturer for the contract design, including a series of payments and the order quantities; the suppliers are subsequently invited to bid for the contracts. The basic model is formulated to assist the manufacturer in designing a reasonable contract for a single supplier. The characteristics of the optimal order quantity and payoff functions of both the manufacturer and supplier are analyzed. A competitive procurement scenario with multiple suppliers is also discussed. With respect to the diversity of auctions, three different auction types are analyzed, including a green degree auction, a price auction with emissions targets, and a performance-based auction. In addition, an efficient emissions trading policy is established to guide manufacturers regarding how to balance their emission allowances based on the optimal order quantities. Our approach provides an effective decision support system for both the manufacturer and suppliers.

COMPETITION UNDER DISECONOMIES OF SCALE: THE ROLE OF SUBCONTRACTING AND SINGLE-SOURCING COMMITMENT Lusheng Shao

This article studies a supplier competition model in situations with flexible resources where suppliers face diseconomies of scale. Under such a situation, it is generally believed that a buyer may split an order across different suppliers; and even if the buyer chooses only one supplier, the winning supplier may subcontract part of the work to the others. My results, however, show that the buyer always prefers to commit to single-sourcing prior to running a procurement auction. This is because such commitment eliminates the "assurance" of getting a positive order from the buyer, thus intensifying supplier competition. I also find that subcontracting may be beneficial (detrimental) to the buyer if the subcontract is determined by the winning (losing) supplier of the bidding game. Finally, I show that, for the case with linear costs, the buyer is always better off when subcontracting is considered.

SIMULATION-BASED OPTIMIZATION OF CAPACITATED ASSEMBLY SYSTEMS UNDER BETA-SERVICE LEVEL CONSTRAINTS Stefan Woerner, Marco Laumanns, and Stephan M. Wagner

We study a class of capacitated assembly systems operated by base-stock policies and address the problem of finding base-stock levels that minimize holding costs under beta-service level (fill rate) constraints over an infinite horizon. To solve this nonconvex constrained optimization problem, we develop a new simulation-based optimization approach using the constrained level method (CLM) and infinitesimal perturbation analysis. The key idea of the algorithm is a novel family of convex approximations of the beta-service level, which is iteratively refined during the course of the algorithm. The algorithm can easily handle integrality requirements for the base-stock levels by combining the CLM with a cutting plane approach without significantly increasing the solution time on typical instances. We apply our approach to a comprehensive multi-echelon assembly benchmark system from the literature and study the algorithm's behavior for different target service levels, capacity configurations, and simulation horizons. A comparison with a state-of-the-art interior point algorithm shows that for realistic capacity constraints, our algorithm is on average 8%–20% better. Compared with the guaranteed service model, our approach reduces costs by 10%-15% while keeping the same service level.

CONT. FROM PG. 4

a list of tracks, workshops and competition planned for this conference. In addition, all the deadlines are listed. Please note the following deadlines: Full Paper - May 30th 2018, Abstract - June 15th 2018, Panel Proposal - June 15th 2018, Workshop Proposal - June 15th 2018, and Award Competition - June 15th 2018.

Vivian Landrum, DSI Executive Director, provides an update from the Home Office. She informs us that DSI has contracted with Growth Zone (GZ), provider of a new member management system. This system enables regions to effectively and efficiently use this software to run registration for their annual conference. In addition, Vivian reports that the new five year strategic plan that has been drafted and approved will be employed during the next five years. The new constitution is under review by an expert attorney specializing in non-profit associations to assure that our constitution is up to date and meets the current laws and practice.

Nominations are being accepted now for the Carol J.

Latta Memorial Award for Outstanding Early Career Scholar. Eligibility criteria, deadline and submission information are offered. Please nominate any DSI member who is in the early stages of their profession and is already an active member of DSI. Deadline for nomination is August 31, 2018. The rest of the issue is devoted to the regional news including call for paper, announcements from the region and regional conference recap.

I encourage you, our reader, to share your opinions, ideas with us by writing and sending it to me at

mebrahimpour@uri.edu.

I am looking forward to reading your articles for inclusion in Decision Line.

Maling Ebrahimpour, PhD Editor College of Business The University of Rhode Island Articles To Be Published in DSJIE Volume 16, Issue 2 (April 2018)

TEACHING BRIEFS

"TEACHING CUSTOMER EXPERIENCE QUALITY AND ITS SIGNIFICANCE IN RETAIL MANAGEMENT: A ROLE PLAYING GAME USING CHINESE PUZZLE `TANGRAM''' **Rik Paul and Abhilash Ponnam**

Abstract: Services are intangible in nature. For a marketing educator, it is difficult to illustrate to students the means of creating favorable customer experiences through standard lectures or case studies in a services context, considering this intangibility property. This paper describes a simple role playing game that uses the Chinese puzzle 'Tangram' to help students comprehend how customer experiences are shaped within and beyond a service setting. In the game, the class gets divided into two groups, individual customers and furniture retailer teams. The two groups interact with each other in buying and selling modular furniture. At the end of the game, customers share qualitative and quantitative feedback on their retailer experience, and the retailer team which obtains a high score on profitability as well as customer experience quality is declared as the winner. The debriefing session that follows the game lets students share their experiences and key learnings. The game provides the students with a scope to learn and explore the importance of customer experience quality without direct supervision from the instructor. This game requires minimal physical infrastructure. The materials required to conduct this game are easily available in departmental stores, and the



Matthew Drake, Ph.D., CFPIM, CPF

Matt Drake is an Associate Professor of Supply Chain Management and the Harry W. Witt Faculty Fellow in Supply Chain Management in the Palumbo-Donahue School of Business at Duquesne University. As of November 1, 2016, he is the editor-in-chief of the Decision Sciences Journal of Innovative Education. "TEACHING LINE BALANCING THROUGH ACTIVE AND BLENDED LEARNING" Tiffany Bayley and Ada Hurst

monetary cost involved in deploying this

game is nominal.

Abstract: The design of balanced assembly lines, especially when considering workforce, material, and cycle time factors, is an important managerial decisionmaking activity in manufacturing firms. Numerous active learning activities are available to assist instructors in teaching assembly line balancing to students. While effective in improving student engagement, they require considerable planning and expense on the part of instructors, and they may be difficult to implement in inflexible teaching spaces and lecture-oriented curricula. We present a new approach to teaching line balancing using online videos depicting an assembly process. Students design an assembly line by determining themselves how to separate and time tasks, rather than by modifying an existing configuration. To save valuable classroom time, students complete a portion of the activity outside of class. This blended learning approach allows for all students to be engaged in the activity, both in and out of class. Furthermore, a controlled study showed that compared to the traditional lecture format, it better equips students to address less tangible aspects of line balancing, such as ergonomic and workforce factors, material handling considerations, and changing cycle time. With the online content for this activity developed and available, other instructors can easily implement this approach within their courses.

"EXPERIENTIAL LEARNING FOR LOGISTICS AND SUPPLY CHAIN MANAGEMENT: USING AN SAP ERP SOFTWARE SIMULATION" Mark Angolia and Leslie Pagliari

Abstract: This teaching brief describes a three-echelon supply chain simulation that involves complex decision making in a dynamic environment. Using a teambased logistics simulation operating on a live commercial-software application (SAP ERP) as a foundation, a supplemental exercise is proposed for deeper learning of transportation and logistics aspects of supply chain management. Sales and operations planning is used during four simulated months to develop detailed procurement strategies and logistics plans to enhance the baseline supply chain management (SCM) concepts of inventory control and forecasting in a distribution network. Transportation planning and scheduling complexity is introduced as students manage freight to conform to motor carrier weight regulations. The combination of commercial software and extensive real-world planning allows students to assimilate numerous SCM concepts in a realistic environment. Student opinion survey data shows that students are highly engaged by the detailed nature of the simulation, which they concluded aided their conceptual learning. Additionally, the inclusion of the SAP ERP commercial software becomes a competitive advantage during collegiate recruiting by potential employers.

EMPIRICAL RESEARCH

"EXAMINING THE RELATIONSHIP BETWEEN MATH SELF-EFFICACY AND STATISTICS MOTIVATION IN THE INTRODUCTORY BUSINESS STATISTICS COURSE: SELF-COMPASSION AS A MEDIATOR" Leslie Ramos Salazar

Abstract: Because business statistics students often experience a lack of statistical motivation, business educators need to understand the factors that influence students' motivation levels in undergraduate-level business statistics courses. The purpose of this study was to examine the role of math self-efficacy and self-compassion on students' motivation levels and the sex differences among the main variables. The regression results showed that math self-efficacy was a positive predictor of statistics motivation. Self-compassion was also found to be a partial mediator of the relationship between math selfefficacy and statistics motivation. Gender differences were also found in business students' math self-efficacy, self-compassion, and statistics motivation.

DECISION SCIENCES INSTITUTE ELECTION RESULTS

By Vivian Landrum, Executive Director

The Decision Sciences Institute holds Board member elections every year, following an open recommendation and nominations process. Once names are received by the Nominating Committee, they have the difficult task of narrowing down the slate to just two or three candidates for each open position. DSI Board members serve for a term of two years, with the exception of the President-Elect who will serve a one-year term before serving as President.

After a 30-day voting time frame via a secure email voting system, the DSI membership made their decision on who would serve on the 2018-2019 Board and lead the Institute into a new decade. Our thanks to those who volunteered to commit themselves to a higher level of participation, and to those who participated in the election process.

Please join me in welcoming the following to the DSI 2018-2020 Board of Directors:







President-Elect Janet Hartley, Bowling Green State University

VP Finance Alan Mackelprang, Georgia Southern University

VP Global Activities Wendy Tate, University of Tennessee-Knoxville



VP Professional Development

Sriram Narayanan, Michigan State University

VP Member Services Shanan Gibson, Texas A&M University



VP European Division Carmela di Mauro, Università di Catania

They will join the current Board members continuing on for one more year:

President as of April 1, 2018

Johnny Rungtusanatham, The Ohio State University

Past President

Jatinder (Jeet) Gupta, University of Alabama – Huntsville

Secretary Anand Nair, Michigan State University

VP Americas Division Vijay R. Kannan, Utah State University

VP Asia-Pacific Division Ravi Kuma Jain, Symbiosis Institute of Business Management – India

VP Marketing Sri Talluri, Michigan State University

VP Publications Jennifer Blackhurst, University of Iowa

VP Technology Natalie Simpson, State University of New York at Buffalo

MAKE PLANS NOW TO ATTEND DSI 2018 ANNUAL MEETING

Subodha Kumar DSI 2018 Program Chair

Chicago conjures images of amazing design and architecture. Now, as in the past, Chicago has always looked at the future, and futuristic monuments such as the Cloud Gate have become icons of this great city. Likewise, Chicago inspires us to reflect on how to design and manage future global operations in the emerging data and analytics driven business world.

Digital production technologies and ITenabled management processes generate enormous amounts of data that hold the promise to significantly improve operational capabilities and long-run performance of businesses. Businesses that leverage data and decision analytics driven technologies can transform global operations, by making control and coordination cheaper and faster. Data and decision analytics driven technologies can also enable greater flexibility and customization, which may transform the geography of global operations.

We cordially invite you to join DSI, the global community of scholars in the decision sciences, in debating these key issues for the future of business. Come and share your views with experts from the six continents!

SUBMISSIONS ARE NOW BEING ACCEPTED

DSI is now using Ex Ordo as our confer-



ence management system, therefore even if you have submitted to a DSI conference in the past, you will need to create a new account in order to submit this year. Please visit <u>https://decisionsciences.org/</u> <u>annual-meetings/national-dsi/</u> for detailed submission information.

DEADLINES

Full Paper Deadline: May 30th 2018 Abstract Deadline: June 15th 2018 Panel Proposal Deadline: June 15th 2018 Workshop Proposal Deadline: June 15th 2018 Award Competition Deadline: June 15th 2018

Tracks

We would like to invite full papers, abstracts, and panel proposal submissions focusing on developing new knowledge across all functional areas of business and curriculum. Papers in these tracks are ideally positioned for publication consideration by Decision Sciences Journal and the Decision Sciences Journal of Innovative Education plus other high impact



University, Program Chair

CONT. FROM PG. 23 business journals and business education journals. Panels in these tracks focus on identifying emerging research topics,

identifying leading edge issues, topics, and methodologies.

Accounting

Big Data Applications in Logistics and Supply Chains

Business Analytics

Cyber Security

Decision Sciences in Practice

Finance and Economics

Global Operations

Healthcare Management

Information Systems and Technology

Innovation and New Product Development

Innovative Education and Teaching

Logistics and Transportation Management

Managing Risk in Supply Chains

Manufacturing and Production Management

Marketing and Consumer Behavior

Operations and Supply Chain Management in Emerging Economies

Organizational Behavior and Human Resource Management

Procurement and Sourcing in Supply Management

Project Management

Quality Management and Lean Operations

Revenue Management

Service Systems and Operations

Social Media and Internet of Things

Strategic Management Supply Chain Management Sustainability, CSR, and Humanitarian Operations

Special Interest Groups

Data, Analytics and Statistics Instruction (DASI)

Workshops

The 2018 DSI Annual Meeting offers many professional development workshops intended to help attendees become better researchers, teachers, administrators, and professional service volunteers. In addition to submitted workshops, highlighted below, are some of the exciting Workshops you not want to miss in Chicago. Workshop leaders have been asked to make these sessions as interactive and hands-on as possible.

Behavioral Research and Experimentation in Operations Management

Paradigms for Parity in Advancing Women Leadership in Supply Chain and Operations Management

Presenting Business Analytic Results to Senior Managers

Best Practices in Planning a US Regional DSI Conference

How to Review to Become an Editor for a Journal

How to Publish in Top Tier Journals

Meet the Editors of DSI Journals

Meet the Editors of Non-DSI Journals

Publishing in DSJ Workshop

We have four Awards Competitions at the 2018 Annual Meeting of DSI in Chicago, Illinois (USA). The Best Paper Awards finalists will be chosen by the 2018 Track Chairs. Four winners from each of the following categories will be announced at the 2018 Annual Meeting of DSI in Chicago, Illinois (USA):

Best Theory-Driven Empirical Research Paper

Best Analytical Research Paper

Best Application Paper

Best Student Paper

Other Awards are directly submit-able. For more general information and detailed submission criteria for each award competition listed below go to the <u>conference</u> <u>website</u>:

Best Teaching Case Studies Award

Elwood S. Buffa Doctoral Dissertation Award

Instructional Innovation Award Competition

Consortium

We are again continuing the Post-Proposal PhD, Pre-Proposal PhD, New Faculty Development, and Mid-Career Faculty Development Consortia in 2018. Below is the list of Consortia. Post-Proposal PhD Consortium Pre-Proposal PhD Consortium New Faculty Development Consortium Mid-Career Faculty Development Consortium

We look forward to seeing everyone at the DSI 2018 Annual Meeting in Chicago, Illinois (USA)! Stay tuned for updated information on various tracks, panels, workshops, keynotes, special events and activities!

The venue for the 2018 DSI Annual Meeting will be the Hilton Chicago Hotel, 720 S. Michigan Ave. This hotel is centrally located and offers excellent access to restaurants, tours and entertainment, as well as tourist attractions in Chicago.

Again, for more detailed information and submission instructions go to the <u>confer-</u> <u>ence website</u>. I, along with the entire DSI 2018 Annual Meeting team, look forward to seeing you in Chicago!

LARRY MOORE

(1938 - 2018)

Laurence J. (Larry) Moore joined the faculty of the Department of Business Administration in the College of Business at Virginia Tech in 1970 after receiving his PhD and M.S. from Arizona State University. He had previously spent two years in the U.S Army, received a B.A. in Economics from Monmouth College, and worked for Standard Oil Company and the Continental Illinois National Bank in Chicago. He served as Head of the Department of Business Administration from 1976 to 1980, which at the time included the academic areas of marketing, management, management science and finance. In 1980 these academic areas were formally designated as departments and Larry served as the first Head of the Management Science Department (later renamed the Department of Business Information Technology) from 1980 to 1983. He also later served as Director of University Financial Planning and Analysis, and as Director of University Planning. In 1985 Larry was named the C&P Telephone Professor of Management Science, the first endowed professorship created in the College of Business. This professorship was subsequently renamed the Bell Atlantic-Virginia Professor of Management Science, and later the Verizon Professor of Business Information Technology. Larry held this position until his retirement in 2007.

Larry was very active In the Decision Sciences Institute (DSI) serving as National Program Chair for



its 1979 annual meeting in New Orleans, and President in 1983, and chairing numerous national committees. He also served as coprogram chair for the first annual meeting of the Southeast Region of the Decision Sciences Institute (known at the time as the American



Institute of Decision Sciences), and later as President of the Southeast Region Chapter of DSI. Larry was the recipient of the Distinguished Service Award for the Southeast Region of DSI in 1977, and the Distinguished Service Award for the National Decision Sciences Institute in 1986. In 1980 he was named a Fellow of the Decision Sciences Institute. In 1985 he received the Distinguished Service Award from the Southeast Region of the Institute of Management Sciences (now INFORMS).

Larry was a prolific researcher authoring over 50 research articles and three books in his career. During his career at Virginia Tech he served on over two hundred departmental, college and university committees. He was dedicated teacher, teaching a wide range of graduate and undergraduate courses, and he received four college teaching excellence awards. He also chaired and served on numerous doctoral committees. Each year the Department of Business Information Technology (BIT) presents the L.J. Moore Outstanding Achievement award to a BIT major who has exhibited outstanding service and academic achievements. Larry's career at Virginia Tech spanned 37 years until his retirement in 2007.

By Vivian Landrum, Executive Director

Changes continue to take place at the DSI Home Office and I am happy to report they are all good!

GROWTHZONE

As you may have seen from our website, DSI contracted with a new member management system in late December – GrowthZone (GZ). This system will enable us to more effectively manage our member database and more efficiently handle our annual meeting registrations. This includes DSI regional annual meeting registrations as well. The GZ registration module offers automated attendee invitations, registration tracking, sponsorship offerings, customized online event display, and detailed event reporting. Both Western and Midwest DSI regions utilized GrowthZone for their 2018 conference registrations. This is offered to all DSI regions and divisions at no cost.

Member renewals in GZ are now paid via invoices. Once logged in, members will find their invoice under the Account tab in their Info Hub. (If you do not find an invoice created for you, it may indicate your membership is more than 6 months past due. If this is the case, contact the Home office and we can remedy that for you.) Invoices are easily paid online by simply clicking on the Open Invoice and then Actions tab to enter credit card information. Open and Paid invoices



can be downloaded as receipts at any time.

Coming soon is the online DSI Member Directory, which is populated from GrowthZone and will be located on the DSI website. Members will be able

to connect and engage with fellow DSI members via a Members Only portal. Member information will include university, division, region and areas of academic interest. To ensure the correct and up to date information is on file for you, please visit the DSI website, log in and update your member information in your GZ Info Hub. If you are logging into Growth-Zone for the first time, you will need to Create an Account, as your old user name and password will not work.

HOME OFFICE STAFF - NEW HIRE

Welcome new contracted employee Bertha Allen to the Home Office. Bertha joined us in February on a part-time basis and will be responsible for our bookkeeping/accounting processes. She has a wealth of experience with bookkeeping and tax services, and is very proficient in QuickBooks. Bertha will ensure our home office and regional accounts are reconciled to the penny!

DSI 2018 ANNUAL MEETING

Your 2018 Program Chair, Subodha Kumar, and his team are hard at work, planning an exceptional event for the Annual Meeting to be held in Chicago, IL in November. In response to comments and suggestions from the 2017 Annual Meeting survey, you can expect to see positive changes that should improve the overall event. More volunteers are planned to assist attendees throughout the 3-day event. Registration will open an hour before the first session is planned on Saturday, Sunday and Monday. As in the past, registration will continue to open at 12 noon on Friday. Please know all comments and suggestions offered via the survey were read and wherever possible, taken into account as planning for this year progresses. I'm sure it is understood hotel constraints often come into play and impact final decisions.

UPDATES – STRATEGIC PLAN – FY2016-17 AUDIT – REVISED CONSTITUTION

As you read in President Gupta's farewell message, your DSI 2017-18 Board of Directors worked diligently over several months to draft and approve a five-year strategic plan. This plan will be employed during the next five years to ensure consistency and CONT. FROM PG.27 follow-through on DSI Board actions. This strategic management defines the direction and specifies goals to help drive DSI towards sustainable growth and enhancements. The Strategic Plan is available on the DSI website.

> Auditors, Blazek and Vetterling, are near completion of their audit for DSI's FY2016-17. We anticipate a final report from them in early April. This report will be shared with all regions upon receipt.

As was shared at the November Annual Business

Meeting, DSI's Board of Directors approved a revised Constitution which was to be sent to the membership for vote. Prior to sending this out, the draft was shared with an attorney specializing in non-profit associations and licensed in the state of Georgia, as DSI is incorporated there. The attorney has suggested some additional changes and verbiage that will bring our Constitution up to date and more aligned with current laws and practices. Once the Board receives and reviews all suggested edits, they will again vote on the final draft to present to the membership. We hope to receive the draft from the attorney by the end of March.



seen a slight rise in members from that region.

DSI membership is based on the country the member resides in and the gross domestic product (GDP) per capita of that country. The membership rates are divided into three categories with countries assigned according to their GDP per capita. Those countries with a GDP per capita at the 75th percentile or higher are the Category A members. Those in the 50th - 75th percentile are in Category B and those who fall in the less than 50th percentile are Category C. In addition, DSI has regular, emeritus and student membership rates. Student memberships, which are free, can now be tracked more easily to ensure those who no longer qualify for that status are moved to their

DSI membership has been on the rise since the 2017 Annual Meeting. With the new member management system, we are now able to track memberships more efficiently and ensure the correct membership amount is assigned to the individual member. As a result of the ISDSI annual meeting held in December, we have proper category.

To view the listing of countries assigned to each category and the rates assigned see the Membership Rate Chart found on the DSI website or at the back of this magazine.

CAROL LATTA MEMORIAL AWARD FOR OUTSTANDING EARLY CAREER SCHOLAR

DEADLINE: AUGUST 31, 2018

AWARD INFORMATION

The Carol Latta Memorial Award for Outstanding Early Career Scholar recognizes a scholar in the early stages of his or her career in the field of Decision Sciences and who has contributed to the Institute and its goals over the recent past. The award is presented at the Annual Meeting of the Decision Sciences Institute in November 2018. The awardee will receive a plaque and a \$500.00 honorarium.

ELIGIBILITY

To be eligible:

- A candidate being nominated must be a current member of the Institute in good standing who received his or her terminal degree (e.g., Ph.D., DBA, etc.) within the past five (5) years.
- The nomination should come from a faculty member or academic administrator who are also members of the Institute in good standing (no self-nominations).
- The nomination must include a recommendation letter on official university letterhead and a current curriculum vita (CV) of the candidate.
- The recommendation letter (no more than five pages) should explain why the candidate deserves to be recognized in terms of (a) impact of scholarship on the field of Decision Sciences, (b) excellence in teaching in the field of Decisions Sciences, and/or (b) contributions and service to the Institute.

SUBMISSIONS

The nomination letter and candidate CV should be emailed to <u>info@decisionsciences.org</u> with **Carol Latta Memorial Award for Outstanding Early Career Scholar** in the subject line. Once received, a confirmation email will be sent to both the nominator and the candidate to acknowledge receipt.

DEADLINE

All nominations must be received by August 31, 2018.

SELECTION COMMITTEE

The Selection Committee includes the:

- Immediate Past President (Selection Committee Chair)
- VP for Member Services
- VP for Professional Development
- VP for Global Activities
- · Recipient of the previous year's award

Decision Sciences Institute

C.T. Bauer College of Business 334 Melcher Hall, Suite 325 Houston, TX 77204-6021 Email: <u>info@decisionsciences.org</u> Office: 713-743-4815 Fax: 713-743-8984 Web: <u>www.decisionsciences.org</u>

2018 ANNUAL EUROPEAN DSI CONFERENCE IN VENICE AND UDINE (ITALY)

3 - 6 JUNE 2018

DECISION SCIENCES FOR THE NEW GLOBAL ECONOMY

2018 EDSI conference is approaching. We are pleased to update the DSI community on this event.

CONFERENCE VENUE

The Conference will be hosted in two extremely attractive locations: Udine and Venice (Italy).

Venice is one of the best-known tourist destinations in the world. The city has an average of 18 million tourists a year thanks to its celebrated art and architecture.

Udine is a small historical town with several squares of Venetian style: from Piazza Libertà, defined as "the most beautiful Venetian square on the mainland", to Piazza Matteotti, all surrounded by porticos, and looking like an open-air lounge.





CONFERENCE THEME

The chosen conference theme is: "Decision Sciences for the New Global Economy".

Few decades of rapid globalization processes have dismantled previous business and institutional landscapes without proposing new effective orders. The horizon in front of us is confused: high disparities in wealth distribution, vulnerability of real economies to the movements of the financial markets, instability of the location advantages, and a generalized unemployment problem with relevant social sustainability consequences. The difficulty of governing processes that overcome the sovereignty of individual countries, and the weakness of supranational governments, explain why protectionist temptations are resurfacing not only in the Western context.

We live then a transition phase where companies and institutions are urged to rethink the conceptual models and the decision patterns so far used. The theme of the conference aims at exploring the future of globalization as we know it today, re-assessing the underlying theories and the relevant practices in both institutional and business environments, and providing innovative guidance to managerial and policy issues.

SPECIAL EXPERIENCES

The standard fee includes 2 lunches, 3 dinners, 4 coffee breaks with a prizewinning handmade Italian gelato (icecream) corner, a Italian wine tasting event, an Italian liquor tasting event, a Udine guided tour, transfers from Udine to Venice on June 6th.

VENICE TOUR (OPTIONAL)

This tour includes a marvelous gondola experience, the Doge's Palace and the Saint Mark's Basilica guided visit, the city tour and a lunch in Venice in a 5 star hotel facing Canal Grande.

The **gondola experice** will begin just behind Saint Mark's Square, following smaller but unbelievably beautiful secondary canals such as Rio dei Barcaioli where

The view of the Castle of Udine





the historical Mozart's home is located, and Rio dell'Ovo to reach the Grand Canal. Then, you will enjoy the spectacular view of the Rialto Bridge from the water, and to your left imposing palazzi such as Ca' Farsetti, seat of the municipal government, and Palazzo Grimani, the largest building overlooking the Grand Canal. The tour continues down Rio San Luca where it passes Palazzo

Manin, residence of the last doge of Venice.

Saint Mark's Basilica is the cathedral of the Roman Catholic Archdiocese of Venice. It is the most famous among the city's churches and one of the best-known examples of Italian-Byzantine architecture. The basilica started to be built in 1063. The upper levels of the interior are completely covered with ancient bright mosaics covering an area of about 8000 square meters.

Further information can be found at our website: <u>http://www.edsi-conference.org/</u>

From the regions – edsi

Venice – A gondola

Realto Bridge.

quietly crossing a chan-

nel; in the backgroud the

2018 SWDSI CONFERENCE RECAP

The 49th Annual Meeting of the Southwest Decision Sciences Institute (SWDSI) was held on March 7-10, 2018 at Hyatt Regency & Albuquerque Convention Center in Albuquerque, New Mexico. The conference brought together 140 attendees, including 27 students. Attendees came from several countries. The program chair himself, Khaled Alshare, came from Qatar. He has been a loyal member of SWDSI for a long time since he was a faculty in the United States. Despite being in Qatar, he worked hard to attract papers for the conference and communicate with his team members constantly. As a result, there were 140 submissions to 21 tracks, workshops and panels. Of those submissions, 46 were accepted as full papers, 77 as abstracts into 36 sessions. There were 3 workshops, 2 panels and one Doctoral consortium.

Southwest DSI continues to put a special emphasis on attracting new students and especially doctoral students. It spends a significant amount of money for the Doctoral Consortium Luncheon, fee waiver for doctoral consortium attendees and for the best student paper awards. The money is well worth it in the long term, not only for SWDSI but also for DSI. These students become the future leaders of our organizations. There are several examples. Despite financial issues faced by SWDSI in recent years, the policy of continued support for students is expected to continue in the foreseeable future.

The president of Southwest DSI, Mohan Rao, presided over the Executive Officers' meeting in the morning and the Business



(L to R) Khaled Alshare, Program Chair, Mike Hanna and David Douglas, Lifetime Achievement Award recipients, Mohan Rao, President of SWDSI, Johnny Rungtusanatham, President-Elect of DSI, Mark McMurtrey, President-Elect of SWDSI.

Meeting in the afternoon. The conference was a great success because of the team work. Besides the president, the leadership team included Mark McMurtrey, president-elect, Khaled Alshare, program chair, and Matt Lindsey, program chairelect, who worked closely for the whole year. He pointed out the strengths and weaknesses of SWDSI and the opportunities that exist to overcome some of the challenges. SWDSI has very loyal, longterm members who have been serving the association for decades just for the love of it. SWDSI operates efficiently. It continues a great teamwork by which the incoming officers will not miss a beat when it is time to lead. We were pleased to have Johnny Rungtusanatham, President-Elect of the Decision Science Institute, attend the conference and meetings.

This year, the Business meeting overflowed the meeting room. The most enjoyable part of the meeting was recognizing the dedication and the hard work of members that make this conference successful year after year. All the committees worked hard and produced excellent results. They FROM THE REGIONS – SWDSI

CONT. FROM PG. 32

have identified the outstanding members of SWDSI for their dedication, service and achievement. Carl Rebman received the 2018 SWDSI Outstanding Educator Award. David Douglas and Mike Hanna received the SWDSI Lifetime Achievement Awards for 32 years and 36 years of service respectively. Southwest DSI has been truly blessed to have these outstanding individuals. We are going to miss David and Mike. We wish them well deserved rest in their retirement. Our 50th Golden Jubilee Meeting will be on March 16-19, 2019 at Hyatt Regency Houston in Houston, Texas. Because of its significance, our leadership team is making an all-out effort to attract a huge turnout. We hope you will join us. For more information about SWDSI, please visit our website <u>http://www.swdsi.org</u> or contact the incoming Program Chair, Matt Lindsey, at <u>lindseymd@sfasu.edu</u>.



Carl Rebman, Outstanding Educator Award recipient

ATTEND ONE OF THE DSI REGIONAL ANNUAL MEETINGS NEAR YOU

Make plans to attend - either one near you or one that offers information on your area of interest.

To find out more about each of the regional annual meetings or to register to attend, check out their websites:

<u>WDSI Annual Meeting</u> – Kauai, Hawaii April 3 – 6, 2018

<u>MWDSI Annual Meeting</u> – Indianapolis, IN April 12 – 14, 2018

NEDSI Annual Meeting – Providence, RI April 12 – 14, 2018 EDSI Annual Meeting – Venice and Udine, Italy June 3 – 6, 2018

<u>APDSI Annual Meeting</u> – Bangkok, Thailand July 16 - 20, 2018



Indiana University - Purdue hosts MWDSI Annual Meeting



OFFICERS OF OUR AMERICAS REGIONAL SUBDIVISIONS

MWDSI

President: Peggy Daniels Lee, Indiana University Purdue University – Indianapolis

Past President: Jaideep Motwani, Grand Valley State University

President-Elect: Sanjay Kumar, Valparaiso University

Secretary: Manohar Madan, University of Wisconsin – Whitewater

Treasurer: Jun He, University of Michigan – Dearborn

VP, Planning & Development: Jean Essila, Northern Michigan University

VP, Publications: Mark Dobeck, Cleveland State University

VP, Member Services: Xiangling Hu, Grand Valley State University

VP, Student Liaison: John Parente, Mercyhurst University

VP, Industry Liaison: Qiannong "Chan" Gu Ball State University

Archivist: Xiaodong Deng, Oakland University

V.P. of Technology: Gene Fliedner, Oakland University

NEDSI

President: Pedro Reyes, Baylor University

Immediate Past President: Joy Field, Boston College

President-Elect: Neset Hikmet, University of South Carolina

Program Chair (2018): Doug Hales, University of Rhode Island

Program Chair-Elect (2019): Eric Stein, Pennsylvania State Univ - Malvern

VP Communications: Hal Ravinder, Montclair State University

VP Member Services: Carolyn Lamacchia, Bloomsburg University of Pennsylvania

VP Promotional Activities: Javad Paknejad, Hofstra University

VP Technology: Koray Ozpolat, University of Rhode Island

Treasurer: Lynn Ruggieri, Roger Williams University

Secretary: Gang Li, Bentley University

Archivist: Jennifer Swanson, Stonehill College

SEDSI

President: Suzie Smith, Presbyterian College

President Elect: Reza Kheirandish, Clayton State University

Past-President: Jason Deane, Virginia Tech

Program Chair: Tobin Turner, Presbyterian College

Program Chair Elect: Cheryl Aasheim, Georgia Southern University

Secretary (2016-2017):Sara Bliss Kiser, Alabama State University

V.P. Finance: Chris McCart, Roanoke College

V.P. Member Services: Ali Nazemi, Roanoke College

V.P. Planning & Development: Mauro Falasca, East Carolina University

V.P. Publications: Shona Morgan, North Carolina A&T University

V.P. Student Services: Laquanda Leaven, North Carolina A&T University

V.P. Meetings: L. Drew Rosen, University of North Carolina Wilmington

V.P. Web Services: John O'Malley, Georgia Southern University

Archivist: George S. Lowry, Randolph-Macon College

SWDSI

President: Mohan Rao, Texas A&M University-Corpus Christi

President-Elect: Mark McMurtrey, University of Central Arkansas

Program Chair: Khaled Alshare, Qatar University

Program Chair-Elect: Matthew Lindsey, Stephen F. Austin State University

Past President: Hong Qin, University of Texas - Rio Grande Valley

Secretary: Kittipong Boonme , Texas Women's University

VP- Finance: Michael Lane, Missouri Western State University

VP - Member Services: Gina Harden, Stephen F. Austin State University

CONT. FROM PG. 34 **VP - Student Liaison:** Victor Prybutok, University of North Texas

Regional Archivist: Mike Hanna, University of Houston- Clear Lake

WDSI

President: Natasa Christodoulidou, CSU Dominguez Hills

Immediate Past President: John Bell, University of Tennessee

President Elect: Albert Huang, University of the Pacific

Vice President of Programs and Program Chair: Omer Benli, CSU Long Beach

Vice President and Program Chair Elect: Theodore Byrne, CSU Dominguez Hills

Vice President for Members Services: Salem Boumediene, Montana State University-Billings

Secretary Treasure: Sheldon Smith, Utah Valley University

Director of Information Systems: Khosrow Moshirvaziri, CSU Long Beach

OFFICERS OF OUR INTERNATIONAL REGIONAL SUBDIVISIONS

APDSI

President: Tritos Laosirihongthong, Thammasat University, Thailand

Past President: Daesik Hur, Yonsei University, Korea

President-Elect: Don Kerr, University of the Sunshine Coast, Australia

VP, Australiasia: Don Kerr, University of the Sunshine Coast, Australia

VP, At Large: Jiahua weng, Waseda University, Japan

EDSI

President: Gyula Vastag, Szechenyi University

Immediate Past President: Constantin Blome, University of Susex

President-Elect: Marco Sartor, University of Udine

European VP: Markku Kuula, Aalto University

VP South Europe: Sukran Atadeniz, Yeditepe University

VP North Europe: Bart MacCarthy, University of Nottingham

VP Technology: Jose Benitez, University of Granada

ISDSI

President: Abhijeet K. Digalwar, BITS, Pilani

Vice President: Ravi Kumar Jain, Symbiosis Institute of Business Management – India

Vice President (At Large): Ramachandran (Nat) Natarajan, Tennessee Tech University

Director: Bhimaraya A. Metri, Indian Institute of Management

Director: Nilesh Berad, MET Institute of Management

OPEN POSITIONS AT HIGHER EDUCATION INSTITUTIONS

The Decision Sciences Institute website provides a listing of open academic positions. Below you will find Placement Listings for January 26 - March 15, 2018. For more details on these and other position listings, as well as applicant listings, visit the DSI website – <u>decisionsciences.org</u> Ready to post a position? Guidelines on how to list your position can be found there as well.

POSTING DATE	INSTITUTION	LOCATION	JOB TITLE	JOB TYPE	AREA OF INTEREST	
3/15/18	The University of Auckland	Auckland	Senior Lecturer/Associate Full Time Professor see details		Business Analytics	
3/15/18	Kent State University	Warren, Ohio, USA	Assistant Professor see details	Full- Time	Management Information Systems	
3/14/18	Northeastern State University	Tahlequah/Broken ArrowOK, USA	Assistant Professor see details	Full TimeTenure Track	Business Decision Analysis, Operations Management, Business Statistics, Manage- ment	
3/9/18	Old Dominion Uni- versity	Norfolk, Virginia, USA	<u>Clinical Assistant/Associate</u> <u>Professor see details</u>	Full Time-Clinical	Maritime Supply Chain Management	
3/9/18	Washington Uni- versity	St. Louis, MO, USA	Visiting Position or Lecturer see details	Full Time	Operations Management	
2/19/18	Virginia Common- wealth University	Richmond, VA, USA	Assistant/Associate Profes- sor see details	Full TimeTenure Track	Supply Chain Management & Analytics	
2/19/18	University of Maine	Orono, Maine	Assistant Professor see details	Full TimeTenure Track	Management Information Systems Opera- tions Management	
2/14/18	Arizona State Uni- versity	Tempe, AZ, USA	<u>Clinical Assistant Professor</u> and Lecturer see details	Non-Tenure Track	Operations, Supply Management or Logis- tics	
2/12/18	University of Illinois	Champaign,IL, USA	Postdoctoral Fellow see de- tails_	Full Time	Information Systems, International Business,Organizational Behavior,Marketing	
2/8/18	Michigan State University	East Lansing, Mi, USA	Instructor/Assistant Profes- sor see details	Half Time/Fixed Term	Logistics/Transportation	
2/2/18	University of Rhode Island	Kingston, RI	Lecturer see details	Full Time Aca- demic	Supply Chain Management	
1/31/18	University of Hous- ton	Houston, TX, USA	Assistant/Associate Profes- sor see details	Full Time	Technology Project Management	
1/26/18	Georgia Southern University	Statesboro, Georgia, USA	Assistant Professor see details	Full Time	Logistics & Supply Chain Management	
1/26/2018	Louisiana State University	Baton Rouge,LA, USA	Assistant Professor see details	Full Time	Entrepreneurship & Information Systems	

2010 - CURRI	ENT	1994–1995
2016–2017	Funda Sahin, University of Houston	1993–1994
2015–2016	Morgan Swink, Texas Christian University	1992–1993
2014–2015	Marc Schniederjans, Deceased	1991–1992
2013–2014	Maling Ebrahimpour, University of South Florida, St. Petersburg	1990–1991
2012–2013	E. Powell Robinson, Jr., University of Houston	1989–1990
2011–2012	Krishna S. Dhir, Berry College	
2010–2011	G. Keong Leong, University of Nevada, Las Vegas	1981 - 198 1989-1990
2009–2010	Ram Narasimhan, Michigan State	1988-1989
	University	1987-1988
		1986-1987
2000 - 2009		1985-1986
2008–2009	Norma J. Harrison, Macquarie Graduate School of Management	
2007–2008	Kenneth E. Kendall, Rutgers University	1984–1985
2006–2007	Mark M. Davis, Bentley University	1983–1984
2005–2006	Thomas E. Callarman, China Europe International Business School	1982–1983
2004–2005	Gary L. Ragatz, Michigan State University	1981-1982
2003–2004	Barbara B. Flynn, Indiana University	1901-1902
2002–2003	Thomas W. Jones, University of Arkansas–Fayetteville	1979–1981
2001–2002	F. Robert Jacobs, Indiana University– Bloomington	DSI FOUND
2000–2001	Michael J. Showalter, Florida State University	1978–1979
1999–2000	Lee J. Krajewski, University of Notre	1977–1978
	Dame	1976–1977
1990-1999		1975–1976
1998–1999	Terry R. Rakes, Virginia Tech	1974–1975
1997-1998	James R. Evans, University of	
	Cincinnati	1973–1974

94–1995	K. Roscoe Davis, University of Georgia
93–1994	Larry P. Ritzman, Ohio State University
92–1993	William C. Perkins, Indiana University– Bloomington
91–1992	Robert E. Markland, University of South Carolina
990–1991	Ronald J. Ebert, University of Missouri–Columbia
89–1990	Bernard W. Taylor, III, Virginia Tech
981 - 1989	
89–1990	Bernard W. Taylor, III, Virginia Tech
988–1989	William L. Berry, Ohio State University
987–1988	James M. Clapper, Aladdin TempRite
86–1987	William R. Darden, Deceased
985–1986	Harvey J. Brightman, Georgia State University
984–1985	Sang M. Lee, University of Nebraska– Lincoln
983–1984	Laurence J. Moore, Virginia Tech, Deceased
982–1983	Linda G. Sprague, China Europe International Business School
981–1982	Norman L. Chervany, University of Minnesota–Twin Cities
979–1981	D. Clay Whybark, University of North Carolina–Chapel Hill
SI FOUNDED) – 1979
978–1979	John Neter, University of Georgia
977–1978	Charles P. Bonini, Stanford University
976–1977	Lawrence L. Schkade, University of Texas–Arlington
975–1976	Kenneth P. Uhl, Deceased
974–1975	Albert J. Simone, Rochester Institute of Technology

Gene K. Groff, Georgia State

Rodger D. Collons, Drexel University

George W. Summers, Deceased

Dennis E. Grawoig, Deceased

University

1972-1973

1971-1972

1969-1971

DSI FELLOWS

Adam, Everett E., Jr. Anderson, John C. Benson, P. George Beranek, William Berry, William L. Bonini, Charles P. Brightman, Harvey J. Buffa, Elwood S.* Cangelosi, Vincent* Carter, Phillip L. Chase, Richard B. Chervany, Norman L. Clapper, James M. Rodger D. Collons Couger, J. Daniel* Cummings, Larry L.* Darden, William R.* Davis, K. Roscoe Davis, Mark M. Day, Ralph L.* Digman, Lester A. Dock, V. Thomas Ebert, Ronald J. Ebrahimpour, Maling Edwards, Ward Evans, James R. Fetter, Robert B. Flores, Benito E. Flynn, Barbara B. Franz, Lori S. Ghosh, Soumen Glover, Fred W. Gonzalez, Richard F. Grawoig, Dennis E.* Green, Paul E. Groff, Gene K. Gupta, Jatinder N.D. Hahn, Chan K. Hamner, W. Clay

Hayya, Jack C. Heineke, Janelle Hershauer, James C. Holsapple, Clyde Horowitz, Ira Houck, Ernest C.* Huber, George P. Jacobs, F. Robert Jones, Thomas W. Kendall, Julie E. Kendall, Kenneth E. Keown, Arthur J. Khumawala, Basheer M. Kim, Kee Young King, William R. Klein, Gary Koehler, Anne B. Krajewski, Lee J. LaForge, Lawrence Latta, Carol J.* Lee, Sang M. Luthans, Fred Mabert, Vincent A. Malhotra, Manoj K. Malhotra, Naresh K. Markland, Robert E. McMillan, Claude * Miller, Jeffrey G. Monroe, Kent B. Moore, Laurence J.* Moskowitz, Herbert Narasimhan, Ram Neter, John Nutt, Paul C. Olson, David L. Perkins, William C. Peters, William S. Philippatos, George C. Ragsdale, Cliff T.

Raiffa, Howard * Rakes, Terry R. Reinmuth, James R. Ritzman, Larry P. Roth, Aleda V. Rungtusanatham, Manus (Johnny) Sanders, Nada Schkade, Lawrence L. Schniederjans, Marc J.* Schriber, Thomas J. Schroeder, Roger G. Simone, Albert J. Slocum, John W., Jr. Smunt, Timothy Sobol, Marion G. Sorensen, James E. Sprague, Linda G.* Steinberg, Earle

Summers, George W.* Tang, Kwei Taylor, Bernard W., III Troutt, Marvin D. Uhl, Kenneth P.* Vakharia, Asoo J. Vazsonyi, Andrew* Voss, Christopher A. Ward, Peter T. Wasserman, William* Wemmerlov, Urban Wheelwright, Steven C. Whitten, Betty J. Whybark, D. Clay Wicklund, Gary A. Winkler, Robert L. Woolsey, Robert E. D. Wortman, Max S., Jr.* Zmud, Robert W.

*Deceased

In order for the nominee to be considered, the nominator must submit in electronic form a full vita of the nominee along with a letter of nomination which highlights the contributions made by the nominee in research, teaching and/ or administration and service to the Institute. Nominations must highlight the nominee's contributions and provide appropriate supporting information which may not be contained in the vita. A candidate cannot be considered for two consecutive years.

Send nominations to:

Chair of the Fellows Committee Decision Sciences Institute

C.T. Bauer College of Business 334 Melcher Hall, Suite 325

Houston, TX 77204-6021 info@decisionsciences.org

INSTITUTE CALENDAR

2018

Western DSI Annual Meeting	June 3 - 6	European DSI Annual Meeting		
Kauai, Hawaii		Venice and Udine, Italy		
Midwest DSI Annual Meeting	5	Asia-Pacific DSI Annual Meeting		
Indianapolis, IN		Bangkok, Thailand		
Northeast DSI Annual Meeting	November 16-19	DSI National Annual Meeting		
Providence, RI		Chicago Hilton, Chicago, IL		
	Kauai, Hawaii Midwest DSI Annual Meeting Indianapolis, IN Northeast DSI Annual Meeting	Kauai, Hawaii July 16 -20 Midwest DSI Annual Meeting July 16 -19 Northeast DSI Annual Meeting November 16-19		

Visit the DSI website for details on these upcoming events.

MEMBERSHIP RATES

DSI Membership Rates							
Based on the GDP per Capita (PPP)							
All dues amounts are in United States dollars (\$)							
	MEMBER	MEMBER		MEMBER			
	CATEGORY A	CATEGORY B	CATEGORY C				
	Greater than 75th						
MEMBER TYPE	Percentile	50th -75th Percentile		less	than 50th Percent	ile	
Regular	\$160	\$80		2000	\$40		
Emeritus	\$100	\$40			\$20		
Student	\$0				\$0		
Student	ŞU	\$0			ŞU		
	Australia	Andorra	Afghanistan	Congo, Republic of the	Iraq	Nicaragua	South Africa
	Austria	Bahamas, The	Albania	Cook Islands	Jamaica	Niger	South Sudan
	Bermuda	Bahrain	Algeria	Costa Rica	Jordan	Nigeria	Sri Lanka
	British Virgin Islands	Belgium	American Samoa	Cote d'Ivoire	Kazakhstan	Niue	Sudan
	Brunei	Denmark	Angola	Croatia	Kenya	N. Mariana Islands	Suriname
	Canada	European Union	Anguilla	Cuba	Kiribati	Pakistan	Swaziland
	Cavman Islands	Faroe Islands	Antigua and Barbuda	Curacao	Korea, North	Palau	Syria
	Falkland Islands	Finland	Argentina	Cyprus	Kosovo	Panama	Tajikistan
	(Islas Malvinas)	France	Argentina Armenia	Czech Republic	Kyrgyzstan	Papua New Guinea	Tanzania
	Gibraltar	Germany	Aruba	Djibouti	Laos	Paraguay	Thailand
	Guernsey	Greenland	Azerbaijan	Dominica	Laos Latvia	Peru	Timor-Leste
	Hong Kong	Guam	Bangladesh	Dominican Republic	Lebanon	Phillippines	Togo
	Iceland	Israel	Barbados	Ecuador	Lesotho	Poland	Tokelau
	Ireland	Italy	Belarus	Egypt	Liberia	Portugal	Tonga
	Isle of Man	· ·	Belize	Egypt El Salvador	Libya	Puerto Rico	Trinidad and
	Jersey	Japan Korea, South	Benin	Equatorial Guinea	Libya	Romania	Tobago
	Kuwait	Malta	Bhutan	Eritrea	Macedonia	Russia	Tunisia
	Liechtenstein	New Caledonia	Bolivia	Estonia	Madagascar Malawi	Rwanda	Turkey Turkmenistan
	Luxembourg	New Zealand	Bosnia and Herzegovina	Ethopia		Saint Helena, Ascension, and Tristan da Cunha	
	Macau Monaco	Oman Seint Bienne and Minuslau	Botswana	Fiji Fasa ak Dalamasia	Malaysia Maldiyes	Saint Kitts and Nevis	Tuvalu
		Saint Pierre and Miquelon	Brazil	French Polynesia			Uganda
	Netherlands	Saudi Arabia	Bulgaria	Gabon	Mali	Saint Lucia	Ukraine
	Norway	Slovenia	Burkina Faso	Gambia, The	Marshall Islands	Saint Vincent and	Uruguay
	Qatar	Spain	Burma	Georgia	Mauritania	the Grenadines	Uzbekistan
	Singapore	Taiwan	Burundi Cabo Verde	Ghana	Mauritius	Samoa	Vanuatu
	Sweden	Turks and Caicos Islands		Greece	Mexico	San Marino	Venezuela
	Switzerland	United Arab Emirates	Cambodia	Granada	Micronesia	Sao Tome and	Vietnam
	United States	United Kingdom	Cameroon	Guatemala	Moldova	Principe	Virgin Islands
			Central African Rep.	Guinea	Mongolia	Senegal	Wallis and Futuna
			Chad	Guinea-Bissau	Montenegro	Serbia	West Bank
			Chile	Guyana	Montserrat	Seychelles	Western Sahara
			China	Haiti	Morocco	Sierra Leone	Yemen
			Colombia	Honduras	Mozambique	Saint Maarten	Zambia
			Comoros	Hungary	Namibia	Slovakia	Zimbabwe
			Congo, Democratic	India	Nauru	Solomon Islands	
			Republic of the	Indonesia	Nepal	Somalia	