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From the President

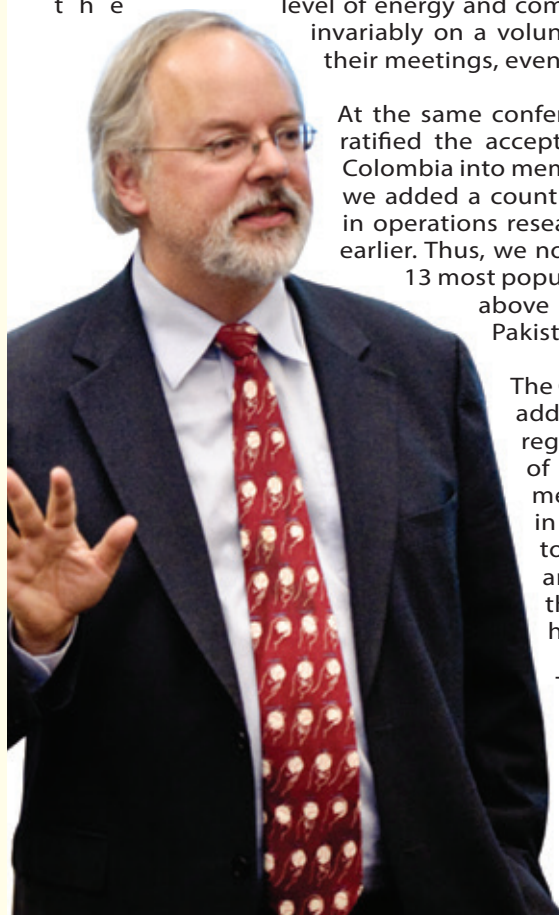
In Praise of National Societies

Mike Trick <trick@cmu.edu>

IFORS is an unusual society since its members are themselves societies: national operational research societies. Ranging from such internationally-known ones as The Operational Research Society (UK), and INFORMS (US), to those that are only recognized within their countries, all of them play a critical role in advancing the field of operational research. They have functions that IFORS can never perform:

- 1) Provide opportunities for local students to present their work without the time and expense of an international trip,
- 2) Explain the importance of operational research to local governments and agencies,
- 3) Coordinate local universities to enhance the teaching of operational research,
- 4) Engage local practitioners in the community on a regular basis, and
- 5) Much, much more

During IFORS 2017 in Quebec City (a great conference, in my view!), I met with representatives of many national societies, both during the Board of Representatives meeting and informally throughout the week. I was struck by the level of energy and commitment they had for their societies, invariably on a volunteer basis. It was exciting to hear of their meetings, events, and activities.



At the same conference, the Administrative Committee ratified the acceptance of the societies of Russia and Colombia into membership. With the inclusion of Russia, we added a country with a long and influential history in operations research, dating back to Kantorovich and earlier. Thus, we now have member societies in 9 of the 13 most populous countries (those with population above 100 million), missing only Indonesia, Pakistan, Bangladesh, and Ethiopia.

The Colombian society, on the other hand, adds to the vibrant ALIO South American regional grouping. I had the pleasure of speaking at the second national meeting of the Colombian society held in Medellín last August. It was fantastic to see 200 enthusiastic participants and excellent talks. It was clear to me that Colombian operational research has a bright future.

The IFORS 2017 meeting had participants from more than 60 countries. Compared to the 51 members that IFORS currently has, it is indeed time for IFORS to recruit more into the association of associations!

Finally, on a personal note, I am about to move to a country without a national OR society when I become Dean of the Carnegie Mellon campus in Doha, Qatar. It would be great if it became our next member! 🌐

Worth the Wait

Elise del Rosario <elise.del.rosario@stepforward.ph>

The international OR community awaited IFORS 2017 with much anticipation, participated in it with a lot of enthusiasm, contributed to and basked in the excellent organization, and by conference-end, headed for home with pleasant memories, discovered knowledge resources, new acquaintances, renewed friendships, strengthened networks, and the satisfaction of having shared knowledge which others can use or enrich. To convey this conference experience, we turned to the adage "a picture is worth a thousand words", thus peppering this September issue with a lot more than its usual share! For example, these two pictures highlight the learning and the fun that was present everywhere at IFORS 2017!

It was a perfect time to celebrate not only with the Canadians who are observing their 150th anniversary, but also with the IFORS community, whose journal, the *International Transactions in Operational Research* (ITOR), again attained an impressive improvement in its impact factor. In this issue, we are let into the secrets behind this success. Here, our ITOR Editor mentions the importance of IFORS focus on the use of OR for development. In this aspect, IFORS 2017 certainly did not disappoint as it featured two major events: the annual International Conference on OR for Development (ICORD) and the IFORS Prize for OR in Development. These two accounts hopefully bring the realization that yes, OR work is happening here! Strengthening this point is the OR Impact section relating how OR had been used to promote volunteer work in New Zealand.

Of course, new developments in technology are given due importance with this issue's Tutorial on E-commerce and its



▲ Elise del Rosario at IFORS 2017: on a conference podium and in a Huron-Wendat First Nation tribal dwelling: sharing with others, learning about another culture.

rich potential for OR applications. Mention is made about optimizing consumer choices that E-commerce brings about. But how does the human mind make choices and other decision-making functions? Read about the people who brought this into focus in our Book Review.

We also look at the conferences and meetings happening all over the world - those held in Turkey, Greece and Iran as well as a 2018 summer schools in Chile and Germany that are looking for scholars. Meanwhile, the community commiserates with friends from Africa, who recently lost the Father of OR in Nigeria, Joseph Funso Akingbade.

As we lose some of our great teachers, we find joy in gaining new members. The most recent IFORS members, the national societies of Colombia and Russia, were presented to the Board of Representatives meeting during the conference. Get to know the Colombian society, our OR Society in Focus this September. The nominees for future IFORS leaders were also announced, and are introduced here.

In his editorial, our President outlines the great service performed by national societies. To ensure that they succeed, it is important that they are managed well. We introduce a new section that will feature ideas on Association Administration and Governance for the benefit of both members and IFORS itself.

Participants may have left the Triennial conference in Quebec, but not before witnessing the efforts that went into building anticipation for the Triennial to come in Seoul, IFORS 2020. If past experience is a good predictor, then this will be another Triennial worth waiting for! 🌐



News

Triennial Strengthens International OR Ties Anew

Gerhard-Wilhelm Weber <gweber@metu.edu.tr> Milagros R. Baldemor <milagros_baldemor@yahoo.com.ph>

The 21st International Federation of Operations Research Societies (IFORS) Triennial Conference was a remarkable gathering of more than 1600 researchers, presenters and participants from 165 countries. Around 1300 accepted abstracts were scheduled in 360 different sessions which included applications of OR in Education, Health, History, Ethics, Data Science and Analytics, Performance Measurement, Financial Modeling, Optimization, and Supply Chain Management.

The conference covered a wide range of topics within the Main Areas and Streams. The breadth of the topics can be gleaned from the plenary talks given by: Alvin Roth on *Marketplace Design*; Egon Balas on *Disjunctive Programming as a Tool to Convexity/Convex Sets*; Martine Labbé on *Bilevel Programming, Pricing Problems and Stackelberg Games*; Andres Weintraub on *OR Practice Matters*. Equally varied topics

were discussed by keynote speakers: Dave Stanford on *Key Performance Indicators and their Optimal Performance*; John Birge on *Stochastic Optimization with Particles and Markov Chains*; Roman Slowinski on *Preference Learning through Robust Ordinal Regression*; Stefania Bellavia on *Computational Aspects in Second Order Methods for Large Scale Optimization*; Julia Bennell on *Get Packing! Key Concepts and Future Directions in Cutting and Packing Problems*; Avishai Mandelbaum on *Theomperical Research in OR/IE/OM: A Theory and Data-Based Journey though Service Systems*; Detlof von Winterfeldt on *Decision Analysis to Improve Homeland Security*; Azuman Ozdaglar on *Incremental Methods for Additive Convex Cost Optimization*; Ulrike Leopold Wildburger on *Operations Research and Behavioral Economics* and Sophie D'Amours on *Value Chain Modeling and Optimization in the Forest Sector*.



▲ The Quebec Conference Center (right) offered sufficient space for all the attendees both for the conference and the social gatherings, such as the Welcome Reception (left).



▲ M. Grazia Speranza acknowledges contributions from everyone as she opens the Conference.

Some participants cited the conference as the best that they have so far attended, while to many, it was an “unforgettable event”. Of course, this result owes much to the organization led by the Organizing Committee Chair, Irene Abi-Zeid, Bernard Gendron, Michael Morin and Angel Ruiz. The Program Committee Chair M. Grazia Speranza with her team put together a fruitful learning experience against the backdrop of a beautiful city with an “Old France” charm.

IFORS President Michael Trick was on hand to welcome the guests and bid them adieu in the closing ceremonies. Many IFORS sessions were organized, which dealt with IFORS Past, Present and Future, the IDL Retrospective, and a Panel

Discussion with the Administrative Committee. Through these sessions, participants got to know more about IFORS, which Trick referred to as a “society of societies that brings together national organizations of fifty countries to advance Operational Research”. Indeed, during the whole conference, Operational Researchers all over the world came together to exchange ideas, advance knowledge and make friendships.



▲ Irene Abi-Zeid concludes the Conference with profuse thanks to those who contributed and with a sigh of relief that everything went as planned.

It was an experience of discovering new horizons, sharing knowledge, experiences and expertise among people from different backgrounds and cultures coming together as one. This was definitely one way of bringing a better world through Analytics! 🌍

A Quintessential Triennial in Quebec

Dionne Aleman <aleman@mie.utoronto.ca> **President, Canadian OR Society**

The 21st Triennial IFORS conference was held July 17-21, 2017 in picturesque Québec City, Canada. This conference marks the third time that Canada has been honoured with an IFORS conference, and is the first IFORS conference held in the province of Quebec. Opened with an entertainment number from circus performers and an ice cream treat at the closing, this conference was a uniquely memorable combination of wonder, whimsy, and operations research.

The theme of the conference, **OR/Analytics For A Better World**, ran a thread through each day's activities. Thanks to the tireless work of the conference's four organizing committee members and 21 program committee chairs, between the four plenaries, 10 keynotes, and 1300+ talks spread over 27 areas, there was no shortage



▲ CORS President welcomes participants. Circus performance provides a rousing welcome.

of knowledge dissemination around innovative applications of OR to address societal challenges, from healthcare to environment to security. >>

>> In the plenaries, Nobel Laureate Alvin Roth presented a marketplace design approach to coordinated kidney transplants, including a discussion of challenges in international collaborations of organ exchange created by economic disparity, while Andres Weintraub touched upon natural resource



▲ Shown above is the auditorium packed with participants from all over the world waiting for one of the plenaries to start.

allocation as an example of integrating OR into practice. In the keynotes, Sophie D'Amours also discussed natural resource planning, Avishai Mandelbaum and David Stanford incorporated healthcare perspectives into their areas of research, and Detlof von Winterfeldt showed how OR can bolster homeland security. Pure math contributions also took centre stage at the conference: Plenary speakers Egon Balas, the Canadian OR Society Harold Larnder Prize winner, and Martine Labbé presented their contributions to disjunctive programming and bilevel programming, respectively.

Nestled a few steps from the Quebec Provincial Parliament building and the famous walled city of old Québec, the conference venue afforded attendees with the opportunity to immerse themselves in French-Canadian culture without having to leave the conference. Some lucky conference-goers may even have caught a glimpse of Canadian Prime Minister

Justin Trudeau, who was visiting the Quebec Parliament during the conference. Tours of the old city and surrounding countryside provided a taste of Canadian life: waterfalls, rivers, and rolling hillsides next to both quaint communities and world-class cities.

The conference was electric with the energy of the attendees, and several new collaborations were inspired by the top-notch presentations and exciting conference surprises. Attendees were treated to the Quebec atmosphere, complete with a Music Festival and a grand 150th anniversary celebration of Canada. The festivities made its way into a circus performance at the opening ceremonies, the free ice cream for the closing session, and a soprano for banquet entertainment. All these moments were carefully thought through by the local organizing team led by Irène Abi-Zeid. Of course, the Program Committee led by Maria Grazia Speranza made sure that there were interesting quality topics for all sectors of the OR profession. The perfect venue, flawlessly coordinated events, and carefully selected distinguished speakers made for a quintessential triennial conference! 🌍



▲ APORS, ALIO, EURO and NORAM all present here!



▲ Above (clockwise from top left): Alvin Roth, Egon Balas, Andres Weintraub and Martine Labbe delivered remarkable plenary lectures.

Triennial Features Special IFORS Sessions

Luciana Buriol <buriol@inf.ufrgs.br>



▲ President Mike presides over the Board of Representatives meeting.

With the aim of getting Conference participants more acquainted with IFORS, special sessions on the history of the organization, on a second look at the IDL program, and an Committee panel were added to the administrative Board of Representatives meeting that has traditionally been held at every IFORS Triennial.

The *IFORS History* session organized by Graham Rand was entitled **IFORS Past, Present and Future**. Rand started the session with the beginnings of IFORS (a summary of which appears in the IFORS News "A Nostalgic Look at 60 Years of OR" written by Graham Rand in the June 2017 pp.22-23) made lively by faded pictures, stories, and interviews with IFORS personalities. His account included how Sir Charles Goodeve (UK), organized the first IFORS Conference, became the first President of IFORS (1959-1961) which counted the three member societies of USA, UK, and France. Tales from most of the early Triennial conferences were shared to the delight of the audience.

His presentation was followed by that of Peter Bell (Canada), from the more recent Past, who shared highlights of his Presidency from 1995 to 1997. Elise del Rosario (Philippines) who to-date is the only woman President (2007-2009) of IFORS surprised the audience with more stories. She described how she was recruited by Peter Bell to be the Chair of the Developing Countries Committee, which is why she had a lot to do with the current activities in the area, having organized ICORD since 2012. She also discussed her thrust to communicate with the membership, resulting in her emphasis on the newsletter and the website which were relaunched during her time as President. In 2017 IFORS quarterly News is turning 10 years old and she has carefully collected news, personally edited and organized every issue since 2009.

The session ended with the Future of IFORS, with current President Michael Trick pointing out recent developments in the area of the IFORS Journals, how IFORS conferences can distinguish themselves from other such OR conferences and how the societies benefit from their IFORS membership.

He ended with some insights about business analytics around the world.

The other IFORS session was called **IFORS Distinguished Lecture (IDL) Retrospective**. Since 1999, IFORS sponsors IDLs delivered by distinguished OR researchers during regional meetings (ALIO, APORS, EURO and NORAM). In this session, selected past IFORS Distinguished Lecturers dealt with the advances of the work they originally presented in their IDLs. They were: Nelson Maculan - CLAIO 2000 (Mexico City, Mexico); Michael Florian - CLAIO 2002 (Concepción, Chile); Andrés Weintraub - CLAIO 2004 (La Havana, Cuba); and Silvano Marlello - CLAIO 2012 (Rio de Janeiro, Brasil).



▲ IFORS President Mike Trick presents gift to immediate Past President Nelson Maculan.



▲ Graham Rand starts the IFORS Past, Present and Future session from the very beginning

The discussions brought to the fore the impact of OR on people's lives. The speakers talked about the theory and practice of OR: experiences with applied steiner tree problems, transportation science, forest management planning, and computer networks. The whole range of topics from approximation algorithms to natural resources and from Fermat's last theorem to market transportation planning. It is interesting that the session turned out not only as a technical update but a reunion of sorts, a group of old friends enjoying each others' company, at the same time keen to welcome new members to the OR family.

A **Panel Discussion with the Administrative Committee** briefly described the role of each AC member, new developments and thrusts with the audience bringing up such important points as: organizing IFORS Conferences that

are of the same high quality but at a lower cost for participants; motivating new member societies to join IFORS; ways by which IFORS can extend help to developing countries; and how a new journal dedicated to many interesting applications could be launched. This was ahead of the Board of Representatives Meeting which reported on the past years' accomplishments and future directions.

The above sessions were successful in focusing discussion on IFORS as an organization and its lasting impact on international OR over the years. 🌐

Committee Bares Nominees for IFORS President and Vice President for 2019-2021

During the Board of Representatives meeting held on July 18, 2017, the Nominating Committee chaired by Elise del Rosario put forth the names of M. Grazia Speranza and “David” Chang Won Lee as nominees for President and Vice President at large, respectively, for the period 2019 to 2021.

IFORS Statutes and By Laws given under Article 5, Nos. 5 and 6 provide for a nominating committee consisting of the 3 most recent living past presidents who shall present its nominees to the General Membership.

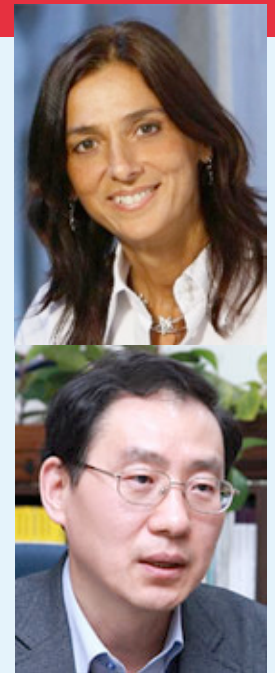
The same rules state that additional nominations supported by at least 3 national societies may be accepted at the latest one year before January 1 of a year exactly divisible by 3. Should there be any other nominees, elections will be held by means of a 3-month ballot. If no candidate receives a majority of the votes cast on the first ballot, a second three-month ballot will be held immediately between the top two candidates.

In this cycle, the nominating committee is composed of Chairperson Elise del Rosario (President 2007 -2009); Dominique de Werra (President 2010 – 2012); and Nelson Maculan (President 2013 – 2015). **Deadline for submission of other nominations is December 31, 2017.**

M. Grazia Speranza is a full professor of Operations Research at the University of Brescia, where she currently serves as Vice Rector. She held the following positions: President of EURO (2011-2012); President of the TSL (Transportation Science and Logistics) society of INFORMS in 2014; and Vice

President of IFORS representing EURO (2007-2009). She has served as Plenary Speaker at several international conferences, author of around 200 papers published in international journals and volumes, Editor of journals such as Transportation Science, EURO Journal on Transportation and Logistics, International Transactions in Operational Research, 4OR, and editor-in-chief of the series ‘Advanced Tutorials in Operational Research’.

Vice Presidential nominee Chang Won Lee is a full professor of Operations and Service Management (OSM) and Healthcare MBA program at Hanyang University Business School, Seoul, Korea. He is Director of Centre for Tech Entrepreneurial Studies and has served as OSM Chair, Healthcare MBA Director, MBA Director, and Associate Dean of Management Education Institute. Within IFORS, he is currently IFORS VP representing APORS and KORMS representative to IFORS. He has served as Organizing/Program Chair of local and international conferences, Editor of several journals and author of around 100 papers published in local and international journals and volumes. 🌐



A First in the Americas EUROPT Holds Workshop in Montréal

Emilio Carrizosa <emilio.carrizosa.seio@gmail.com>
Gerhard Wilhelm Weber <gweber@metu.edu.tr>

The 15th EUROPT workshop was held at the HEC of Polytechnique Montréal, Canada on July 12 to 14, just before the IFORS conference held in Quebec. The continuous optimization working group of EURO, EUROPT, has held its annual meetings since it was first established in Budapest in 2000.

Chaired by Miguel Anjos and Sébastien Le Digabel of Polytechnique, Montréal, the conference had 300 participants from all over the world, this time, with a big representation from the Pacific Optimization Research Activity Group (POP). Participants from North and South America celebrated the first EUROPT held in the Americas.

Plenary Talks were given by Shabbir Ahmed, Timothy Chan, and Francisco Facchinei. Annually, a EUROPT Fellow is chosen by the EUROPT Managing Board based on the nominations received from members. This year, the EUROPT Fellow Plenary Talk was given by Miguel Anjos. Invited Streams and Sessions covered a variety of timely topics,

methodological advances and new industrial applications.

The scientific program, <https://symposia.gerad.ca/europt2017/en/schedule>, is proof of not only of how dynamic the field of Continuous Optimization is, but also of how active EUROPT is.

The workshop carved out special sessions in memory of three brilliant and unforgettable colleagues who passed away: Jonathan M. Borwein, Roger Fletcher and Christodoulos A. Floudas. The talks given by their coauthors and colleagues ensure their presence in future meetings at least in the hearts of those present.

EUROPT 2018 Workshop has been scheduled on the 12th and 13th of July in Almería, southeast of Spain on the Mediterranean Sea. Participants of the EURO 2018 conference in Valencia, Spain from July 8-11 (<http://euro2018valencia.com/>) will find this timing and location optimal indeed! 🌐



HELORS Stages Successful Symposium

Evangelos Grigoroudis <vangelis@ergasya.tuc.gr>

The Hellenic Operational Research Society (HELORS) held its 6th International Symposium and 28th National Conference on Operational Research in Thessaloniki-Greece from June 8 to 10, 2017.

Invited plenary talks were given by Panos Pardalos (University of Florida), Georgios Doukidis (Athens University of Economics and Business, Greece) and John Tsitsiklis (Massachusetts Institute of Technology). For his contributions to the development of operational research in Greece and internationally, plenary Speaker Tsitsiklis was bestowed the national award in operational research by HELORS.

Recent advances in operational research, including new methodological developments as well as applications and case studies in a wide range of fields, such as Multicriteria Decision Making, Data Envelopment Analysis, Logistics Optimization, Finance & Economics, Strategy & Analytics, Supply Chain Optimization, Digital Economy, Forecasting & Maintenance Optimization, Agricultural Management, ICT, Statistics & Data Mining, Business



▲ National Awardee for OR John Tsitsiklis of MIT delivers his plenary talk.

Process Management, Construction, Environmental Management and Healthcare were covered in the 82 presentations by Greek and foreign researchers.

The conference was chaired by Maro Vlachopoulou (School of Information Sciences and the Department of Applied Informatics, University of Macedonia) and by Glykeria Kalfakakou and Manos Vasilis (Aristotle University of Thessaloniki). Conference organizers from the University of Macedonia included Emmanuil Stiakakis, Fotis Kitsios, Angelo Sifaleras and Konstantinos Vergidis, Michael Madas, Christos Ziakis, and Konstantinos Petridis as well as from Aristotle University, Nikolaos Petridis.

Selected papers will be published in special issues of the International Journal of Decision Support Systems, International Journal of Sustainable Agricultural Management and Informatics and Annals of Operations Research, as well as in an edited volume that will be published by Springer in its book series Springer Proceedings in Business and Economics. 🌐



Workshop on Engineering and Mathematics Highlights OR Role

Gerhard-Wilhelm Weber <gweber@metu.edu.tr>

The Mathematical Methods in Engineering (MME 2017) Workshop

held from April 27-29, 2017 (<http://mme2017.cankaya.edu.tr/>), succeeded in bringing together scientists and engineers to exchange ideas on recent developments in Mathematical Methods in Engineering. In the area of OR, state-of-the-art research and latest achievements included such main topics as *Emergent Mathematics-Supported Data Mining and Prediction Tools, Dynamics of Complex Systems, Fuzzy Sets and Systems, Image and Signal Analysis, Planning and Scheduling Modelling, Stochastic Hybrid Systems and Stochastic Optimal Control, and Vibration and Control.*

About 200 participants and 100 contributed papers came from all over the world, e.g., from North and East America, India, Europe, the Far East, and the Middle East. The conference took place at the campus of Cankaya University in Ankara, Turkey. Celebrating its 20th anniversary, the University served as the main scientific host institution.

The **Plenary Speakers** were Albert C.J. Luo (Southern Illinois University Edwardsville, USA), J.A. Tenreiro Machado (Institute of Engineering, Polytechnic of Porto, Portugal) and Yangjian Cai (School of Physical Science and Technology, Soochow University, China). **Invited Speakers** were: Dumitru Baleanu (Cankaya University, Turkey), Fethi Bin Muhammad



Belgacem (PAAET, Kuwait), Janusz Brzdek (Pedagogical University, Poland), Dragan Djordjevic (University of Niš, Serbia), Erdal Karapinar (Atılım University, Turkey), Giuseppe Marino (Università della Calabria, Italy), Raoul Nigmatullin (Kazan University, Russia), Carla Pinto (Polytechnic of Porto, Portugal), Shahram Rezapour (Azerbaijan Shahid Madani University, Iran), Abdon Atangana (University of the Free State, South Africa), Hossein Jafari (University of Mazandaran, Iran), and Grzegorz Litak (Lublin University of Technology, Poland). A member of the International Scientific Committee, G.W.Weber was stream co-organizer and coauthored six presentations in the areas of Analytics, Finance, Electricity Markets, Economics, Computational Biology, Bioinformatics and Medicine.

MME 2017 served to bring to the fore the prominent role that *Operational Research* plays in the world of engineering and mathematics in reaching sustainable solutions for a better tomorrow. 🌐

Scenic Mazandaran Hosts Annual Iranian OR Event

Nezam Mahdavi-Amiri <nezamm@sharif.edu>



A scenic city at the shores of the Caspian Sea played host to the 10th International Conference of Iranian Operations Research Society on May 3-5, 2017 at the University of Mazandaran, Babolsar, in the province of Mazandaran, Iran. Held every spring, this year's event was organized jointly by IORS, University of Mazandaran, and International Center for Optimization and Decision Making.

The Conference had about 400 participants including 18 international guests and participants from Australia, Canada, China, Czech Republic, Germany, Italy, Netherlands, Poland, Slovakia, Sweden and the USA. Noted plenary speakers were Adil Bagirov (Australia), Guenter Baerwolf (Germany), Oleg Burdakov and Peter Lohmander (Sweden), Kees Roos (Netherlands), and Alexandra Siposova (Slovakia). Out of 640 submitted papers, 323 were accepted for presentation - with 184 as oral presentations and the rest as posters. Selected papers will be published in special issues of Iranian Journal of Operations Research (IJOR) and Iranian Journal

of Management Studies (IJMS), both indexed by ISC.

A number of excursions included a visit to the world's largest Caviar Breeding Center and the picturesque Tele Cabin of Namak Abrood by the Caspian Sea. Apart from the exhibition of books as well as of traditional Iranian Handcrafts, a demonstration of traditional Iranian sport ceremonies and an evening concert of Mazandaran's Folkloric Music were arranged for the participants.

The IORS Annual General Assembly was held on the second day of the event, where an OR Journal in Persian to be initiated by IORS to complement IJOR was approved. During the closing ceremonies, Nezam Mahdavi-Amiri, IORS President and Editor-in-Chief of IJOR, and Reza Tavakkoli-Moghaddam, Managing Editor of IJOR, were honored for their contributions to OR in Iran.

The 2018 conference will be held in Kermanshah at Razi University of Kermanshah in West of Iran. 🌐

IFORS

NEWS

Editor in Chief: Elise del Rosario

| Regional Correspondents | |
|-------------------------|------------------------------------|
| ALIO | Annibal Parracho |
| APORS | Degang Liu |
| EURO | Gerhard Wilhelm Weber, Sarah Fores |
| NORAM | Grace Lin, Melissa Moore |

| Section Editors | |
|--------------------|---------------------------|
| OR Impact | Sue Merchant/John Ranyard |
| OR for Development | Arabinda Tripathy |
| Book Review | Hans Iltmann |

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| Australia | Erhan Kozan |
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| Hungary | József Temesi |
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| Iran | Nezam Mahdavi-Amiri |
| Ireland | Cathal Brugha |
| Israel | Michal Tzur |
| Japan | Jun-ya Gotoh |
| Korea | Chang Won Lee |
| Lithuania | Leonidas Sakalauskas |
| Malaysia | Ilias Mamat |
| Mexico | Yasmin Rios |
| Nepal | Sunity Shrestha Hada |
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| Singapore | Huang Boray |
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| South Africa | Martin Kidd |
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| USA | Jim Cochran |
| Uruguay | María E. Urquhart |

Community OR Helps Unleash Third Sector Potential in New Zealand

Robyn Moore, Programme Consultant / Community Operations Researcher <robyn@J.co.nz>

Background. Volunteering New Zealand (VNZ) supports the development of managers of 'third sector' (charitable) organisations. Following extensive research, it produced in 2012 a set of *Best Practice Guidelines for Volunteer-Involving Organisations*. In 2014, VNZ commissioned an in-depth review of the initial guidelines to overcome issues raised during use, and to explore ways of embedding world-leading management practices.

This article describes the review of the Guidelines using Community Operational Research (COR), i.e. OR involving the community. The activity resulted in a comprehensive Toolkit to assess and improve organisational performance.

Approach. Community OR is gaining prominence in support of the third sector, as its 'soft' OR methods are especially good at tackling problems involving multiple goals and differing perspectives of stakeholders (Midgley, G. and Ochoa-Arias, A. 2004). The study used a variety of COR methods that called for working with organisational leaders (Chief Executives, General Managers and Boards), management teams and volunteers to find practical solutions. Goal and Current Reality mapping adapted from the Theory of Constraints (see Dettmer 2007) was used to test and refine goal statements and associated necessary conditions. The resulting set of benchmarking standards allowed users of the Guidelines to map and then critically reflect on their organisation's ideal situation, depicted as goals and objectives, and compare this with their actual reality. A set of actions emerged to address the gaps between 'what is' and 'what should be'.

Workshops and seminars were held across the country to ensure the broadest representation of the sector. A participant (stakeholder) selection matrix was used to identify 12 'champion' organisations categorised according to size, type of service delivery, rural or urban location etc. Wishing to contribute to further research, some organisations that were part of an earlier pilot volunteered to be a part of the 12 while others were recruited through VNZ's membership and networks.

Participant categories included: small, large, sport, youth, rural, urban, kaupapa Māori (integrating Māori philosophy, principles, language and identity), health, education, religion. The involvement of Volunteering Centres located in various towns and cities and which recruit volunteers for member organisations ensured a wide geographic and ethnographic reach. A workshop during their national conference had 60 Volunteer Centre staff participating in the research.

For the duration of the program, progress in using the tools was monitored during monthly contacts with the champions. Survey responses and observations from each of the workshop and seminar participants informed the research. Changes were made and analysed in consultation with the champions, some of whom were present in multiple workshops. The exercise served to verify/ challenge thinking and practice, specially where members of the same organisation in different locations shared different views. Implications arising from differences were mapped and integrated into the findings.

Workshop Method. A workshop consisted of 20-24 people, each with a set of Guidelines. Participants completed action plans for implementation within their organisations and in the process helped develop enhancements to the Guidelines.



▲ Author (3rd from right) shown facilitating a group discussion.

With early seminars revealing critical issues and suggested changes for creating a high performing third sector, a problem structuring approach, based on the Theory of Constraints (Dettmer 2007) was used. A shared goal for the sector was agreed, along with two or three critical success factors. The current reality was also scrutinised (using mapping techniques adapted from Dettmer 2007), where the gaps between 'what is' and 'what should be' was discussed to inform later analysis.

Versions of the Guidelines were reviewed in subsequent seminars and workshops, resulting in incremental changes over a year. During workshops, participants worked through questions about their organisation and practice, either individually or in groups. Each table of 5 to 6 people with a host worked on one 'focus' statement (based on category 1, 2, 3 or 4 from the Guidelines). Completing all four categories would provide participants with a view of their organisation and its people, identifying: opportunities for change; barriers to change; how to make change happen; actions for continuous improvement; and ways to improve productivity and support innovation.

For example, the Goal Statement *Volunteers are seen as a central part of the organisation* was printed on an A3 table card for the group to discuss using support questions below:

- How do best practice organisations do that? eg. by making sure the contribution made by volunteers is reflected in the organisation's strategic plan and goals.
- What are we doing to meet the objective and How does our organisation rate on meeting this condition? Rating was on a 1 to-5 scale where 1 is for no evidence and 5, always evident.

Other 'focus' statements were:

- *The whole organisation works to involve and recognise volunteers.*
- *The whole organisation understands the need for a supported and resourced manager.*
- *People with responsibility for volunteers have sufficient resources to effectively do their job.*

The conditions for achieving the goal, appear on smaller A5 cards that the table host would draw from a small pile of conditions to discuss. The review process was informed by the A5 cards and the resulting table notes, as well as by individual participant surveys and discussion.

"The third sector is the glue which holds much of New Zealand society together and allows it to function and prosper"

- The NZ Cause Report 2017

| In Best Practice Organisations | How do Best Practice Organisations do that? | In our organisation, we currently do the following things towards these goals... | We rate our progress against these goals... 1 = poor 5 = excellent | In our organisation, we will work on doing the following things towards these goals... |
|---|---|--|--|---|
| 1. Volunteers are seen as a central part of the organisation. It is recognised that without their contribution, the organisation would not achieve its goals. | 1.1 Making sure people with responsibility for volunteers have a voice at all levels of the organisation. | Volunteer staff are represented on the Board. Manager has regular meetings with volunteers and Front Office Volunteer Coordinator. | 4 | Finding a way for the staff rep to report back to the volunteer staff about board business |
| | 1.2 Aiming for a culture of appreciation by acknowledging the ways volunteer involvement helps our organisation achieve its goals. We do this by talking about our volunteers and sharing their inspiring stories via official reporting channels, via social media, official website etc; via annual events and celebrations | Regular volunteer meetings with Front Office Staff. Usually once per month Manager's report to the board monthly. Funding reports. | 4 | Finding a way to include the Annual Report achievements from volunteers in our organization It would also be good to measure the volunteering achievements in the community Make use of national volunteering week (June) and other events to celebrate our people and achievements |
| | 1.3 Making sure the contribution made by volunteers is reflected in the organisation's strategic plan and goals (the what and the why) | This is currently not done. | 1 | Incorporate this at our next planning day. Clearly define how we engage volunteers in of our programmes. Ensure we give volunteers scope for assuming responsibility |

▲ Figure 1: A sample of actual responses gathered.

Blank cards and Post-its were used for participants to add new conditions, and to suggest changes to existing ones. After 15-20 minutes, participants would move to a new table and the next focus statement. The process repeated until all four categories were completed, with time for group discussion.

Participants were encouraged to take back to their organisations the Guidelines and action plan they drew up. An excerpt from the Exemplar created using actual responses from participants is shown in Figure 1.

The emergent model for collaborative thinking and reflection was tested in workshops and seminars attended by 136 participants around New Zealand, and at a number of events in the months following the programme's end.

The final Toolkit emerged as a result of analysing its practical application by the champion organisations and other participants.

Findings and Outcomes. The programme proved a powerful agent of change for a number of participant organisations. Governance was impacted to a lesser extent, and there were notable areas of conflict between management and the executive. A coaching programme was developed to help pre-empt and deal with conflict that arise from in-depth critical reflection and organisational change.

A national conference on the theme of Best Practice was held shortly after the research findings were reported, officially introducing the Toolkit to the sector. 'Train the trainer' sessions were developed for Volunteer Centres to empower staff in delivering Best Practice workshops and coaching member organisations. Events employing the Guidelines have since been delivered by Volunteer Centres and VNZ, as well as within champion organisations, peer to peer.

Compared to the initial set of Guidelines, this research led to significant areas of change, eg. some organisations set goals to explicitly represent the diversity of their target population, including at governance level. Communication received a strong focus, largely absent from the earlier Guidelines.

The workshop showed the need for Measurement focus. In light of the new annual reporting standards set by the NZ government in 2015, accurate monitoring and reporting of volunteer effort and organisational results become an important component in securing resources.


"The VNZ Best Practice Guidelines have been a valuable tool in reinforcing and building on foundations we had set for working effectively with our vast volunteer workforce of over 9000 people."

- Rachel Butler, Volunteer Projects Adviser, St John NZ

Impact. The updated Best Practice Guidelines and the new Toolkit (www.volunteeringnz.org.nz/best-practice/), enriched by the involvement of a wide cross section of third sector participants, have been greatly appreciated by users, and expected to lead to improved sector performance. To complement the current Toolkit, an interactive online tool, InvolveMe, has subsequently been developed (www.involve.me.nz), aimed at making an impact at the strategic level. Based on the Best Practice Guidelines, it generates a custom report for users.

Acknowledgement. The programme was funded by Callaghan Innovation (Ministry of Business Innovation and Employment) for Volunteering New Zealand supported by VNZ CEO VanisaDhiru as well as the 12 champions who made this a truly collaborative community of practice.

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Colombian Community Program Clinches IFORS Prize

Mikael Rönnqvist <mikael.ronnqvist@gmc.ulaval.ca>

The IFORS Prize for OR in Development was awarded to *A Robust DEA-Centric Location Based Decision Support System for Expanding Recreovia Hubs in Bogota* during the IFORS 2017 banquet held on July 20 at the Quebec City Convention Center, right after all the finalists were called on stage to receive their certificates of distinction.

This was the culmination of a year and a half long effort to attract and sift through OR applications in the area of development. Awarded only every three years, the Prize was first given in 1987 and has since emphasized the impact of OR in helping decision makers improve their performance of work related to development.

Of the 12 paper submissions, five were selected for presentation but only four were actually presented on Monday, July 17. A packed audience listened to a set of most interesting contributions from four countries. Each team was permitted 20 minutes to present its work after which the jury members and audience were invited to ask questions for a further 10 minutes.



▲ Finalist representatives J. de Figueiredo (Brazil), A. Medaglia (Colombia), I. Lepetit (Cameroon) and Guo Tian-De (China) receive their Certificates of Recognition.

not available to present owing to the earlier-than-expected delivery of a child. Full abstracts of the finalist papers are available at <http://ifors.org/june-2017-issue/> pages 7-9.



▲ Team from Colombia wins the Prize and receives the Cash prize from Prize Chair M. Rönnqvist.

In summary, Team China presented a system for fingerprint recognition that has been used in several Chinese cities; Team Cameroon presented a tool used in comparative performance measurement of micro-financing institutions implemented in a countrywide network; Team Brazil presented a decision support system to obtain the most of pedagogical resources in a schooling system implemented in one municipality; Team Colombia presented a decision support system to locate recreational hubs in Bogota; and Team Egypt, with paper on the minimisation of transport costs in cold supply chain networks, was unfortunately

Consisting of 10 members from Asia, South America, Europe and North America, the jury evaluated the presentations on problem definition, creativity and appropriateness of approach, MS/OR/ Analytics content, stress on developmental issues, innovative methodology, paper organization and structure, participation of local researchers, quality of written paper, handling of questions and, most importantly, on the impact of the study. After a long deliberation, a decision was reached to award the runner up prize of US\$2000 to team China's entry, *Optimization Models and Algorithms for Fingerprint Recognition*. The IFORS Prize which carried a cash amount of US\$4000 was awarded to team Colombia. The jury was impressed by all presentations but the winner stood out because of its effective implementation of a number of sophisticated OR methods and models, its provision of a decision tool which could be used by the client, and the impact of the study on the improvement in social life in Bogota. By locating recreation hubs in the best possible areas to promote healthy living in public spaces, the application is seen as a tool that helps reduce inequalities, promote safe, resilient and sustainable cities and eventually promote just, peaceful and inclusive societies.

In the spirit of continuous improvement, IFORS 2017 Prize Chair Mikael Rönnqvist was handed the task of suggesting further improvements on the Competition mechanics, which will be held during the next Triennial, IFORS2020. 🌐

ICORD Showcases Impact of OR on Development

Sadia Samar Ali <sadiasamarali@gmail.com> **Michael Beeler** <beeler@mit.edu>

The International Conference on Operational Research for Development (ICORD) was held at the Université Laval, Québec, Canada just prior to the IFORS Triennial Meeting from June 13 to 14. The conference provided a highly focused and collaborative forum for scholars and practitioners from all continents to exchange ideas, techniques, and insights on a wide range of subjects at the intersection of OR and Development.

The conference format and intimate size allowed for a high degree of exposure and feedback for each submitted paper. In place of parallel sessions, each work was presented to the entire conference delegation, and received thoughtful feedback from assigned reviewers.

The majority of presentations dealt with successful applied

projects implemented by governments, NGOs, or industry partners around the world, with primary emphasis on Latin America, Africa, South Asia and Southeast Asia. The projects touched on topics such as urban transportation, humanitarian logistics, microfinance, urban planning, ambulance location, and sustainability metrics.

A number of recurring themes and challenges emerged that spanned geographies, application areas, and methodologies. How should OR practitioners engage institutions and decision-makers with technical limitations or who are unfamiliar with the systematic modeling and problem-solving employed in the field? How can OR models capture and bring to the surface the tradeoffs between the goals and needs of different stakeholders? How robust and generalizable are models when implemented in practice or in slightly different contexts? >>



▲ Participants at the closing session of ICORD. On the front row are the organizers: G.W.Weber, E. Del Rosario, Y. Cimon, S. Merchant and L. Buriol.

>> While these questions are perhaps universal to the OR discipline, it was clear that they are especially relevant in the context of development. The presentations provided excellent expositions on how attendees have navigated these questions, in some cases with tremendous success.

A case in point is the invited speech *Applied OR to Support Humanitarian Operations in Developing Countries* by Marie-Ève Rancourt of HEC Montreal. She walked attendees through a field-based logistics project with the UN Humanitarian Response Depot in East Africa. Different research projects related to logistics decision planning for mitigating famines and diseases brought about by seasonal draughts, weather patterns and armed conflicts were presented as follows: relief item prepositioning (Uganda), food aid distribution (Kenya) and community healthcare services (Liberia). The project recommendations, rooted on OR tools such as optimization, simulation, mathematical programming and statistical analysis, were successfully implemented by the UNHRD, resulting in quicker delivery times and cumulative savings in millions of dollars.

In humanitarian logistics, two papers on *Drone Fleet Optimization Model for Distribution of Relief Items Under Emergency Conditions in Developing Countries* (Austria) and *Bi-Objective Optimization for Post-Disaster Humanitarian Logistics* (Chile) were presented.

On the other hand, the keynote address of Carlos Gonzalez-Calderon on *The Impacts of Congestion on Supply Chains: Recent Results from an Inter-American Development Bank Initiative* showed the huge economic impact of congestion on urban freight logistics costs. The methodology used for the measurement, designed for applicability, comparability, practicality, and robustness, were piloted in the three Latin American cities of Barranquilla, Colombia, Santiago and Sao Paulo for future implementation in other places.

Understandably, contributions from CIRRELT covered logistics areas important for developing countries such as: *Traffic And City: How To Plan For Better Distribution*; *Using OR Tools To Plan A Fair Distribution Network*; and *Distribution and Development Issues in City Logistics*. From Brazil, an exhaustive presentation on applications in freight distribution and emergency medical services was discussed.



▲ Each presentation benefited from a feedback by a fellow-participant reviewer. Here, G. Dash reacts to the paper by C. Fries.

Environmental issues were also tackled in three papers, namely *Optimising Environmental Water Release Decisions* (Australia); *Snow Cover Mapping from Satellite Data by Artificial Neural Networks* (Turkey); and *An Assessment of Green Practices in the Indian Manufacturing Sector* (India).

Performance Assessment and Definition of Improvement Paths towards the Double-Bottom Line of Microfinance Institutions: An Application to the Mc² Network in Cameroon discussed the use of Data Envelopment Analysis (DEA) to improve the performance of village banks involved in microfinance activities. *A Goal Programming Approach to the Optimal Resettlement of Informal Settler Families (ISF)* described the development and implementation of a goal programming Excel-based tool for use by implementers of resettlement programs in the Philippines.

A host of other applications - among them, in the health and education areas - were presented. The conference was certainly an excellent forum for networking and socializing. Most attendees were on a first-name basis by the end of the first day. The organizing committee arranged an excellent walking tour of Quebec City's historic district and an impressive final dinner.

The community attending this wonderful event expresses its gratitude to IFORS, CIRRELT at Université Laval, the EURO Working Group on OR for Development, and, especially to the ICORD 2017 Organizing Committee for their tremendous work in convening a group of OR researchers and practitioners who are having an exciting impact on development through the OR profession. 🌐



▲ Invited Speaker M.Eve Rancourt inspires participants with an account of her work in Humanitarian Logistics.



CALL FOR APPLICATIONS: IFORS-ELAVIO SCHOLAR **ELAVIO 2018 - Escuela Latinoamericana de Verano en Investigación Operativa** **(Operations Research Summer School for Young Latin American Scholars)** **March 05th to March 9th 2018, Marbella, Chile**

ELAVIO XXII will be held in 2017 in Chile from March 5th to March 9th, in Marbella located 170 km (106 mi) north of Santiago on the Pacific coast. The purpose of ELAVIO is to stimulate new collaborations and encourage the involvement of young people in OR by bringing them up to date on research topics through short courses and plenary conferences.

The Scholarship

IFORS is offering one scholarship for a participant to this event. IFORS will cover the participant's airfare from his/her country (subject to a maximum limit) while ELAVIO organizers will provide local transportation, meals and accommodation during the dates of the school.

IFORS requires the applicant:

- to have done work in the fields of interest of the School;
- to be at an early stage of her/his career;
- to present an unpublished work in the poster session; and
- to be highly recommended by the advisor/supervisor of her/his work.

Candidates satisfying the requirements are encouraged to submit their curriculum vitae, a one-page (max) extended abstract of the work to be presented in a poster session, and a recommendation letter by the advisor.

The above requirements must be forwarded by November 15, 2017 to:

- IFORS Vice President for ALIO, Prof. Guillermo Durán, gduaran@dm.uba.ar
- ALIO President and ELAVIO Chair. Prof. Jaime Miranda, jmirandap@fen.uchile.cl

The selected applicant will be notified by November 30th, 2017. Candidates from developing countries will have an advantage in the selection.

The official languages of the school are English, Spanish, and Portuguese. Participants can make their posters in any of these languages. Short courses and lectures will be given in any of the official languages with English slides. 🌐

Call for Applications: IFORS-EURO Scholar **EURO Winter Institute in Frankfurt (Oder), Germany, March 5-16, 2018**

The office of the IFORS Vice President for EURO is pleased to announce the sponsorship of a participant to join the 2018 EURO Winter Institute on "Lot Sizing and Related Topics" to be held at the European University Viadrina, Frankfurt(Oder), Germany, March 5 -16, 2018.

The Euro Summer and Winter Institutes (ESWI) are organized to encourage good social and working relationships among promising young OR scientists.

The selected IFORS-EURO scholar will receive joint sponsorship from IFORS and EURO. IFORS will sponsor the travel costs of the delegate coming from non-EURO member society. EURO will shoulder expenses related to the registration, accommodation, meals, and social activities to the IFORS fellow. Applicants from developing countries will be given preferential treatment for the slot. Those who have joined EURO Institutes in the past need not apply.

The ESIs and EWIs aim is to facilitate the establishment of a network of promising early stage researchers (with less than 10 years experience in OR), thereby encouraging future collaborative work. EWI 2018 seeks to involve about 20 participants. While featuring lectures by invited speakers, the participants are expected to present and discuss their papers. A special issue of an international journal will be produced, based on the papers presented during the EWI. The varied social program prepared for the participants is one of the unique features that enhance the learning activities. The applications should be sent by email to

Professor Jacek Blazewicz
IFORS Vice President for EURO
Poznan University of Technology
Institute of Computing Science
60-965 Poznan, Poland
Tel: +48-61-8790 790
Fax: +48-61-8771 525
Email: jblazewicz@cs.put.poznan.pl

Applications should include: (1) a complete CV with a list of papers, (2) a paper proposal (complete text or 3-5 pages long extended abstract) and (3) a letter of recommendation from one referee (preferably the thesis advisor or head of department).

Important dates

Deadline for applications: November 30, 2017
Notification of acceptance: December 15, 2017
EWI: March 5 -16, 2018

About EWI 2018

Theme. Main topics of interest are OR methods, mathematical models and computation algorithms related to lot sizing. The planned tutorials will cover the following topics: (Historic) overview on lot sizing; Exact solution approaches; Heuristic solution methods; Stochastic lot sizing problems; Lot sizing and scheduling / routing ; Applications of lot sizing; Stochastic Optimization; Metaheuristics.

Location. The Institute will be held at the university campus of the European University Viadrina in Frankfurt (Oder), Germany. The university is located directly at the border of Germany and Poland and can be reached easily by a 70 minutes train ride from Berlin.

Background. EURO Summer and Winter Institutes (ESWI, <https://www.euro-online.org/web/pages/458/euro-summerwinter-institutes-eswi>) provide an excellent forum for PhD students and early career researchers to discuss their research at length with experts in the field, as well as to form links with other early stage researchers.

Format. Around twenty early stage researchers (PhD students and/or those who have less than two years research experience post PhD) from EURO member societies will be invited to participate at the EWI. Each participant is expected to present an unpublished work and discuss it with colleagues and invited senior experts in the field. The EWI will also present a series of lectures by the invited senior experts. After the EWI, the papers can be submitted to a special issue of an OR publication to be announced later.

With the main objective of providing a limited number of carefully selected representatives the unique opportunity of establishing a personal network, addressing an international audience, and eventually creating new research groups around the chosen topic, the ESWI accepts only those who have not participated in any ESWI in the past. 🌐

OR Society in Focus

ASOCIO: Fresh OR Beginnings for Colombia

Jairo R. Montoya-Torres <jrmontoy@gmail.com> **ASOCIO president**

Juan G. Villegas <juan.villegas@udea.edu.co> **ASOCIO past president**



Participants of the Second national OR conference (ASOCIO 2017) in Medellín

Although the newest member society of IFORS, the Colombian OR Society has had a long history that dates back to the sixties. In 1966, the Colombian Association of Computing and Operational Research-ACCIO was founded, spurred on by the creation of the first Informatics Engineering undergraduate programs in several Colombian universities. A second effort was made in 2000 when the Colombian Society of Operational Research-SOCIO was founded. However, three national conferences and one CLAIO conference (XIV Latin-Iberoamerican Conference on Operations Research - CLAIO 2008) later, SOCIO became inactive.

sponsored its first national OR conference organized by the International School of Economics and Management Sciences at Universidad de La Sabana (Chía-Cundinamarca). ASOCIO's biennial national conference was again held from August 22-23, 2017 at Medellín organized by Universidad EAFIT (www.eafit.edu.co/asocio2017). This conference was graced by IFORS president Michael Trick who gave the closing plenary session. In 2019, the national conference will take place in Bucaramanga under the auspices of the Universidad Industrial de Santander (UIS).



▲ Former and current ASOCIO Executive Board, during the Medellín national conference with IFORS President Trick: (l to r): Juan José Bravo, Juan Pablo Fernández, Carlos Díaz, Jorge E. Mendoza, Javier Arias, Michael Trick, Jairo R. Montoya-Torres (ASOCIO president), Juan Carlos Rivera, Mario Cesar Velez-Gallego, Juan G. Villegas (ASOCIO past president).

The Association of Latin-Iberoamerican Operational Research Societies (ALIO), through its President at the time, Luciana Salete Buriol, encouraged the organization to be active again. In October 2014, a group of 40 members founded the ASOCIACIÓN Colombiana de Investigación Operativa (ASOCIO). The foundation assembly included several colleagues who frequently met abroad when attending international conferences like CLAIO, INFORMS or IFORS. Currently, ASOCIO has 86 individual and 5 collective members (universities).

Several activities aimed at uniting the growing OR community in the country were put in place. In July 2015, ASOCIO

Even as it received official recognition as the 51st member society of IFORS only during the IFORS 2017 conference in Québec, Canada, ASOCIO is grateful for the support that has been extended by IFORS before then. IFORS provided the key assistance for ASOCIO to carry out the XX Latin American Summer School of Operational Research-ELAVIO 2016 in Cali (<http://elavio2016.univalle.edu.co/>). Following this ELAVIO success, ASOCIO organized a local summer doctoral school held at the School of Management at Universidad de los Andes in Bogotá this year. This doctoral school was co-sponsored with the Latin American and Caribbean chapter of POMS (Production and Operations Management Society), and was part of the official agenda of the *Année France-Colombie*. This activity has been scheduled every other year, alternating with the National Conference.

In addition to the national biennial conference and the summer doctoral school, ASOCIO aims to promote OR in the country by co-organizing or giving scientific support to international OR-related events held in Colombia. As of this writing, ASOCIO has committed to support three international events: the International Conference on Industrial Engineering and Operations Management (IEOM 2017) organized by Universidad del Rosario and to be held in Bogotá in October 2017 (<http://ieomsociety.org/bogota2017/>), the International Conference on Production Research (ICPR 2018) Americas Region to be held at Universidad de los Andes School of Management, in July 2018 (<https://icpramericas2018.wixsite.com/icpr>), and the Metaheuristic International Conference (MIC 2019) to be held in Cartagena in 2019 that is co-organized by the Departments of Industrial Engineering of the Universidad de los Andes and the Universidad de Antioquia. Interested readers are welcome to know more about ASOCIO by visiting <http://asociocolombia.wixsite.com/asocio>.

The JCR 2016 Impact Factor of ITOR was released June 14 of this year, showing an increase from 1.255 to 1.745, its biggest jump in a single year. (Impact factor is a measure of the frequency with which the “average article” in a journal has been cited in the two years following its publication.) With this interview piece, IFORS News (IN) introduces readers to the person behind this important development, ITOR editor for the past ten years, Celso Carneiro Ribeiro (CR).

IN: How did you get involved with ITOR?

CR: I was the Editor-in-Chief of *Investigacion Operativa*, the journal formerly published by ALIO. In 2006, a search committee was formed to look for the ITOR general editor. My colleagues, the board of ALIO, along with its national societies supported my bid and by 2007, I was appointed the General Editor of ITOR.

IN: What challenges did you face at the start of this assignment?

CR: There were two main related challenges. The first one was the very small number of new submissions and accepted papers, a definite threat to the survival of the journal. The second was that ITOR was not indexed by ISI, making it hard to encourage authors to submit their best work to a non-indexed journal. Therefore, we had to focus on getting good submissions and working towards ISI Indexation.

IN: ITOR is now a long way from where it started. What steps did you take and what factors contributed to achieve this?

CR: My first priority was to revamp the Editorial Board, making sure there was a mix of top senior researchers and promising motivated young ones. We started with an Editorial Board of 25 Associate Editors, which has since grown to 61, representing 23 countries. In the past ten years, new members of the Board continued to enrich the lineup. Editors meet once or twice a year, ensuring harmony, homogeneity and participation from everyone. The Associate Editors not only submit papers, but also act as Guest Editors of several thematic Special Issues. These issues were instrumental in attracting many very good contributions. Certainly, the Editorial Board is ITOR's main asset.



Secondly, moving very quickly in 2008 to the electronic editorial office powered by Manuscript Central greatly contributed to professionalizing the journal through an effective refereeing procedure and a reduced refereeing time.

These were all accomplished through the full support of the IFORS Administrative Committee. After ITOR was indexed by ISI in 2010/2011, research funding agencies of several countries updated their evaluation tables which moved ITOR upwards. This resulted in an increase in the number of good submissions. Of course, this is a virtuous cycle of good submissions leading to an increased impact factor, which begets more good submissions.

IN: What goal have you set for ITOR?

CR: The 2016 Journal Citation Reports ranks ITOR in the 30th position over 83 journals in Operations Research and Management Science. While considering that this is excellent for a journal that was indexed only in 2011, we want to keep moving towards the top of the ranking. Our most ambitious goal for the next three or four years would be to move one tier upwards in any level-based ranking system used by universities or funding agencies.



▲ ITOR Editorial Board meets for lunch during IFORS2017 in Quebec.

IN: You've had an interesting public sector service in Brazil. Does it relate in any way to what you do now?

CR: In Brazil, as in most of the developing world, most public-sector decisions are political and lack a scientific basis because protecting private interests and powerful people come first. Operations Research is a fundamental discipline that could help this decision-making process. Its dissemination to the developing world is an IFORS mission. I would like to think that ITOR plays a major role in propagating scientific thinking that can help development and the developing world. 🌐

Society Administration and Governance

Pillars of Association Success

Octavio Peralta <obp@adfiap.org>

Editor's Note: Since IFORS is an Association of Associations, IFORS News will feature articles about association governance and management. In this issue, we feature an excerpt from the Business Mirror column (<http://www.businessmirror.com.ph/association-success-factors/>) of Octavio "Bobby" Peralta who is concurrently the secretary-general of the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP) and the CEO and founder of the Philippine Council of Associations and Association Executives (PCAAE).

Nikki Walker, vice president for the global association management and consulting services of the Geneva-based MCI Group outlines five key success factors for associations:

Value—An association's value proposition to its members is a critical factor to its relevance and sustainability. It needs to be able to answer the members' perennial question of "What's in it for me?" Aside from this, the association's value must be needs-driven and must translate into a member's return on investment.

Content—More and more, members join because of an association's unique and robust body of knowledge of the field or industry it represents. This includes publications and journals, web site and other online resources, such as e-community for knowledge exchange. Associations, however, need to be an "able curator" of worthwhile content, in contrast to being simply a "content

disseminator" of what is available elsewhere.

Products and Services—Typically for associations, this covers education and continuing professional-development programs, conferences, certification and qualification standards, accreditation, online courses and other knowledge exchanges.

The key factors here are uniqueness, practicability and reliability of the offerings.

Influence—This connotes advocacy work and dialogue with government. Among others, this also includes promoting the profession or industry through creation of codes, guidelines, standards and best practices. A strong leadership role and spotless credibility bring about a good image and status in the community.

Collaboration—This involves partnerships and alliances on sharing experiences, co-creation of programs, on and offline working groups, discussion forums, special interest groups, etc. Cooperation among associations and other organizations have been key to many successful programs and activities of late. Nikki purposely left out membership in the list of success factors as this, she said, is already a "given". After all, membership is the "lifeblood of an association". Providing the above components to association members leads to an association's success and sustainability. 🌐

Book Review

A Friendship that Changed Our Minds

Hans W. Ittmann, University of Johannesburg <hittmann01@gmail.com>

A joint biography of Israeli psychologists Kahneman and Tversky, **The Undoing Project** is a comprehensive treatment of the pair's ideas, research and complex relationship.

How this book came about is already an interesting trivia for Operations Researchers! Author Michael Lewis penned *Moneyball*, a book published in 2003. It describes how one of the poorer US baseball teams, *Oaklands Athletics*, started to win in its league by analysing data and using this to improve the way baseball players are valued and baseball strategies are evaluated. They in essence introduced and used analytics to exploit inefficiencies and improve decision making. Many teams and organizations in other industries, copied this approach. However over time, it became clear that there was an overreliance on numbers.

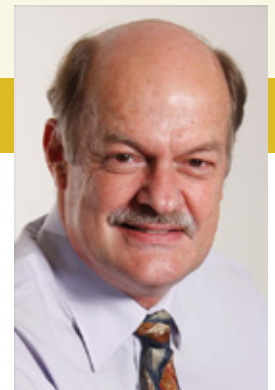
What did not come out in *Moneyball* were the deeper reasons for these inefficiencies, the inner workings of the human mind, how experts may misjudge players and how the human mind works, or fails to work, when forming judgements and making decisions. These aspects had in fact already been described by Kahneman and Tversky!

Even with Kahneman's autobiography published in 2011, Lewis's interest in and treatment of the work and life of both Kahneman and Tversky resulted in something that is still not that well known, a much more intimate view of the relationship. This is a story of how gifted researchers, through their work, were able to show how human beings and decision makers can easily diverge from rationality. In addition, they show how, despite being made aware of the phenomenon, humans with ingrained biases make wrong choices and

wrong decisions again and again. Needless to point out, these are all critical aspects which operations researchers involved in problem solving should consider.

Lewis draws a parallel in the background of the two scientists. Both were grandsons of rabbis from Eastern Europe; both did military service in the Israeli military which affected them deeply and both were involved in the 1973 Yom Kippur War. This was after they had already established themselves as academics at the Hebrew University. It is there that they met in 1969. Tversky was invited by Kahneman to give a talk and by the end Kahneman responded: "*Brilliant talk, but I don't believe a word of it*". That was the start of a collaboration that would upend or 'undo' the understanding of human behaviour.

The author also points out their differences. Tversky was an optimist, for as he put it: "*when you are a pessimist and the bad thing happens, you live it twice. Once when you worry about it, and the second time when it happens*". He was also a night owl. Initially in his career he was a "*mathematical psychologist*", so he used formal models to characterize human behaviour. He was highly organized and disciplined with a spotless office. On the other hand, Kahneman was disorganized and always struggling to find things. He was a constant worrier, a morning person and prone to pessimism. They were different individuals but something special happens when they apply their minds to a problem; their collaboration is impossible to fathom yet perfectly complementary! >>

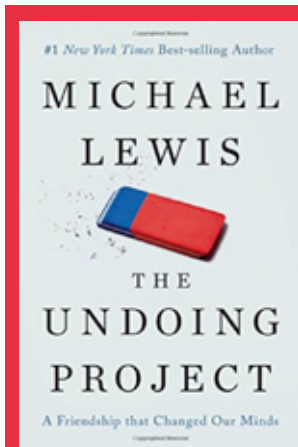


>> A period of extraordinary creativity followed after they met. From 1971 to 1979, they published the work that would lead to Kahneman winning the Nobel Prize in Economics. (If Tversky was still alive there is no doubt he would have won it as well.) Their work was characterised by two distinct themes of judgment and decision making. Judgment is the way we estimate or guess magnitudes and probabilities. Decision-making is about how one chooses, especially when there is uncertainty, which implies almost all the time.

Their first paper looked at how people routinely extrapolate conclusions from statistically insignificant samples: *"Belief in the Law of Small Numbers"* – the faith that if a coin is tossed and came down heads twice in a row, the next toss was more likely to be tails. Their response to this was: *"Even the fairest coin, given the limitations of its memory and moral sense, cannot be as fair as the gambler expects it to be"*.

In their work, they revealed patterns of human irrationality that were not known before: the ways that our minds consistently fool us and the steps we can take, at least some of the time, to avoid being fooled. They used the word *heuristics* to describe the rules of thumb that often lead people astray. They point out rules such as the: *halo effect*, where thinking about one positive attribute of a person, or thing, causes observers to perceive other strengths that aren't really there; *representativeness*, leading to cause and effect perceptions instead of uncertainty or randomness, and; *availability heuristic*, causing both excessive fear and unjustified complacency, even leading governments astray. Other rules and heuristics are described with examples. Kahneman and Tversky brought conversations on cognitive biases and heuristics in decision making to the centre.

Both Tversky and Kahneman ended up at universities in the Americas. Tversky was given tenure at Stanford while Kahneman ended up initially at British Columbia in Vancouver, later going to Berkeley and then to Princeton. Tversky got more of the attention and accolade, of which Kahneman was, to put it mildly, not happy.



The Undoing Project - A Friendship That Changed Our Minds by Michael Lewis, 2016, W.W. Norton & Company, New York, pp.368, ISBN-10: 0393254593, ISBN-13: 978-0393254594, \$20.26.


Since they were at different locations, both started to work with other people, leading to a strain in the relationship. This was unfortunate because Tversky was the brilliant shaper of ideas, not an instigator, and recognised in Kahneman's mind the raw material he needed. On his own, Tversky almost got depressed because he had no source of ideas. Kahneman basically ended the relationship saying, *"I sort of divorced him."* Three days later, Kahneman received a call from Tversky who informed him of his cancer diagnosis with 6 months to live. Tversky died at the young age of 59. In 2002, The Nobel Prize in Economics was awarded to Kahneman for their joint work. The impact of their work has been immense, not only in psychology and economics, but in every other field of social science, as well as medicine, law, business including the airline industry and public policy.

This book review will not be complete without mentioning the one effect this book had on the teaching of Analytics. *'Undoing' the teaching of analytics*² is an article written by well-known educator Peter Bell, IFORS past President. With over 40 years of experience, Peter felt confident that he was teaching analytics in a way that would influence his MBA students to become

more analytic. However having read and being exposed to **The Undoing Project** his *"teaching has been disrupted"*. To quote Bell: *"Reading The Undoing Project provides the strongest case I have seen of the importance of analytical data-driven decision-making, but the book also leads me to believe that we can improve our students' decision-making skills if we can sensitize them to the kinds of basic errors that people make when confronted with the two main factors that make decision-making difficult: uncertainty and complexity"*.

With that, this book review concludes that this book is essential reading for all teachers and practitioners of analytics.

¹ Kahneman, D., 2011, Thinking, Fast and Slow, Penguin Group, London

² Bell, P., 2017, 'Undoing' the teaching of analytics, OR/MS Today, August 2017, p. 22-25. 

Tutorial

The Untapped Potential of Optimization in E-Commerce

Jacek Blazewicz <jacek.blazewicz@cs.put.poznan.pl>
Jedrzej Musial <jedrzej.musial@cs.put.poznan.pl>
Poznan University of Technology, Institute of Computing Science

The Internet started and continued to grow rapidly in the past few decades. Great amount of online information, knowledge, commerce, entertainment and social networking stimulate this expansion. Following the latest reports [1, 2], half of the world population has access to the Internet. The number of users grew 265 times over from 14 million in 1993 to 3,739 million in 2017. The Internet platform opened many possibilities for new activities, one of the most important and popular ones being electronic commerce (e-commerce).

E-commerce has become a part of modern society. It can be defined as a transaction of buying or selling goods or services via the Internet (online). The characteristic part of the trade is that there are no paper documents required to complete the transaction. Goods can both be physical and virtual products. Among the virtual ones are services, programs, music files, and access to some platforms.

One third of European companies use e-commerce in business procurement, logistics, finance and product development. Its further potential and growth can be gleaned from the eMarketer report [3], which forecasts retail e-commerce sales at \$2.352



trillion this year and will reach \$4.058 trillion in 2020, thus tripling in just 5 years the 2015 volume of \$1.545 trillion. In 2020, e-commerce sales is also expected to be 14.6% of general retail sales from 7.4% in 2015.

The continuously growing implementation of technology into daily business and administrative operations makes it necessary to adapt to this trend. E-commerce calls for solutions to such problems as: electronic payments (funds transfer), data collection, data-base system management and design, Internet marketing, Search Engine Optimization, supply chain management, electronic data interchange, storage management, and others.

E-commerce allows selling and buying of goods and services directly via the Internet. Customers use a web browser on various devices such as desktops, laptops, mobile phones, tablets or smart TV. The popularity of Internet shopping owes much to the convenience, cheaper prices and wider range of products that are offered. Customers are also able to compare offers of a wide variety of sellers easily. However, physical products need to be delivered, and herein comes minimization of delivery costs. An approach used to minimize delivery cost is to group purchased products into sets and buy them from a small number of retailers. Making such decisions requires three elements: information on where the required products are; access to price lists in considered shops; and a specialized analytical tool that could find the minimal subset of shops where all the products from the customer's shopping list could be bought at the lowest price. On top of these are additional factors such as delivery time, trust factor, recommendations, payment methods, connected transactions, discounts, and others that could influence the decision.

The problem of managing multiple-item complex shopping lists over several shopping locations, called the Internet Shopping Optimization Problem (ISOP), in its very general form, aims to have all the shopping done at the minimum total expense subject to the satisfaction of all necessary requirements and conditions.

The ISOP problem was defined and proved to be NP-hard [4]. Therefore, achieving results as close to optimum as possible within a reasonable time requires efficient heuristic approaches. During the last few years, ISOP has been extended to include the most common features or situations that are present in real case scenarios. For example, discounts are often offered by stores to attract customers and stimulate higher volume purchases. Enhanced ISOP tackles this situation in [5, 6, 7] and dual discount functions are presented in [8]. Treatment of the discounting function on the shipping cost, a practice common among online stores, can be found in [9] and [10]. Internet shopping on services, especially those available over the cloud, touches on the cloud brokering topic [11]. One of the most important and unexplored fields in both Internet shopping and cloud brokering is how trust impacts shopping decisions [12].



ISOP and cloud brokering problems are just two of the many opportunities in the modern and fast developing e-commerce area that can be addressed by combinatorial optimization, operations research and scheduling. It is hoped that this short article will stimulate further investigations into the unexplored research areas called for by the burgeoning e-commerce age.

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Joseph Funso Akingbade (died May 7, 2017)

Abdulfatai Oyeyemi Lawal <registrar@inforng.org>

An ardent promoter and widely-acclaimed Father of Operational Research in Nigeria, Joseph Funso Akingbade died on May 7, 2017.

He founded the OR Club at the University of Lagos in 1980, in an effort to form the first OR body in Nigeria. This was followed in 1991 with his involvement in forming the Association of Promoters of Innovative Management through Operations Research. In 2006 to 2010, he became the President and Chairman of the Institute for Operations Research of Nigeria (INFORN) which has subsequently been accepted into IFORS membership.

He obtained his BS Chemical Engineering degree from the University of Edinburgh in 1966 followed by PGD in Management Studies, Liverpool College of Technology in 1967, MSc Industrial Mathematics and Statistics, University of Aston, Birmingham in 1969. In 1978, he obtained his PhD in Operational Research from the University of Ulster, Northern Ireland.

He joined the faculty of Business Administration at the University of Lagos and became its Dean. He taught OR and Quantitative Analysis both at the undergraduate and postgraduate levels of the University for over three decades. 🌐

