



## APORS 2022: Real-Time Response to Uncertain Conditions

by Elise del Rosario, Malu de Guzman-U, Iris Martinez



*Onsite participants with online participants shown as tiles in the screen*

Organized under conditions of extreme uncertainty, the conference of the Asia-Pacific grouping within IFORS (APORS 2022) was re-scheduled, re-located, and re-formatted in response to the ever-evolving local and regional regulations and restrictions brought about by the pandemic.

What remained constant were the commitment of the invited plenary speakers to be physically present and share their knowledge with participants who came even when the option of joining the conference virtually was available, as well as the quick response of the organizing committee to the conditions and concerns from all sides. The 13<sup>th</sup> Conference of the Association of Asia Pacific Operations Research Societies (13<sup>th</sup> APORS) was finally held on a hybrid format from November 9 to 12, 2022 at the Richmond Eastwood Hotel in the National Capital Region of the Philippines, in Manila. A total of 120 onsite participants marched to the meeting rooms while 170 online attendees clicked their way into the sessions.

The four-day conference was opened by Commissioner of the Philippine Bureau of Internal Revenue, Lilia Guillermo, who outlined efforts of the government to streamline processes and procedures and to identify where these are most needed. The wide range of topics covered from decision analysis, optimization, artificial intelligence, teaching of OR, and OR for Development that address the theme of *OR: Onwards to Recovery* could be gleaned from the talks of the plenary speakers.

IFORS Distinguished Lecture (IDL) delivered by Ahti Salo, Professor at the Aalto University in Finland drew from his experience as part of the Scientific Panel that advises the Finnish Prime Minister on the Covid response as



*Online participants: IFORS President: Janny Leung at top left*



*IFORS Distinguished Lecturer  
Ahti Salo*

he noted the challenges of model-assisted policy advice. He discussed at length how to deal with uncertainties in strategic decision making.

Keynote speaker Professor of Systems Engineering and OR at the George Mason University Karla Hoffman showed that optimization could still assist real-time decision-making even where solutions must be available almost instantaneously. A multi-awarded researcher who advocates use of OR in practice, she used two examples from the battlefield and the transport sector to show how and why hybrid optimization works.



*Keynote Speaker  
Karla Hoffman*

Plenary speaker James J. Cochran, Professor of Statistics and Associate Dean at the University of Alabama established an international teaching effectiveness colloquium series and has organized these events in around 20 countries. This wealth of experience made him a very engaging speaker on how to convince students that OR/Analytics is interesting, relevant, important, and enjoyable.

Representing a set of processes and methods applied to machine learning algorithms to promote trust and comprehension of the AI-produced results, explainable artificial intelligence (XAI) was the methodology as applied to designing national health care models explained by plenary speaker Nina Kajiji who is a Principal of The NKD Group and an adjunct associate professor in the Computer Science and Statistics Department at the University of Rhode Island. On the other hand, Gordon Dash who is Professor of Finance at the University of Rhode Island presented a novel approach to optimize the behavioral portfolio management model in the presence of investor biases for ESG sustainability, loss aversion, and cognitive dissonance.

The plenary talk of Gerhard-Wilhelm Weber, Professor at Poznan University of Technology, Poland, showed examples of how OR could address development issues through work he did while at the Middle East Technical University in Ankara, Turkey. His theme revolved around the use of OR together with other disciplines to improve living conditions.

The parallel sessions of APORS 2022 brought together 42 papers from all over Asia Pacific and the world. In addition to these was one invited paper, 9 National Contributions, and 7 Youth Forum papers from APORS member countries India, Hong Kong, Nepal, Malaysia, Singapore, South Korea, China, the Philippines, and Iran. To recall, the APORS Youth Forum was started in 2021 to train and recognize early career researchers and give them a chance to present in international fora and for them to get feedback from experienced professionals.

Majority of the papers were written by authors in the academe, representing universities in the Asia Pacific region, Europe (Germany, Hungary, Switzerland, among others), the U.S., and Canada. In addition to academic research, papers from the private sector including research institutions and manufacturing companies were presented. The unique timing of the conference, shortly after the height of the pandemic but still uncertain of what is to come, made papers from healthcare facilities, national and local governments, and the WHO very popular.



*Plenary Speakers: James Cochran, Nina Kajiji, Gordon Dash, and Gerhard-Wilhelm Weber*





*Guests relive the Spanish period in Philippine History at the Fort Santiago*



*Participants learn about the Philippines national hero at the the iconic Rizal Park*



*Plenary Speakers enjoy the Taal Vista in Tagaytay*



*APORS Overall Coordinator Elise del Rosario introduces K. Hoffman*



*IFORS VP and Conference Chair Francis Miranda opens the Conference*

lar. Consistent with the conference theme, these research not just analyzed the impact of the pandemic, but also looked forward to recovery efforts.

All in all, there was an enriching blend of research ranging from the theoretical (such as new problem-solving algorithms and metaheuristics) to the applied (such as analytics of the workplace, epidemiology, and vaccine deployment). All presentations provided a better appreciation of how operations research and analytics together improve systems, and in so doing, improve lives.

Social activities enriched the experience, where participants got to know Manila. The visits to Fort Santiago, Intramuros, Rizal Park, Casa Manila, and the American cemetery gave glimpses of Philippine history under Spain, as well as some events of World War II. The whole-day tour culminated in a welcome dinner hosted by Elise and Bing del Rosario in their home.





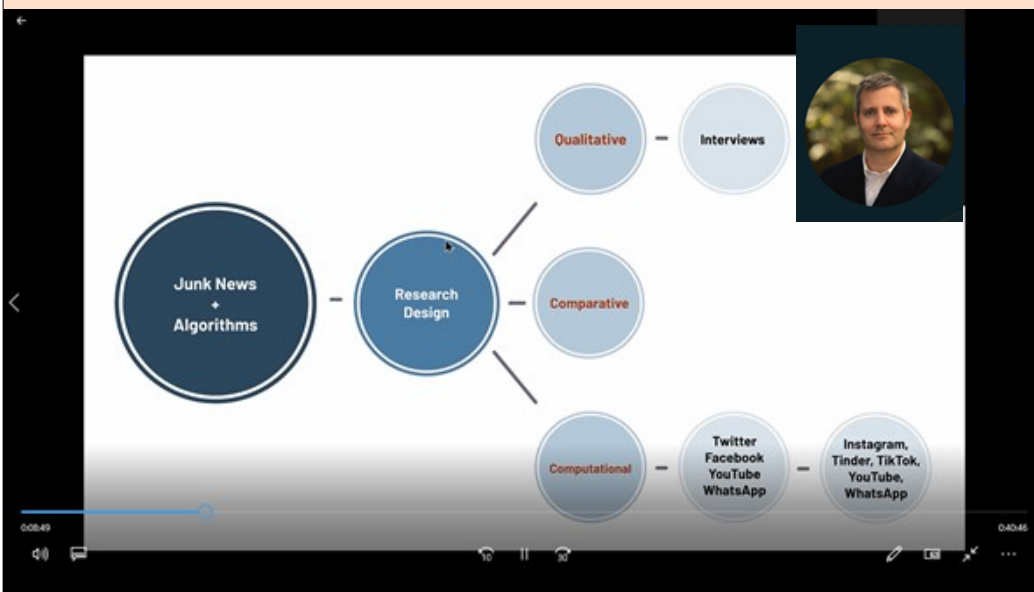
Participants gather after the dinner and cultural show at the SMX Convention Center sponsored by the Tourism Board of the Philippines

The conference banquet on the evening before the last day, sponsored by the Philippine Tourism Board, featured a cultural show that showed dances from Northern to the Southern Philippines. Belting songs out was the operatic singer who gave a flavor of different regional local songs.

Overall, it was a well-rounded experience that highlighted Operations Research and analytics, encouraged interactions among participants, gave a chance for delegates who are still not able to travel to participate, and provided a glimpse of the host country's culture and history. Indeed, real-time adjustments in the conference organization paid off very well. ♦

## October Webinar Tackles A Timely Subject: Political Manipulation through Social Media

The speaker of the last webinar for the year published a book on *How to Save Democracy from Troll Armies, Deceitful Robots, junk News Operations, and Political Operatives*. This captured the interest of the 113 industry practitioners from San Miguel Corporation, Belfor (Asia) PTE LTD, Academe members from Quezon City University, Colegio de San Lorenzo, Holy Angel University, Batangas State University, University of Makati, students from Adamson, UP Baguio, University of Santo Tomas, and Philippine Christian University who participated in the October webinar.



The invited speaker, **Philip Howard**, is a statutory Professor of Internet Studies at the Oxford Internet Institute and a Senior Fellow at Balliol College at the University of Oxford. In the course of his studies on the impact of digital media on political life around the world, he has published other books, such as *Pax Technica: How the Internet of Things May Set us Free or Lock Us Up and Lie Machines*.

The speaker touched on political lies and their production, distribution, and marketing. The speaker referred to this misinformation as computational propaganda and a discussion can be found in his book *Lie Machines*. His book focuses on misinformation in elections. However, since the book's publication, he mentioned that the most complex form of misinformation has been related to COVID-19. The speaker emphasized the importance of understanding both the technical and social aspects of misinformation.

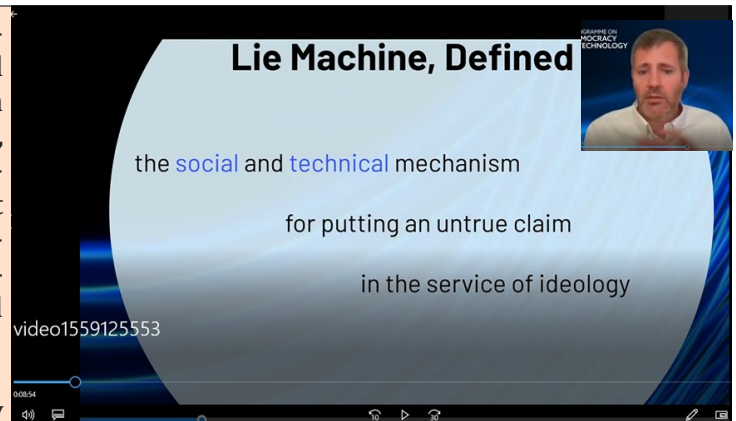
Among the topics discussed was the political economy of fake news and misinformation, focusing on websites that spread misinformation about public health with the finding that technology companies like Google and Facebook provide infrastructure support for these websites even after the content is removed. His study also showed that the majority of fake news about public health were Canada-, rather than US-based. He then looked at Ukraine and the spread of misinformation about Russia's invasion.

Highlighted was the difficulty of tracking and identifying misinformation because of its complex nature and the increasing number of countries with active information operations. The issue of misinformation and its spread is an area that is difficult but important to address. This has provided the impetus for a group of researchers, of which he is a part, working to improve civic engagement using social data science. They focus on countries with experts who understand the political culture and language.

The speaker mentioned that government can play a role in controlling misinformation through financial measures like fines or breaking up companies but does not recommend content regulation through a judge or government minister. The preference is for the platform to define community norms and be responsible for their maintenance.

At the end of the webinar, participants asked thoughtful questions which showed the breadth and depth of the author's research and works in the area.

The recording of the lecture is available at <https://youtu.be/4KMGFtmNkXQ> ♦



## June 2022 Webinar

# An Overview of Cryptocurrency, Blockchain, and Virtual Asset Regulations

Responding to a clamor from members to know more about cryptocurrency, ORSP assembled for its June webinar, three speakers to explain the basics, its place in the current banking system and what the government has put in place to regulate this new currency.

## Bitcoin revolutionizes money

Seashells (cowry)	Gold	Fiat (physical)
<b>Pro's:</b> Easy to recognize & account	<b>Pro's:</b> Supply is more stable Inconvertible	<b>Pro's:</b> No supply shock (print) Supply is controlled by central banks
<b>Con's:</b> Napupulot sa dalampasigan Mahirap ipadala from Luzon to Mindanao (belangin ng banko)	<b>Con's:</b> Gold discovery causes supply shock Mas mahirap ipadala from Luzon to Mindanao	<b>Con's:</b> Supply is controlled by central banks

CRYPTOCURRENCIES IN THE PHIL - 1of3



First speaker was **Christian John Immanuel S. Boydon**, holder of IE and MS IE/OR from UP who is currently completing his PhD Industrial Engineering at National Taiwan University. He is also currently the Lead Creator and Host of Start Up Podcast Philippines and past ORSP Board Director.

In his talk *Cryptocurrency Fundamentals and Emerging Trends in the Philippines*, Boydon described cryptocurrency as a revolution in that it



presents a payment alternative to shells, gold, paper money and digital money without the disadvantages. He then explained how through decentralized validation, the bitcoin is easy to transfer, not controlled by any one entity and makes double spending impossible. Bitcoin is one of the thousands of cryptocurrencies available that run on blockchain technology. The use of encryption algorithms makes it a currency and a virtual accounting system. He ended by enumerating the various new players in the Philippine crypto market. In response to questions, he mentioned that market for this is volatile and as with any asset, subject to supply and demand.

Following the discussion on cryptocurrency was *Blockchain: What It Is, Why It Matters, And What It Means For Us* by speaker **Arvie de Vera** who is the Co-Founder & CEO of UnionDigital, the digital bank of Union Bank of the Philippines. He established the Fintech Business Group at UnionBank, advocating a collaborative model of banking, enabling, and synergizing with fintechs. Nacho de Vera started the talk with how blockchain enables information to be connected, communicated, and exchanged, thus revolutionizing fund transfers especially for the 70 million unbanked Filipinos in hard-to-reach places in the country. A sample of a blockchain used in the banking system is i2i, which has enabled rural banks to have access to the main banking network, allowing them to perform important banking functions.



He also cited how the blockchain has enabled cross boarder remittances especially among the OFWs. As well as the mobile ATM to facilitate transfer of funds to vendors- all applications that illustrate access to money that is unhampered by distance and time. He ends by explaining how blockchain, by design, is immutable, tamperproof, transparent, programmable and decentralized.

## Agenda

1. Virtual Assets (VA) and Virtual Asset Service Providers (VASPs) Defined
2. VA Landscape in the Philippines
3. BSP's Regulatory Approach
4. Recent Amendments to Regulations
5. The Future of VAs

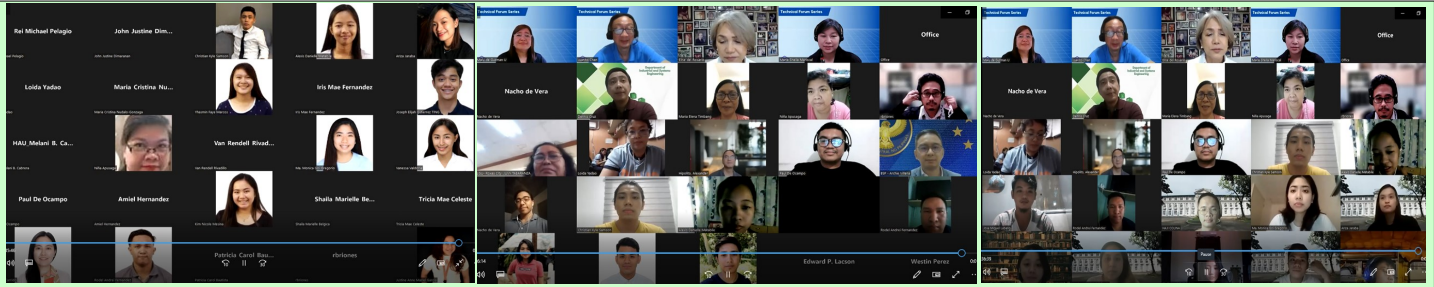


Next up was Director **Mel Plabasan** of the Technology Risk and Innovation Supervision Department of the BSP with his talk on *Regulatory Perspective: The Hoops and Loops of Virtual Asset Landscape*. He began by saying that for regulatory purposes, *virtual asset* (VA) is the term used in place of *virtual currency* because *currency* denotes being issued and backed by the government. Additionally, VAs are digital representations of value that can be traded and used for payments or investments while virtual asset service providers (VASP) are entities that facilitate the VA transactions. VA and VASP are the subject of the BSP regulations that aim to strike a balance between protecting investors

and promoting innovation more specially since the volume and value of VASP transactions have grown exponentially.

Under the BSP, VASPs are in the Money Serve Business along with Foreign Exchange, Remittance Services, and others. The regulations aim to manage the risks that may undermine financial stability by ensuring VASPs have the technology infrastructure, cybersecurity, compliance with anti-money laundering laws as well as with reporting requirements. He noted the Philippines was second only to Japan in putting regulatory provisions for VASPs and discussed the amended BSP regulations.

Ending his talk with the challenges that are up ahead in terms of a dynamic environment of emerging new products and services, Plabasan, it will be noted, is not new to this as he has played a key role in reshaping the regulatory mindset towards a more progressive approach on technology risk and innovation supervision.



There was indeed a lot of take-aways from the very brief but fruitful afternoon for the more than 70 attendees from Quezon City University, Colegio de San Lorenzo, Holy Angel University, Cebu Technological University, Saint Louis University, Batangas State University, Mariano Marcos State University, Adamson University, UP Los Baños, Asia Pacific College, San Miguel Corporation, RGAurelio Business Management Consultancy, Bain & Company (Philippines), Inc., HKUST, VP Nexus Technologies, Inc., and LGU from Roxas Capiz.

The recording of the lecture is available at these links:

<https://youtu.be/ei6xLiaK8sw>; <https://youtu.be/tPtO4qe8fp8>; <https://youtu.be/GwKqGLRiExw> ♦

## Two Members Join the ORSP Board

A. Hipolito and R. Robielos are the two newest members of the current ORSP Board of Directors. They had both served as Board members in the past, with A. Hipolito serving in 1999 and 2000 and R. Robielos in 2003 and 2019.



Alexander "Alex" Hipolito is a Director within Bain & Company's Advanced Analytics Group in Manila specializing in the use of optimization and machine learning / data science techniques for supply chain and service operations applications. Prior to Bain, Alex worked as a Solution Architect for Supply Chain as well as Data Science solutions for Hewlett Packard in Singapore. Alex has a Ph.D. in Industrial & Systems Engineering (Operations Research) from the University of Florida and holds industry certifications from ASCM (APICS Certified Supply Chain Professional) and INFORMS (Certified Analytics Professional).



Rex Robielos is the Department Manager of Operations Research Engineering at Analog Devices General Trias. He was previously the Dean of the School of Industrial Engineering and Engineering Management at Mapua University. He has a BS in Applied Mathematics from the University of the Philippines Los Baños, and a Diploma and MS in Industrial Engineering from the University of the Philippines Diliman. He received his Ph.D in Industrial Management at National Taiwan University of Science and Technology in Taiwan. Currently, he is a Director of Human Factors and Ergonomics Society of the Philippines. ♦

### From the President

## 2022: A Quick Look at ORSP's 35th Year

*by Marie Shella T. Mariscal*

Founded in 1987, ORSP celebrated its 35th year in 2022. This was also the year when the world started to venture out of isolation brought about by the pandemic.

For ORSP, activities continued - webinars, an online conference, and a culminating hybrid regional conference.

March was the first of the 2022 Webinar Series - **OR Addressing Current National Issues**, where 140 OR practitioners, students, faculty, and local government staff listened to speakers who discussed how OR helps in ad-





addressing national issues on agricultural land use allocation, public transport planning, and poverty.

Covered in this issue are the two other webinars held in June and October. **Understanding Cryptocurrencies in the Philippines** covered cryptocurrency fundamentals, emerging trends in the Philippines, blockchain in the banking sector, and how these are regulated by the Central Bank. The last for the year, the October webinar was **Political Manipulation through Social Media**.

On May 14, the ORSP Student Federation organized the online **5th Industrial Engineering Summit AVENier: Leading Future Industrial Engineers to a Technology-driven Industry**. Close to 400 industrial engineering students from all over the country listened to how digital trends in the research and analytics industry were seeing the shift of companies from analog to digital.

Capping the year was the **13th Triennial International Conference of the Association of Asia Pacific Operational Research Societies (APORS)** with the theme **Onward to Recovery Through Operations Research** held on November 9 to 12. It was in hybrid format and attended by around 290 participants from the different Asia-Pacific countries. The conference had three days of plenary talks and paper presentations as well as special tracks on National Contributions and Youth Forum.

Social activities enriched the conference and provided bits of history and culture especially for the foreign delegates who were offered a city tour of Manila highlighted by visits to Fort Santiago, Intramuros, Rizal Park, Casa Manila, and the American cemetery, capped by a welcome dinner. A cultural show was featured in the conference banquet.

The year illustrates how, despite uncertain conditions, ORSP has not let up on spreading the broad applications of OR and Analytics in improving processes and lives, as well as the methodologies behind them. Celebrating its 35th year in 2022, ORSP has shown strength, resilience and the commitment to serve you, who deserve all the gratitude for your continued support. ♦

## Welcome New Members!

This newsletter issue welcomes new members who have joined the ORSP Family.

From the *Academe* are:



**Angelo Ani**  
Assistant Professor  
UP – Los Baños



**Aileen F. Araguas**  
Instructor I  
Batangas State University



**Milagros Baldemor**  
Vice President  
Region I, Phil. Statistical  
Assoc, Inc.



**Diane Carmeliza N. Cuarasma**  
Assistant Professor  
UP – Los Baños



**Jerson A. Culla**  
Instructor  
Batangas State University

From the *Industry* are:



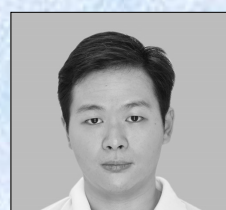
**Angelo S. Guzman**  
Chief  
Operations Research  
Center,  
Phil. Army, AFP



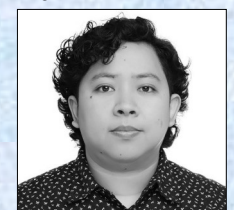
**Edgardo Titus M. Kaalim Jr.**  
Education & Partnership  
Officer  
Batangas State University



**Nomer M. Sarmineto**  
Instructor  
Batangas State University



**Westin Louie T. Perez**  
Data Analytics & OR Analyst  
San Miguel  
Corporation



**Frances Joyce T. Vallejos**  
Functional Domain Lead  
Maximo Business  
Solutions, Inc.



## ORSP Loses Two of its Leaders

It is said that Ateneo Department of Quantitative Methods and Information Technology Department of the John Gokongwei School of Management lost two of its OR pillars in a span of 15 days. The same could be said of the Operations Research Society of the Philippines. Both Vic and Mari-Jo were active members of the ORSP and contributed greatly to making it the organization that it is today.

ORSP is proud to have been associated with these two people who played a big role in the Philippine OR landscape.



*ORSP presidents all (l to r) Vic Reventar with Elise del Rosario, JC Mercado and Dennis Beng Hui*

### **Vicente “Vic” P. Reventar III** **11 May 1951 – 15 December 2022**

Vic was President of the ORSP from 2002 to 2004. During his term, he donated the proceeds of his OR consulting work to ORSP. He was later convinced to return to the Board in 2001 and then in 2017. Sharing is second nature to him - he could always be relied on to present papers and tutorials to various audiences.

He taught part-time at the Ateneo de Manila University from 1973 onwards, most recently with the Department of Quantitative Methods and Information Technology department at the John Gokongwei School of Management, for which he had served as chair. He taught System Dynamics, Decision-Making Using Business Simulations, IT Trends, and Project Management

Fundamentals. He also taught solution methods for large-scale optimization models using Algebraic Modeling Languages. His industry experience include work for Meralco, Technology Resource Center/ Development Academy of the Philippines, Home Development Mutual Fund (PAG-IBIG), and Software Ventures International, Inc. He graduated with the degree of Bachelor of Science in Management Engineering in 1973 from the Ateneo de Manila University.

### **Mari-Jo P. Ruiz** **1 December 1943 – 29 December 2022**

It was in the early years of ORSP when Mari-Jo joined the ORSP Board for the term 1992-1994. A professor emeritus of the Ateneo de Manila, she has taught mathematics and operations research in Ateneo since 1965. In 1999, she was among the finalists in the OR for Development Prize held in Beijing during the International Federation of OR Societies Conference.



*Mari-Jo (seated in the front row, center) during the DOST- ORSP forum in November, 1999.*

She had also been Chair of the Mathematics Department, Chair of the Management Engineering Program, Dean of the School of Arts and Sciences, and also served as a member of the Ateneo's Board of Trustees for three terms. Among her teaching awards were the Metrobank Outstanding Teacher Award (Tertiary Level) in 1992, and the Metrobank Award for Continuing Excellence and Service (ACES) in 2004.

Mari-jo earned her bachelor's degree at Marymount Manhattan College in New York, completed her master's degree at New York University, and finished her Ph.D. at the Ateneo de Manila University. ♦