

# The Newsletter of the INFORMS Revenue Management and Pricing Section

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## Message from the Section Chair

The late spring and summer have been busy due to the peak conference season and then, of course, with vacations. Our flagship annual RMP conference lived up to the already very high expectation and in some aspects exceeded them. We had record attendance and a program packed with interesting presentations and discussions---get a glimpse into that great event by reading the two conference reflections in this issue.

I strongly encourage attendees of other conferences (INFORMS International, CORS, EURO) to write personalized reviews and to include information about RMP-related activities. This should help to find organizers (and attendees) for future conferences.

At the RMP conference, the Section's Board held an open business meeting where we provided a half-time report on the financial health of the Section (we are doing very well), membership trends (definitely an area for improvement) and which also included updates about award competitions, upcoming conferences and miscellaneous board business. An open and exciting discussion followed that centered around increasing relevance of the society to industry members, ideas on increasing membership counts and converting Section's status to an INFORMS Society. We also touched on the level of cooperation with JRPM, and encouraged members to step forward and run in the upcoming sectional elections.

Preparations for our next big event, the INFORMS Annual Conference and its RMP cluster are almost finished; Necati Tereyagoglu and Pelin Pekgun report in this newsletter that we should expect our presence to be on par with last year—that is, very prominent with close to fifty sessions. The Annual Conference is also the place where our main business meeting of the year takes place and, pending confirmation from INFORMS organizing office, will be held on Sunday evening, November 13.

This year's elections to the Section board are being organized by Emmanuel Carrier and Arne Strauss. Please check their update on the following pages to see who is running (we have a full slate of candidates) and then read the bios and position statements. Elections are kicking off this week and will run for about a month. We all now know that elections have consequences, therefore, do cast your vote early so that it is not forgotten.



Mikhail Nediak and his committee are still accepting submissions for our inaugural Dissertation Award (details below), and I am still looking for more proposals to chair our flagship RMP conference in 2018 and beyond. The Board has been busy discussing avenues of cooperation with the Journal of Revenue and Pricing Management ('JRPM') and trying various ideas to attract more potential members, including through social media. But just in case, at the end of the newsletter we provide instructions on how to join the Section by more traditional means such as the phone (landline preferred but mobile will work too).

I would like to thank all the committee chairs, coordinators (newsletter, website, and corporate sponsorship), members and volunteers who have been helping out with organizing and running Section's events and activities.

Darius Walczak  
PROS Inc., Houston, TX

## ELECTIONS

We have three open positions. The elections committee (Emmanuel Carrier, Delta and Arne Strauss, Warwick – we thank them for the excellent job!) collected the bios and position statement of all the candidates, listed alphabetically for each position:

| For Vice Chair/Chair-Elect: |           | For Secretary/Treasurer: |                | For Board Member: |                |
|-----------------------------|-----------|--------------------------|----------------|-------------------|----------------|
| 1                           | Tom Gorin | 1                        | John Quillinan | 1                 | Maarten Oosten |
| 2                           | Dan Zhang | 2                        | Ruxian Wang    | 2                 | Daniel Reaume  |

The ballots open on August 25 and are open through September 23. Members should have received an e-mail from INFORMS with a link to the election survey. **If you have not received one, please contact Section's board.** If you want to become a member, please see <https://www.informs.org/Community/revenue-mgt/Membership/How-to-Join>

## Reflections on the RMP Section Conference

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### Academic:

This year's revenue management conference, organized and hosted by the NYU Stern School of Business, marked another very successful gathering of academics and practitioners in the broad areas and industries covered by revenue management. The conference featured a strong presence from industry with representatives from companies such as IBM, PROS, SAS, Google, AirBnB, Uber, AppNexus, Dassault,...., in the list of speakers and in the audience.

On the academic side, it was stimulating to hear and discuss the latest developments in Pricing and Revenue Management. The two intense days allowed me to learn about new results in assortment



optimization and choice modeling, new models and results in dynamic optimization and learning (with high-dimensional covariates, with multiple segments, with strategic agents...) and new results in bundle pricing, among others. I also enjoyed the broader representation of new areas of applications for revenue management such as, e.g., the provision of services in cloud computing, online advertising and crowdfunding.

A novelty of the conference was the panel discussion that focused on "Revenue Management in Online Markets" building on the successful Marketplace Innovation Workshop that took place the day that preceded the conference. The panel had four speakers representing a variety of profiles with two data science experts Catherine Williams (Chief Data Scientist of AppNexus) and Bar Ifrach (Data Science Manager at AirBnB) and two faculty heavily involved with Online Marketplaces, David Simchi Levi (MIT) and Garrett van Ryzin (Columbia University and Uber). The panel had exchanges on the importance of "system thinking" and modeling skills for data scientists in such organizations, as well as on the power and challenges of experimentation in such markets. Enlightening perspectives on the opportunities these marketplaces bring for academics were shared, leading to an interesting exchange about the tradeoffs for junior faculty members engaging in such collaborations. The panel concluded with a thought-provoking question: Are the opportunities that are arising in industry (and their attractiveness) threatening the ability of universities to attract great talent in the future?

On the second day, the plenary speaker, Robert Phillips, provided an overview of the history of Revenue Management, from the early successes to the plateau it reached some years back, to the revival it has gone through more recently. The talk also laid out some exciting opportunities that are emerging in the field.

Many thanks to professors Srikanth Jagabathula, Ilan Lobel and Gustavo Vulcano for putting together a very stimulating program. I look forward to the 2017 conference that will be hosted by the Centrum Wiskunde & Informatica (CWI) in Amsterdam.

Omar Besbes, Columbia

#### **Practitioner:**

The thirteenth Annual INFORMS Revenue Management and Pricing Section Conference was held at the New York University (NYU) in New York City on June 16th and June 17th, 2016. The conference was organized by Professors Srikanth Jagabathula, Ilan Lobel and Gustavo Vulcano, and sponsored by NYU Stern, INFORMS, PROS and SAS.

During the two days of the conference, there were about 80 presentations in four parallel tracks. The tracks loosely corresponded into three subject categories:

- Strategic Issues and Applications
- Demand Models, Customer Behavior and Forecasting
- Pricing and Revenue Management (RM) Optimization

Within each category, the talks were further grouped into sessions with more specific subjects:

- Strategic Issues and Applications
  - o Competition in RM
  - o Distribution channel RM
  - o Strategic customer selection
  - o Price segmentation
  - o Baseball ticket sales
  - o Performing arts

- o Online review and rating
- o Crowdfunding
- o Online advertising
- o Mobile push campaign
- o Outpatient care service
- o Standby product upgrading
- o Promotion planning for retailers
- Demand Models, Customer Behavior and Forecasting
  - o Customer choice
  - o Strategic customers: learning and pricing
  - o Overbooking
  - o Customer loyalty value
  - o Demand estimation
- Pricing and Revenue Management (RM) Optimization
  - o Adaptive and dynamic pricing
  - o Assortment customization and optimization
  - o Online decision-making
  - o Feature-based pricing
  - o Bundle pricing
  - o Ancillary pricing
  - o Pricing via online social networks
  - o Performance measurement

The presentations were generally of high quality, interesting, and thought-provoking. Regrettably, it was impossible to attend more than 25% of the talks. Thanks to the organizers, the talks were well-organized, and their themes were discernible. Therefore, it was still easy to select the sessions to attend.

The topics of the presentations can be roughly segmented into theoretical and practical issues. For theoretical issues, the topic of assortment optimization clearly stood out, which occurred in 9 sessions. For example, James Davis from UIUC presented assortment optimization over time. Kris Ferreira and Joel Goh from Harvard proposed an assortment rotation strategy to boost sales. Other topics include RM under competition, dynamic pricing, customer behavior, demand estimation and so forth that scattered across the sessions in a balanced way. For instance, James Dong and Huseyin Topaloglu from Cornell studied competitive pricing under the Markov chain choice model. Rim Hariss, Georgia Perakis, Yanchong Zheng and Wichinpong Sinchaisri from MIT examined pricing with quality perception.

On practical issues, in this year's conference, there seemed to have been more talks than in the past. The topics were not only rich but also diverse. For example, Wei Wang and Ravi Kumar from PROS approached the overbooking issues from a different perspective. Instead of estimating overbooking independently as industries have been practicing, they tried to solve the overbooking problem along with the rate optimization problem simultaneously. Ovunc Yilmaz, Mark Ferguson and Pelin Pekgun from the University of South Carolina compared the revenue gained by offering standby upgrades at the times when hotel guests check in with that by offering upgrades directly at the times when guests make reservations. Dirk Sierag and Diederik Roijers from Amsterdam researched the impact of online reviews and ratings on hotel demand.

On the other hand, the topics of practical issues were not just limited to the "classical" RM industries. They were also expanded to other "non-classical" RM industries. For example, Aurelie Thiele from Lehigh illustrated how RM was applied to performing arts, while Jiaqi Xu, Peter Fader and Senthil



Veeraraghavan from Penn studied how to implement dynamic pricing in major league baseball tickets sales. As another example, Ming Hu and Longyuan Du from Toronto, and Saeed Alaei from Google, et. al. formulated dynamic models in crowdfunding.

In addition to the regular presentations, two “special” sessions were also offered. In the second session of the first day, a panel on “Revenue Management in Online Markets” was organized. The invited panel speakers included Bar Ifrach (Data Science Manager in Airbnb), David Simchi-Levi (Professor at MIT and Chairman in OPS Rules), Garrett van Ryzin (Professor at Columbia and Head of Dynamic Pricing Research in Uber), and Catherine Williams (Chief Data Scientist at AppNexus). After briefly introducing their backgrounds and organizations, the four speakers explained their roles and the main challenges they dealt with every day. The interactive discussions between the speakers and the audience were interesting and realistic. For example, one topic that was discussed was about how to make real-time decisions quickly, which has become more and more important in today’s world being overwhelmed with exponentially growing data.

During the lunch presentation of the second day, Robert Phillips (Professor at Columbia and Founder of Nomis) gave a talk about “New Problems in Revenue Management”. Brought with decades of experience from both academy and industry, Bob shared the audience with his keen vision about the future opportunities of pricing and revenue management.

The RM field has been maturing, but it can definitely benefit from other emerging disciplines. For instance, with the rapid growth and availability of diverse data, incorporating the techniques of data mining and machine learning into RM methodologies is very helpful. As a practitioner, I anticipate seeing more such presentations in the future conferences.

Jian Wang, The Rainmaker Group

## Inaugural INFORMS Revenue Management and Pricing Section Dissertation Award

The INFORMS Revenue Management and Pricing Section Dissertation Award is awarded for the best doctoral dissertation in the field of pricing and revenue management written in English. The following criteria will be used in judging candidate dissertations:

- Fundamental contribution and originality of the ideas or methods.
- Practical importance or applicability in solving important real problems.
- Clarity and excellence of the exposition.

Eligible doctoral dissertations are those of which the dissertation defense took place between June 1, 2014, and May 31, 2016, inclusive. The dissertation should contain the date of the defense, or a letter of nomination from a dissertation supervisor should state the date of the defense. To be considered, a dissertation must be nominated by the dissertation supervisor(s) by **September 10, 2016**, who must submit the following items by email to [mikhail.nediak@queensu.ca](mailto:mikhail.nediak@queensu.ca):

- an electronic copy of the dissertation (in PDF format),
- an electronic copy of the extended abstract (3-5 pages) separate from the thesis (in PDF),
- an electronic copy of the letter(s) of nomination from the dissertation supervisor(s) supporting the submission and stating his/her assessment of why the dissertation is worthy of the award (in PDF), and
- an electronic abstract of 300 words without formula or mathematical notation (in PDF format).



The Award committee consists of 3 members, including a chair:

- Omar Besbes, Graduate School of Business, Columbia University, USA
- Huseyin Topaloglu, School of Operations Research and Information Engineering, Cornell University, USA
- Mikhail Nediak (Chair), Smith School of Business, Queen's University, Canada

The Award includes a plaque and a cash award. RMP pays for one plaque for the winning doctoral student. The cash award is \$1,000 for the winning doctoral student. The Award will be presented at the INFORMS Annual Meeting if there is a suitable recipient.

## Upcoming Conferences

### INFORMS 2016

Join us for the Revenue Management and Pricing Track at the 2016 INFORMS Annual Meeting Nashville on November 13-16. The track has 47 sessions with topics highlighting tremendous opportunities for both academics and practitioners to learn more about the recent empirical and analytical techniques used in the growing revenue management and pricing area. The track offers sessions on topics that range from behavioral pricing to revenue management in the sharing economy and social networks. The sessions cover a broad range of revenue management industries including retail, advertising, airlines and hotels. We hope to see you in Nashville.

Pelin Pekgun and Necati Tereyagolu,  
Co-chairs for the Revenue Management and Pricing Cluster

### RMP 2017

The 2017 INFORMS Revenue Management and Pricing Section Conference will be held at Centrum Wiskunde & Informatica, Amsterdam, The Netherlands. There will be two days of presentations on Thursday, June 29 and Friday, June 30. The event is the premier forum for both academics and practitioners who are active in research in the fields of pricing analytics and revenue management. The conference includes the announcement and the award ceremony for the winner of the Revenue Management and Pricing Section Practice Award recognizing an outstanding application of revenue management and pricing. Abstract submission due date: March 18, 2017.

Please contact Arnoud den Boer at [a.v.denboer@uva.nl](mailto:a.v.denboer@uva.nl) if you have questions

## Business Meeting

The Board is planning to hold Section's business meeting on Sunday, November 13, 2016, in the evening. Location and exact time will be announced before the conference.

## Call for Proposals to Host RMP Section Annual Conference in 2018 (and beyond)

The Chair of the INFORMS Revenue Management and Pricing Section invites proposals to host the Section's annual conference in 2018. The conference typically takes place in June, and lasts about three days. The Chair manages the process of selecting the host in conjunction with the Section's Board. Proposals have to include information about the organizers clearly. The winning proposal will be decided by a majority vote of the



Board under the rules governing the selection process. There are also a number of requirements asked of the organizers, and I will be happy to provide full information which is specified in the RMP Policy Manual. Please send your proposals to Darius Walczak (Chair, [dwalczak@pros.com](mailto:dwalczak@pros.com)) or SoYeon Chun (Secretary/Treasurer, [SoYeon.Chun@georgetown.edu](mailto:SoYeon.Chun@georgetown.edu)). We will entertain proposals for future years beyond 2018 as well.

## RMP section – How to Join

To become a member of the Revenue Management and Pricing Section, it is the easiest (but not necessary) just to add it to the regular INFORMS membership. Those who'd rather focus exclusively on the Section's activities can become members only of the Section by calling 1-800-446-3676; the membership entitles to a discount for the RMP conference registration, newsletter, and will keep you connected to the RM and Pricing community.

## Benefits of Membership

As a member of the Section, you will receive our [newsletter](#) with the latest information about section conferences, prizes, and other activities. You will also be eligible for a [50% reduction](#) in the subscription rate for the [Journal of Revenue and Pricing Management](#) – a savings of \$117 – while joining the Section costs \$15 only for regular INFORMS members. Section members now receive a discount off the registration fees for the [annual Section conference](#). Only Section members can receive announcements via the Section ListServer. In the future, only the Section members will be able to access portions of the Website by logging in with their INFORMS username and password; one such portion of the website is [Job postings](#) page.