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EDUCATION

- since 2016 INSEAD, France & Singapore. Ph.D. in Technology & Operations Management.
- 2016–2018 INSEAD, France & Singapore. M.Sc. in Management, *GPA 4.0*.
- 2014–2016 Karlsruhe Institute of Technology (KIT), Germany & Linköping University, Sweden. M.Sc. in Industrial Engineering and Management (double degree), *within best 1.8%*.
- 2010–2014 KIT, Germany. B.Sc. in Industrial Engineering and Management, *within best 0.5%*.

REFERENCES

Sameer Hasija (co-chair)

Professor
Technology & Operations Management, INSEAD
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Andre Calmon (co-chair)

Assistant Professor
Technology & Operations Management, INSEAD
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Luk Van Wassenhove

The Henry Ford Chaired Professor of Manufacturing
Technology & Operations Management, INSEAD
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Niyazi Taneri

Assistant Professor
Analytics & Operations, NUS Business School
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RESEARCH INTERESTS

Sustainable Business Models, Technology-Driven Business Model Innovation, Supply Chain Management, Supply Chain Traceability, Blockchain, Sharing, Mobile Healthcare Units

RESEARCH

Working Papers

Traceability Technology Adoption in Supply Chain Network (with Andre Calmon & Georgina Hall). We study the diffusion of traceability technologies in supply chain networks and address the problem faced by emergent traceability initiatives: finding the smallest number of firms to target as early adopters so that their technology diffuses broadly. The diffusion dynamics are unlike those reflected in the extant literature because the benefits a firm obtains from traceability are conditional on technology adoption throughout a product's supply chain. We develop a model that formalizes these dynamics, incorporating the complicating factor that different supply chains are highly interconnected. We establish the difficulty of finding the smallest set of firms to target. In fact, no polynomial-time algorithm can guarantee a useful approximation. Nonetheless, we develop an exact procedure that proceeds in polynomial time under broad conditions on the supply chain network structure, which subsumes many of the cases observed in practice. We further derive actionable insights about the interplay between network structures and the minimal set.

– In preparation for submission.

Resource Allocation with Sigmoidal Demands: A Data-Driven Approach to Managing Mobile Healthcare Units (with Andres Alban, Harwin de Vries, & Luk Van Wassenhove). We study the allocation problem faced by humanitarian organizations that employ mobile healthcare units for service delivery. Word-of-mouth effects drive demand in such settings, and information is sparse, making planning challenging. We provide a model for the allocation of team visits to sites, as well as algorithmic solutions. These solutions provide insights into how different market and demand characteristics affect the optimal allocation. We then present a gradient boosting procedure to predict customer demands, showing how to fill gaps in the organization-level data with granular population and census information.

– Invited for major revision at *Manufacturing & Service Operations Management*.

Sharing of Heavy Equipment (with Niyazi Taneri & Sameer Hasija). Product sharing fundamentally affects the business model of a manufacturing company. We show how the business model can be redesigned to adapt optimally. We identify after-sales services as an important determinant of both the effectiveness of sharing business models and firms’ ability to prevent third-party platforms’ averse entry. This highlights the potential of sharing in industries that rely on after-sales services for revenues.

– Under review at *Operations Research*.

Selected Works in Progress

Information Systems for Traceability (with Andre Calmon & Sameer Hasija). We build a game-theoretic framework to show that the differences between the underlying information systems profoundly impact both the adoption and effectiveness of traceability. Disparities in the mode of connection, the flexibility of adoption, or the data exchange regimen, for example, can have non-intuitive impacts on whether traceability is broadly adopted because they also affect long-term supplier relationships and commitments. For instance, contrary to what one may intuit, blockchain systems can make it more difficult for organizations to commit to data sharing agreements.

The Fairness-Efficiency Trade-off under Uncertainty (with Peter Zhang). We study the fairness-efficiency trade-off in resource allocations under uncertainty. Technological developments in areas like personalized medicine or machine learning have made questions of fairness more pressing. However, allocation decisions in these areas have inherently uncertain impacts, which has often been ignored. To bridge this gap, we build a framework that unifies the study of allocation decisions in diverse fields. We describe the fairness-efficiency trade-off as a function of the uncertainty characterization and show, for instance, that the degree of uncertainty and the desired level of fairness are complementary in equalizing allocations.

Publications based on Master Thesis at KIT

- With Buergin J., et al., 2019: “Robust assignment of customer orders with uncertain configurations in a production network for aircraft manufacturing.” *Int. J. Prod. Res.* 57(3): 749–763
- With Buergin J., et al., 2018: “Local order scheduling for mixed-model assembly lines in the aircraft manufacturing industry.” *Prod. Eng.* 12(6): 759–767
- With Buergin J., Qu, C., and Lanza G., 2016: “Assignment of Customer-Specific Orders to Plants with Mixed-Model Assembly Lines in Global Production Networks”, *Procedia CIRP* 50: 330–335

AWARDS AND GRANTS

- 2019 INSEAD. Research grant for supply chain traceability research.
- 2019 INSEAD. Outstanding Tutor Award—MBA.
- 2018 INSEAD. Research grant for product sharing research.
- since 2016 INSEAD. Doctoral Student Scholarship.
- 2014 KIT. Robert-Schwebler-Prize—Bachelor Thesis.
- 2011–2016 KIT & German Federal Government. Germany Scholarship.

INVITED PRESENTATIONS

INFORMS Annual Meeting (2020), Kellogg-Wharton OM Workshop (2020), POMS-HK International Conference (2020), Wharton-INSEAD Doctoral Consortium (2019), INFORMS Annual Meeting (2019), M&SOM International Conference (2019), Transatlantic Doctoral Consortium (2019), POMS Annual Conference (2019), POMS-HK International Conference (2019), INFORMS Annual Meeting (2018), Wharton-INSEAD Doctoral Consortium (2018).

SERVICE

2019 Session Chair at INFORMS Annual Meeting and POMS-HK International Conference.
since 2018 Ad-hoc reviewer for Information Systems Research.
since 2018 Ph.D. representative of the Technology & Operations Management area at INSEAD.
2017–2019 Social representative of the INSEAD Ph.D. program.

TEACHING

INSEAD MBA

2021 (sched.) Tutor for Data Science: key concepts and applications in R.
2020 Tutor for Org 2.0: business analytics theory and applications in Python.
2018 Tutor for Process and Operations Management: processes, queueing, newsvendor, business model innovation (evaluation 4.73/5.00, Outstanding Tutor Award—MBA).
2018 Video-tutor for Competitive Supply Chains: newsvendor, order-up-to, risk pooling.

INSEAD Global Executive MBA

2019 Mentor for Final Project: novel application of blockchain in textile supply chains.

KIT Undergraduate

2011–2013 Tutor for Computer Science: programming in Java, theoretical computer science.

PROFESSIONAL EXPERIENCE

2017 Blockchain Division, IBM Corporation, NY. Research Intern.
2015 delta e.V. & delta Karlsruhe GmbH, Germany. Managing Director.
2013–2014 Risk Management, Generali Deutschland Holding AG, Germany. Working Student.
2013 Finance and Accounting Divisions, Voith Hydro Shanghai Ltd., China. Intern.
2012–2013 delta Karlsruhe GmbH, Germany. Management Consultant.

PROGRAMMING

General purpose: Python, Java, C++
Math and statistics: R, Matlab, Mathematica
Others: SQL, Solidity, VBA

LANGUAGES

German: native speaker
English: business fluent (TOEFL 118/120)
French: fluent
Swedish: basic
Mandarin: basic