FGV EAESP

COURSE: Technological Competitiveness in Operations
DEPARTMENT: **POI**
PROGRAM: CMCD AE
SEMESTER AND YEAR:2024/1
CLASS-HOURS: ☒ 30 horas ou ☐15 horas (selecionar)
PROFESSOR: Ely Paiva and Maciel Queiroz
LANGUAGE: English

COURSE DESCRIPTION

The discipline explains how managerial and hard technologies affect a company's competitiveness. The discussion includes key theories such as RBV and institutional theory. The focus shifts from the focal companies to their suppliers and other players in the competitive ecosystem.

LEARNING GOALS

The course learning goals are presented in the table below, showing how they contribute to the learning goals related to the objectives of CMCDAE.

GRAU DE CONTRIBUIÇÃO / LEVEL OF CONTRIBUTION *			
Forte / High	Intermediário / Medium	Reduzido / Low	Nenhum / None
●●●	●●○	●○○	○○○

Objetivos do CMCDAE CMCDAE Objectives	Objetivos da disciplina Course learning goals	Grau de contribuição / Level of Contribution *
Métodos qualitativos de pesquisa Qualitative research methods	Case studies with discussions of methodological procedures.	●●○
Métodos quantitativos de pesquisa Quantitative research methods	Experiments and surveys: methodological procedures for both are thoroughly discussed.	●●○
Conhecimento do tema de pesquisa / teoria Knowledge of research themes and theory	Technology-based competitiveness is discussed in depth.	●●●
Procedimentos de pesquisa Research procedures	Those aspects are present in qualitative and quantitative studies.	●○○
Relevância e inovação em pesquisa Relevance and innovation in research	New topics and research opportunities are presented.	●○○
Elaboração de artigos Development of academic papers	Structure and basic elements are discussed in the classes.	●○○
Outros objetivos da disciplina / Other course learning goals:......		

A descrição completa dos objetivos de aprendizagem do CMCDAE e outras informações podem ser encontradas em https://rebrand.ly/cmae-eaesp (mestrado) e https://rebrand.ly/cdae-eaesp (doutorado).

The full description of the CMCDAE objectives, and other related information, may be found at https://rebrand.ly/cmae-eaesp (masters) e https://rebrand.ly/cdae-eaesp (doctorate).

CONHECIMENTO PRÉVIO, SE HOUVER / PREVIOUS KNOWLEDGE REQUIRED, IF APPLICABLE

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CONTEÚDO/METODOLOGIA / CONTENT/METHODOLOGY

Seminars
Lecture classes

CRITÉRIO DE AVALIAÇÃO / ASSESSMENT

Participation   20%
Presentations   20%
Final Assigment 60%

BIBLIOGRAPHICAL REFERENCES (BASIC)

COURSE SCHEDULE (OPTIONL)

Class 01 - 22/02 – Theoretical Basis

Paiva, E. L.; Roth, A. & Fensterseifer, J., (2008). Organizational Knowledge and Manufacturing Strategy: a Resource-based View. *Journal of Operations Management,*

Ketokivi, Mikko, and Joseph T. Mahoney. (2020): Transaction cost economics as a theory of supply chain efficiency. *Production and Operations Management* 29.4 1011-1031.

Kauppi, K. (2013). Extending the use of institutional theory in operations and supply chain management research: Review and research suggestions. *International Journal of Operations & Production Management*.

Zhang, C., and Dhaliwal, J. (2009). An investigation of resource-based and institutional theoretic factors in technology adoption for operations and supply chain management. *International Journal of Production Economics*, *120*(1), 252-269.

Class 02 - 29/02 – Capabilities

Argote, L., & Hora, M. (2017). Organizational learning and management of technology. Production and OperationsManagement, 26(4), 579–590.

Peng, D.X.; Schroeder, R.G.; Shah, R., Linking routines to operations capabilities: a new perspective. Journal of Operations Management, v.26, n.6, p.730-748, 2008.

Prim, A. L., De Freitas, K. A., Paiva, E. L., & Kumar, M. (2023). The development of quality capabilities in Brazilian breweries: A Co-evolutionary approach. *International Journal of Production Economics*, *256*, 108717.

Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. (2011). Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects. Journal of management, 37(5), 1390-1412.

Wu, S. J.; Melnyk, S. A.; Flynn, B. B. Operational capabilities: A secret ingredient. Decision Sciences, v.41, n.4, p. 721-754, 2010.

Class 03 - 07/03 - Crosss-functional Interfaces

Finger, A.B., Flynn, B.B., Paiva, E.L. (2014), Anticipation of new technologies: supply chain antecedents and competitive performance, International Journal of Operations & Production Management, Vol. 34 No. 6, pp. 807-828.

Hartley, J.L., Sawaya, W. and Dobrzykowski, D. (2022), Exploring blockchain adoption intentions in the supply chain: perspectives from innovation diffusion and institutional theory, International Journal of Physical Distribution & Logistics Management, Vol. 52 No. 2, pp. 190-211. https://doi.org/10.1108/IJPDLM-05-2020-0163

Liu, Xiaojin, Yeung, Andy C.L., Lo, Chris K.Y., Cheng, T.C.E., The moderating effects of knowledge characteristics of firms on the financial value of innovative technology products, Journal of Operations Management,Volume 32, Issue 3,2014, Pages 79-87.

Setia, P., & Patel, P. C. (2013). How information systems help create OM capabilities: Consequents and antecedents of operational absorptive capacity. Journal of Operations Management, 31(6), 409-431. Anny

Class 04 - 14/03 - Digital Transformation

Féres, Wandick Leão, Competing for the Future: Reconfiguring Operational Resources and Capabilities during the Digital Transformation Process, Ph.D. Dissertation, FGV EAESP 2022.

Fernandez-Vidal, J., Gonzalez, R., Gasco, J., & Llopis, J. (2022). Digitalization and corporate transformation: The case of European oil & gas firms. *Technological Forecasting and Social Change*, *174*, 121293.

Li, F. (2020). Leading digital transformation: three emerging approaches for managing the transition. *International Journal of Operations & Production Management*.

Marion, T. J., & Fixson, S. K. (2021). The transformation of the innovation process: How digital tools are changing work, collaboration, and organizations in new product development. *Journal of Product Innovation Management*, *38*(1), 192-215.

Sousa-Zomer, T. T., Neely, A., & Martinez, V. (2020). Digital transforming capability and performance: a microfoundational perspective. *International Journal of Operations & Production Management*, *40*(7/8), 1095-1128.

Class 05 - 21/03 - Industry 4.0

Bai, C., Li, H. A., & Xiao, Y. (2022). Industry 4.0 technologies: Empirical impacts and decision framework. Production and Operations Management.

Choi, Tsan-Ming, Subodha Kumar, Xiaohang Yue, Hau-Ling Chan. (2022). Disruptive technologies and operations management in the Industry 4.0 era and beyond. Production and Operations Management 31, no. 1, 9-31.

Koh, L., Orzes, G., & Jia, F. J. (2019). The fourth industrial revolution (Industry 4.0): technologies disruption on operations and supply chain management. *International Journal of Operations & Production Management*.

Szalavetz, A. (2019). Industry 4.0 and capability development in manufacturing subsidiaries. *Technological Forecasting and Social Change*, *145*, 384-395.

Wamba, S. F., & Queiroz, M. M. (2022). Industry 4.0 and the supply chain digitalisation: a blockchain diffusion perspective. Production Planning & Control, 33(2-3), 193-210.

Class 06 - 04/04 - Service Operations

Spring, M., Faulconbridge, J., & Sarwar, A. (2022). How information technology automates and augments processes: Insights from Artificial-Intelligence-based systems in professional service operations. Journal of Operations Management, 68(6-7), 592-618.

Sampson, Scott E., and Chase, Richard B. (2020), "Customer Contact in a Digital World," Journal of Service Management, Vol. 31, No. 6, pp. 1061-1069

Sampson, Scott E. (2021), "A Strategic Framework for Task Automation in Professional Services," Journal of Service Research, Vol. 24, No. 1, pp. 122-140.

Zhang, Y., Gregory, M., Neely, A., (2016), Global engineering services: Shedding light on network capabilities, Journal of Operations Management, Vol. 42–43, Pages 80-94.

Class 07 - 11/04 - AI and OM

Grover, P., Kar, A.K. & Dwivedi, Y.K. Understanding artificial intelligence adoption in operations management: insights from the review of academic literature and social media discussions. Ann Oper Res 308, 177–213 (2022) Fernando

Mithas, S., Chen, Z. L., Saldanha, T. J., & De Oliveira Silveira, A. (2022). How will artificial intelligence and Industry 4.0 emerging technologies transform operations management? Production and Operations Management. Lucas

Von Krogh, G. (2018). Artificial intelligence in organizations: New opportunities for phenomenon-based theorizing. *Academy of Management Discoveries*. Fabio

Revilla, E., Saenz, M. & Seifert, M. (2023). Human-AI Collaboration in Prediction. A Field Experiment in the Retail Industry. Journal of Management Information Systems (forthcoming).

Wamba, S. F., Queiroz, M. M., Jabbour, C. J. C., & Shi, C. V. (2023). Are both generative AI and ChatGPT game changers for 21st-Century operations and supply chain excellence?. *International Journal of Production Economics*, *265*, 109015.

PROFESSOR MINI CV (OPTIONAL)

Ely Paiva: Full Professor at FGV-EAESP. He was Visiting Scholar at the University of North Carolina/Chapel Hill, and Visiting Professor at the University of Texas Pan American and at ISC Paris. He has published in journals like Journal of Operations Management, International Journal of Operations and Production Management, Supply Chain Management, International Journal of Production Economics, International Journal of Logistics Management, and the main Brazilian journals. He has worked as a consultant for Brazilian and international companies. Ely's research project is funded by the Brazilian Research National Agencies (CNPq and Capes). He is Regional Editor for Latin America of the Journal of Supply Chain Management Journal.

Maciel Queiroz: Associate Professor at FGV-EAESP, Visiting Professor at Toulouse Business School, and Latin/South America Regional Ambassador of the Academy of Management OSCM Division. Maciel is an Associate Editor in the International Journal of Management Reviews and the International Journal of Logistics Management. He has published papers in top-tier OSCM journals (IJOPM, IJPE, IJPR, ANOR, BJM, SCMij, IJLM, TFSC). His current research focuses on the digital transformation of OSCM, including AI, Gen-AI, metaverse, digital supply chain, Industry 4.0, blockchain, and big data analytics.

ESSAY INSTRUCTIONS

10-12 PAGES

Additional information will be delivered in class 01