UNIVERSITY OF MANNHEIM
Business School

CHAIR OF SERVICE
OPERATIONS MANAGEMENT
Prof. Dr. Cornelia Schön

Master Thesis Proposal

Improving Service Operations and the Customer Experience with AI

AI can significantly aid service operations management in various ways, optimizing processes, reducing costs, and improving efficiency. Examples from professional services and service shops industries include:

1. **Demand Forecasting**: AI algorithms can analyze historical data, market trends, and other factors to forecast demand more accurately. This enables businesses to optimize inventory levels, production schedules, and resource allocation.
2. **Process Automation**: AI-driven robotic process automation (RPA) can automate repetitive tasks, such as data entry and invoice processing, freeing up human resources for more strategic activities.
3. **Resource Optimization**: AI algorithms can optimize resource allocation, such as workforce scheduling and energy usage, to minimize costs while meeting operational requirements.
4. **Customer Service**: AI-powered chatbots and virtual assistants can handle customer inquiries and support requests, providing round-the-clock assistance and improving customer satisfaction.
5. **Performance Monitoring and Analysis**: AI-powered analytics tools can monitor key performance indicators (KPIs) in real-time and identify areas for improvement, enabling faster decision-making and continuous optimization.

Overall, AI can play a transformative role in service operations management by enabling data-driven decision-making, automation of routine tasks, and optimization of processes across the entire value chain.

The tasks and objectives of the master thesis are to

- Broadly review and classify the application areas of AI in Service Operations Management based on a literature review and based on company cases.
- Select a specific domain/industry and discuss applications and underlying methods in detail
- Discuss a related case study of your choice (to be agreed upon with supervisor) from https://hbsp.harvard.edu/ in this context. Example cases (Commonwealth Bank, Lemonade, WeWork) are mentioned below.
- Discuss how AI might impact existing and create new business models in the future.

Requirements
- OPM 7xx
- Good knowledge in Operations Management

- Analytical skills

Administrative information for writing a master thesis at the Chair of Service Operations Management can be found [here](#).

Selected Literature Recommendations

Iansiti, M., & Lakhani, K. R. (2020). Competing in the age of AI: Strategy and leadership when algorithms and networks run the world. Harvard Business Press.

Wang, L., Huang, N., Hong, Y., Liu, L., Guo, X., & Chen, G. (2023). Voice-based AI in call center customer service: A natural field experiment. Production and Operations Management, 32(4), 1002-1018.

Sampson, S. E., & dos Santos, R. P. (2023). Reengineering professional services through automation, remote outsourcing, and task delegation. Journal of Operations Management, 69(6), 911-940.

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.

Doumpos, M., Zopounidis, C., Gounopoulos, D., Platanakis, E., & Zhang, W. (2023). Operational research and artificial intelligence methods in banking. European Journal of Operational Research, 306(1), 1-16.

Case Study Examples

Lakhani K.R., Grushka-Cockayne, Y., Paik, J.H. & Randazzo, S.: Customer-Centric Design with Artificial Intelligence: Commonwealth Bank, Case No. [622065](#), Harvard Business School Publishing

Ofek, E. & Golan D. (2019): Lemonade: Disrupting Insurance with Instant Everything, Killer Prices, and a Big Heart, Case No. [520020](#), Harvard Business School Publishing

Ulaga, W., Carmon, Z. & Heely, L. (2020): Lemonade: Delighting Insurance Customers with AI and Behavioural Economics - A Disruptive InsurTech Business Model for Outstanding Customer Experience and Cost-Effective Service Excellence, Case No. [IN1673](#), Harvard Business School Publishing

Ulaga, W., Niessing, J., & Brandwein, N. J. (2019). WeWork - Service excellence through business model innovation: Creating outstanding customer experiences by leveraging data, analytics and digital technologies. Case No. [IN1584](#), Harvard Business School Publishing