Policy Advice Paper

Integrating AI in the Hotel Management domain in Breda University of Applied Sciences

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Breda University of Applied Sciences

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Executive Summary

Introduction

> "Hoteliers who do not educate themselves about artificial intelligence (AI) risk falling behind in the hospitality industry" Hollander, 2023

Artificial Intelligence is everywhere these days, every company, every sector, every phone. Mainly because it makes certain tasks easier or less time intensive. Could AI potentially have this affect on the hotel management study at the Breda University of Applied Sciences(BUas)? In this policy paper, findings and recommendations on the introduction of AI to the hotel management study of BUas will be made, together with their feasibility in form of a SWOT analysis. The findings were gathered by using an cross-method research combining qualitative and quantitative methodology's. The policy paper is determent to answer the following research question:

- *How can AI be successfully introduced to the BUas hotel management program*

Background

The findings in this policy advise paper are based on 5 researches, each focusing on one specific aspect of the introduction of AI to hotel management program of BUas.

Bridging the Gap: Understanding and Overcoming Negative Perceptions of AI in Hotel Management Education van Gaalen, 2023 in this study Wesley focused on the possible cause of negative thoughts students and lecturers might have towards AI.

In the **Unlocking the Potential of AI in Hotel Management: A Study on Training, Skills, and Acceptance of AI in the Hospitality Industry** study, Tosheva, 2023 delves into the usage and acceptance of artificial intelligence (AI) within the Hotel Management domain.

The research paper **Adapting to Change: The Impact of Artificial Intelligence on Hotel Management Skills and Job Roles** Stinga, 2023 investigates the evolving landscape of the hotel management industry in response to the increasing integration of Artificial Intelligence (AI). It explores the impact of AI on job roles, necessary skills, and the implications for educational institutions and industry practices within hotel management.

In the **How can AI improve the current traditional hotel management systems?** paper (Banovac, 2023) revealed a largely positive attitude towards AI's ability to improve traditional hotel management systems.

The research paper **What specific AI-related competencies and training modules are essential for hotel management professionals to proficiently harness AI tools and technologies in their roles?** Mohnansky, 2023 recommends specific AI modules.

These are sometimes broken out as separate sections with the introduction dedicated to the broad goals and underlying motivations for the paper and the background allowing a fuller development of the historical rationale and context for the issue. Sometimes they are joined to describe the context for the ultimate goal, the decision to move forward with research on the topic, or the big picture for the research you are undertaking. This is also where you might highlight your theory of change.

Research Design

The studies were performed by combining quantitative and qualitative research approaches. Quantitative data was gathered by distributing a survey, after which interviews were performed to go deeper in to certain aspects.

Survey was distributed amongst students and lecturers of the hotel domain through different channels. **Interviews** were done with students and lecturers giving us an broad view of opinions and thoughts of AI inside the hotel domain.

Literature Review

The integration of Artificial Intelligence (AI) and advanced technologies in the hospitality industry is reshaping hotel management practices. AI systems, encompassing automation, robotics, and smart technology (STAARA), offer immense potential for enhancing workforce efficiency. While concerns about job insecurity persist, education about AI tools can empower hotel employees, instilling confidence in their roles. Negative biases toward AI, often rooted in fears of job loss, can be countered by highlighting AI's potential to enhance guest experiences and streamline operations. Though not yet widely adopted, AI in hospitality presents opportunities such as chatbots, enabling staff to focus on relationship-building. Traditional hotel roles are evolving due to automation, creating new positions related to managing AI and big data. Social skills remain crucial, as AI cannot replicate human interaction. AI-driven chatbots enhance guest communication, providing rapid responses and personalized services, bolstering guest loyalty. Additionally, AI-powered Customer Relationship Management (CRM) systems facilitate data-driven marketing strategies, increasing revenue. To harness AI effectively, hotel management professionals must acquire competencies in data analytics, machine learning, and AI technology utilization. Training modules should encompass data interpretation, AI implementation, customer interaction in AI-driven environments, and the integration of Business Intelligence (BI) tools for informed decision-making. Balancing automation with human-centered service is key to the industry's growth, necessitating ongoing training, ethical guidelines, and seamless collaboration between AI and human staff. AI's trans formative potential in hotel management lies in its ability to enhance efficiency, personalize guest experiences, and drive revenue growth, with education and competency development playing pivotal roles in maximizing its benefits.

("Summarize literature reviews" ChatGPT, 2023)

Policy Context

At time of the creation of this policy paper, no other policy paper involving the introduction of AI in the hotel domain of BUas existed. This makes the policy advise paper the first one.

Findings

The findings on the integration of Artificial Intelligence (AI) in the hotel management domain are multifaceted, revealing a complex interplay of attitudes, knowledge, and perceptions among both students and educators. This section synthesizes the key insights from multiple research studies, shedding light on the dynamics within the field: ere 1. **Varied Levels of Intst and Acceptance:** Students in the hotel management domain demonstrate varying levels of interest and acceptance of AI. More than half express a moderate interest in learning about AI, while educators are overwhelmingly supportive of integrating AI into the curriculum.

2. **AI Knowledge and Acceptance:** Students' knowledge about AI has a strong negative influence on their acceptance of AI tools, indicating reluctance to embrace these technologies among more knowledgeable students. In contrast, educators' knowledge about AI does not significantly affect their acceptance.

3. **Factors Influencing AI Acceptance:** Multiple predictor models highlight that various factors influence AI acceptance, including knowledge, usage frequency, fear of job displacement, and ease of learning with AI tools among students. Educators, on the other hand, are primarily influenced by their fear of job displacement and higher AI knowledge in terms of their willingness to use AI in teaching.

4. **Fear of Job Displacement:** Students' opinions about AI correlate significantly with their fear of job takeover. The more negative their opinion, the more they fear AI will take their (future) job.

5. **Positive Attitudes Among Students:** Students in the hotel management domain exhibit a strong interest in AI, particularly those with less experience in the field.

They are excited about the potential benefits of AI and its applications in various areas of hotel management.

6. **Balancing Technology and Human Interaction:** There is a shared belief that human touch remains irreplaceable in the hotel industry. Technology is viewed as a tool to support, not entirely replace, human roles, particularly in areas that require personal warmth and understanding.

7. **Skills and Job Role Transformation:** As AI becomes more integrated, the industry is experiencing a shift from traditional people-oriented skills ("red skills") to newer ones like critical thinking, data analysis, and cybersecurity.

("Summarize findings" ChatGPT, 2023)

Recommendations

In this section recommendations for the introduction/ implementation of AI in the hotel management domain of AI will be given. Be aware these are just recommendations and not completely developed policy's.

Faculty Development

Establish a program for faculty to continuously enhance their knowledge of AI, either through workshops, online courses, or partnerships with AI experts.

SWOT analysis

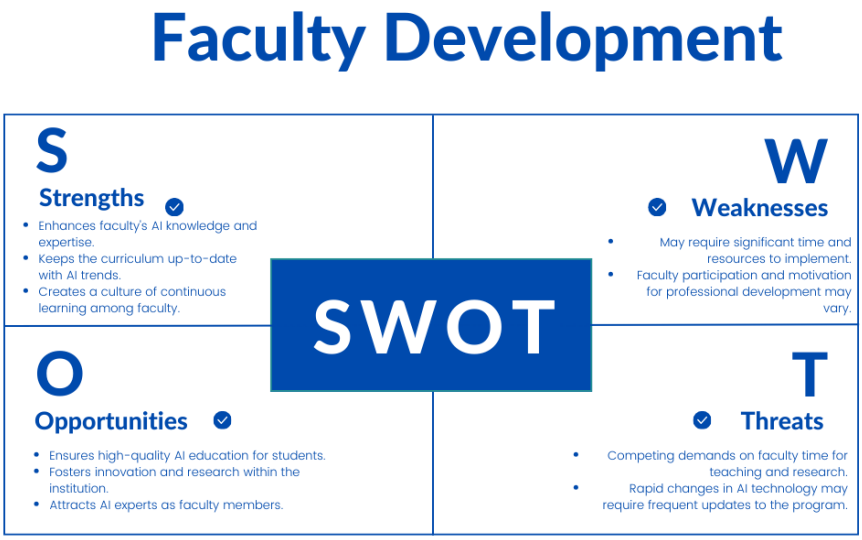

Figure 1

SWOT for Faculty development

Cross-over projects

These projects will consist of students from the hotel management and AI; it can contain students from different domains as well. In these projects AI and hotel management students would work together on projects giving hotel management students insights in the wonderful world of AI. It would be extremely beneficial for AI students as well; learning how to communicate with different domains and stakeholders. Besides that it's also a good way to prepare students for there real life jobs; because there you almost always work together with people from different backgrounds/ departments as well.

It could also lead to new innovative ideas being born; which might even lead to amazing start-up company's. Especially when involving multiple domains in to the cross-over projects, which would simulate a real-life environment even more.

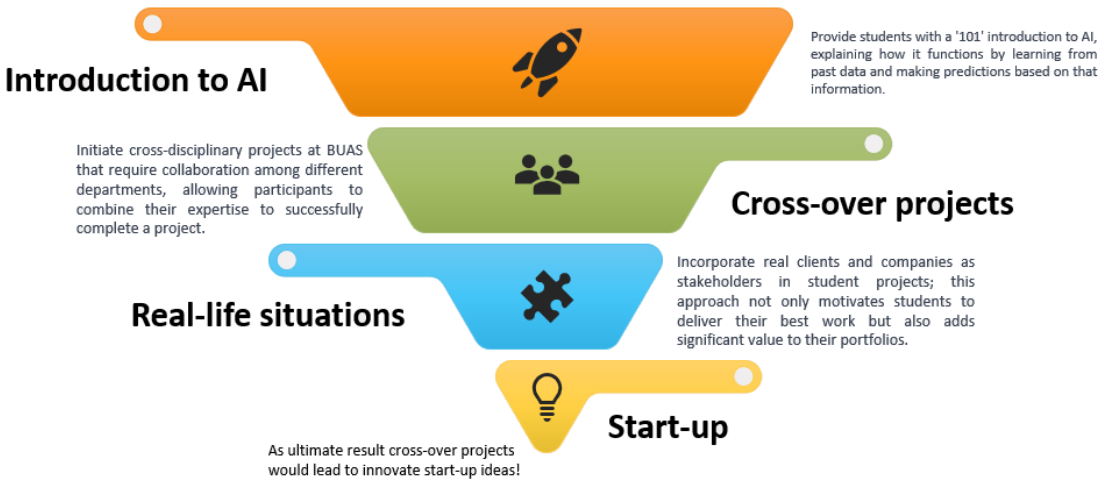

Figure 2

Cross-over

SWOT analysis

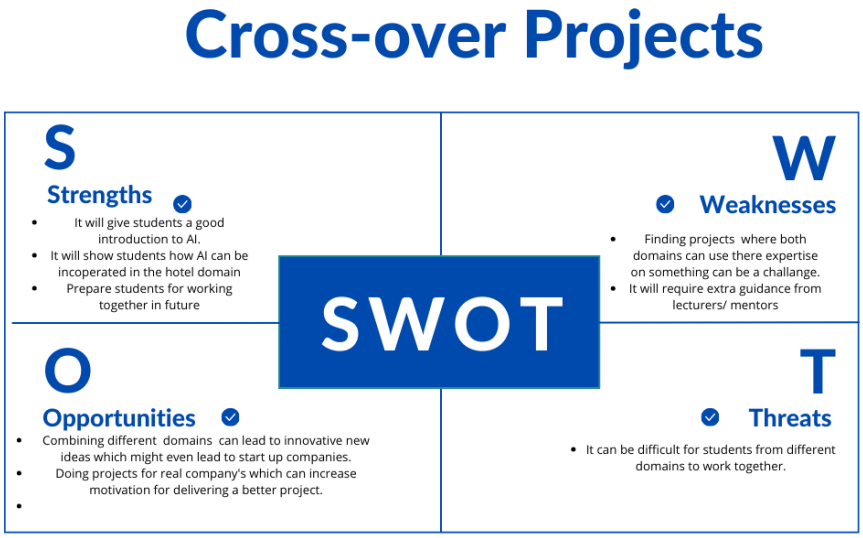

Figure 3

SWOT for Cross-over projects

Integrate AI in curriculum

To ensure comprehensive AI education within hotel management, the curriculum should integrate AI basics, highlighting how AI learns and predicts, and its effective application in the hotel domain to afford staff more time for customer relationships. Foundational courses should introduce AI and ML concepts, their evolution, and their current applications in hospitality, enriched with case studies demonstrating successful AI integration in hotel operations. A key focus should be on interpreting data analytics to improve guest experiences and operational efficiency. Operational AI Applications classes will showcase AI's role in streamlining tasks like rostering and check-ins, underscoring efficiency gains. The ethical considerations of AI must be a core part of the curriculum, covering data privacy and responsible AI use. Training should include Human-AI Collaboration, preparing students for an AI cooperative future, and specialized modules for strategic AI use in revenue management. Courses on Innovation and Change Management with AI, coupled with practical workshops in AI Project and Prompt Crafting, will equip students to lead AI-driven innovation. Addressing the generational technology gap, a course on Technology Adoption in Hospitality will cultivate uniform AI acceptance, while sessions on Career Development with AI Skills will emphasize the value of AI expertise in the evolving hotel management landscape.

SWOT analysis

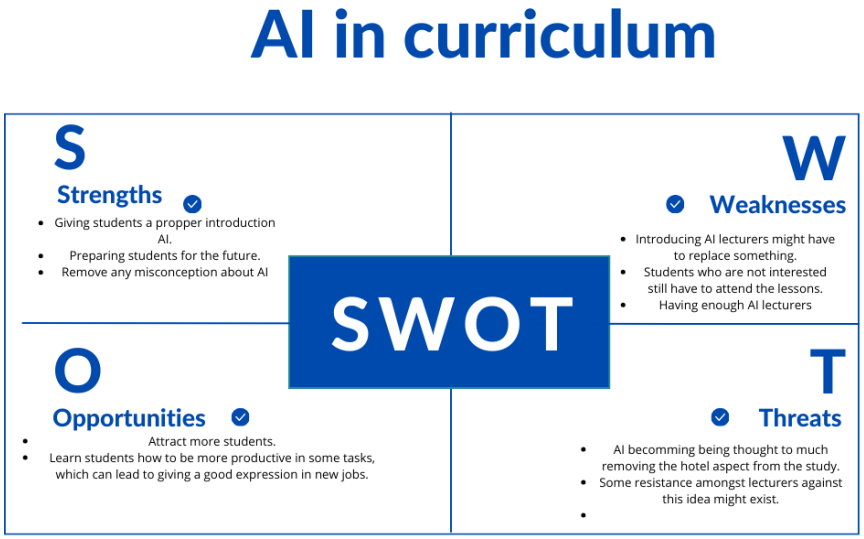

Figure 4

SWOT in curriculum

Conclusion

Going back to the quote with which we started the policy paper;

> "Hoteliers who do not educate themselves about artificial intelligence (AI) risk falling behind in the hospitality industry" Hollander, 2023

We can understand that the implementation of AI in the hotel domain at BUAS is a necessary/ unavoidable step. The question shouldn't be, 'should we implement AI', the question should be 'how are we going to implement AI. As universities across the Netherlands are currently integrating AI into their curricula, BUAS needs to keep pace and adjust its study programs accordingly..

If it would be decided not to act upon the recommendations resulting from the research, (future) hotel management students of BUAS have a big risk of having a large disadvantage on the future job market. It might, and probably will cause hotel management students to go to other university's.

References

Banovac, L. (2023). How can ai improve the current traditional hotel management systems?

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Stinga, C. (2023). Adapting to change: The impact of artificial intelligence on hotel management skills and job roles.

Tosheva, A. (2023). Unlocking the potential of ai in hotel management: A study on training, skills, and acceptance of ai in the hospitality industry.

van Gaalen, W. (2023). Bridging the gap: Understanding and overcoming negative perceptions of ai in hotel management education.

Appendix

Due to privacy concerns, the stakeholder analysis can be found in our GitHub, which is only accessible to members of the research and study advisors.