

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX'24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”

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INNOVATION, INVENTION, AND DESIGN

FOREWORD BY THE RECTOR OF UiTM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi

Rector, Universiti Teknologi MARA (UiTM)

Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Umami Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah

Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

**FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY,
INNOVATION AND DIGITAL COMMUNICATIONS**



YB Datuk Fairul Nizam bin Roslan

Melaka State Exco of Science, Technology, Innovation and Digital Communications

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

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Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	BUSHRA ABDUL HALIM
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	FAIQAH HAFIDZAH BINTI HALIM
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	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

ABOUT MIIEX'24

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs.

This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

OBJECTIVES

1. Encourage and instil passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;
2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;
5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

THEME

'EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION'

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F.O.S Membership System Enhancement using Geolocation, Chatbot with User Preferences

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Abstract

The "Enhancement of the F.O.S Membership System" convey addresses key issue identified during staff interviews about the membership points system and customer satisfaction. In addition to being limited to outlet stores, the system's limitations make it difficult for customers to find other F.O.S locations, receive promotional updates, and identify popular products. To overcome these constraints, this paper proposes a web-based online sales information system with geolocation features and a chatbot with user-specific recommendation capabilities. Provide easy access to membership benefits, real-time promotions, and tailored product recommendations to boost customer engagement and loyalty. Goals include system design, development, testing, and user preference-based product discovery. With technology and data analytics, this initiative will improve customer shopping experiences, brand loyalty, and business growth. With its ability to seamlessly bridge online and offline channels, the proposed system gives customers valuable information and personalized interactions. Overall, implementation will improve retail convenience, satisfaction, and engagement while giving F.O.S a competitive edge.

Keywords: Membership System Enhancement, Web-Based Sales Information, Geolocation Features, Personalized Recommendations, Customer Engagement

1. INTRODUCTION

The F.O.S Membership System currently faces challenges in providing accessible and functional services to customers due to its confinement to outlet stores. Issues such as difficulty in locating stores, lack of timely promotional updates, and limited product information hinder customer satisfaction and engagement. To overcome these limitations, this paper proposes the development of a web-based online sales information system for F.O.S, aimed at enhancing customer experience and loyalty.

2. OBJECTIVE

This project will design, develop, and implement F.O.S.'s web-based membership system. By simplifying membership benefits, real-time promotions, and personalized product recommendations, this system will overcome current limitations. The system also improves product discovery through user preferences, increasing customer satisfaction and engagement.

3. NOVELTY & INVENTIVENESS

The proposed system includes geolocation integration and a personalized recommendation chatbot. Technology and data analytics will connect online and offline channels to give customers easy access to relevant information and tailored interactions. The system can implement location-based services to improve user experience with geolocation technology. Location-based services provide relevant information. A more engaging and useful user experience is achieved by providing customized suggestions for local businesses, events, and services. Chatbots with personalized recommendations add innovation. Data analytics helps this feature understand user preferences and behavior and offer customised solutions. Customized suggestions boost user engagement and satisfaction, making interactions more purposeful and effective.

4. PRACTICALITY & USEFULNESS

The web-based membership system will be practical and useful for both F.O.S and its customers. It will streamline the customer shopping experience, providing easy access to membership benefits and promotions. Moreover, the system's personalized recommendation capabilities will aid customers in discovering products tailored to their preferences, enhancing their overall satisfaction and loyalty to the brand.

5. CONCLUSION

F.O.S Membership System enhancements will transform customer shopping experiences, boosting brand loyalty and business growth. Through seamless access to membership benefits, real-time promotions, and personalized product recommendations, the system will improve retail convenience, satisfaction, and engagement. F.O.S will gain a market advantage and benefit society from this initiative. The system's use of emerging technologies and data-driven insights to improve user experiences and personalize interactions shows its innovation. This method sets the system apart and could change how users use the platform.

REFERENCES

- Saleem, U., yi, S., Bilal, M., Topor, D. I., & Căpușneanu, S. (2022, August 24). The impact of website quality on customer satisfaction and eWOM in online purchase intention: The moderating role of gender in risk-taking. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.945707>
- Paulins, V. A., & Geistfeld, L. V. (2003, December 1). The effect of consumer perceptions of store attributes on apparel store preference. *Journal of Fashion Marketing and Management: An International Journal*, 7(4), 371–385. <https://doi.org/10.1108/13612020310496967>

- Roxin, A., Gaber, J., Wack, M., & Nait-Sidi-Moh, A. (2007, November). Survey of Wireless Geolocation Techniques. *2007 IEEE Globecom Workshops*. <https://doi.org/10.1109/glocomw.2007.4437809>
- Patel, D., Patel, F., & Chauhan, U. (2023, April 16). Recommendation Systems: Types, Applications, and Challenges. *International Journal of Computing and Digital Systems*, *13*(1), 851–868. <https://doi.org/10.12785/ijcds/130168>
- Przegalinska, A., Ciechanowski, L., Stroz, A., Gloor, P., & Mazurek, G. (2019, November). In bot we trust: A new methodology of chatbot performance measures. *Business Horizons*, *62*(6), 785–797. <https://doi.org/10.1016/j.bushor.2019.08.005>
- Zehir, C., Sehitoglu, Y., Narcikara, E., & Zehir, S. (2014, September). E-S-Quality, Perceived Value and Loyalty Intentions Relationships in Internet Retailers. *Procedia - Social and Behavioral Sciences*, *150*, 1071–1079. <https://doi.org/10.1016/j.sbspro.2014.09.120>
- Okina, Y. (2022). Digitalization of Payment Instruments: Cashless Payments and Loyalty Points Systems. *The Future of Financial Systems in the Digital Age*, 117–131. https://doi.org/10.1007/978-981-16-7830-1_7