**JOURNAL OF TECHNOLOGY AND OPERATIONS MANAGEMENT**
*http://e-journal.uum.edu.my/index.php/jtom*

# A COMPARATIVE REVIEW OF CONFERENCE MANAGEMENT SYSTEM

**[1]Wan Hussain Wan Ishak, [2]Fadhilah Mat Yamin, [3]Mohamad Farhan Mohamad Mohsin, & [4]Mohd Fitri Mansor**

*[1,3]School of Computing, Universiti Utara Malaysia, Sintok, Kedah, Malaysia*
*[2]School of Technology Management & Logistics, Universiti Utara Malaysia, Sintok, Kedah, Malaysia*
*[4]School of Business Innovation and Technopreneurship, Universiti Malaysia Perlis, Malaysia*

*Corresponding Author Email: hussain@uum.edu.my*

## ABSTRACT

A conference stands as one of the most popular academic events, bringing together scholars to exchange knowledge on a specific theme. However, organising a conference is a demanding task that requires the meticulous utilisation of various resources. A conference management system (CMS) emerges as a valuable tool, empowering conference organisers to streamline tasks such as article submission, reviewing, and registration, thereby enhancing the efficiency of the overall conference management process. This article presents a comprehensive review of commonly used CMS platforms such as EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS. The review delves into the strengths and features of each platform, focusing on essential aspects such as paper submission, the review process, registration, agenda and programme management, virtual conference support, proceedings, and email communication. Through a comparative analysis, the article highlights the varied functionalities and unique features of each CMS, giving organisers a deep understanding of what each platform offers. The aim is to empower organisers with insights that help them make informed decisions based on their specific event management needs.

**Keywords:** Web-based application, Conference Management Systems (CMS), Comparative Analysis, Academic Events, Virtual Conference Support

.

## INTRODUCTION

A conference stands as a significant academic event, serving as a central platform where scholars gather to share and exchange knowledge pertaining to a specific theme. It represents a crucial opportunity for academics to present their research, engage in intellectual discourse, and foster collaboration within their respective fields. Despite its academic importance, the organisation of a conference is a complex and demanding task that requires careful planning and execution.

The process of organising a conference involves the thorough utilisation of a diverse range of resources. From coordinating speakers and managing logistics to handling abstract submissions and overseeing the review process, each aspect demands attention to detail. Financial considerations, venue arrangements, and technological infrastructure must all be carefully managed to ensure a seamless and successful event. Furthermore, effective communication channels need to be established to keep participants informed and engaged.

A Conference Management System (CMS) is one of the tools that conference organizers can utilize to facilitate the overall conference organization process (Ishak et al., 2003). This software streamlines intricate procedures, establishing a centralized hub for tasks like paper submission and review (Sultan et al., 2009; Daimi and Li, 2011). Authors can seamlessly submit their work electronically, and the system facilitates a structured peer-review process to ensure the quality and relevance of presentations. This not only expedites the reviewing phase but also establishes a systematic platform for authors and reviewers, fostering a more efficient and transparent selection process (Ishak and Zaibon, 2008; Kalmukov, 2011).

CMS also plays a vital role in handling attendee registrations and related financial transactions (Lubis et al., 2022). Organisers can effortlessly configure different registration categories, manage payments, and generate invoices, thereby simplifying the traditionally cumbersome task of handling participant information. Furthermore, the system aids in creating and managing the conference programmeme, empowering organisers to schedule sessions, keynote speakers, workshops, and other events. This not only ensures a well-organised and engaging programmeme but also provides participants with easy access to the schedule, enhancing their overall conference experience.

Effective communication is a cornerstone of a CMS, facilitating seamless interaction among organisers, participants, and other stakeholders (Gupta et al., 2013). Typically, the system incorporates features such as email notifications, discussion forums, and messaging tools to keep all involved parties informed and engaged. This not only diminishes the likelihood of miscommunication but also contributes to a more collaborative and connected conference community (Zheng et al., 2008).

This article thoroughly explores the distinctive features and functionalities of widely-used CMS platforms, such as EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS. The aim of this review is to provide a comprehensive understanding of the diverse capabilities offered by each platform, contributing to the seamless organisation and execution of academic and scientific conferences. and thus helping conference organisers make informed decisions based on their specific event management needs.

## METHODOLOGY

In this study, six widely used CMS platforms—EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS—were selected based on their prevalence and relevance in academic and scientific communities. Subsequently, comprehensive data collection was conducted simultaneously on each identified platform website. This involved a meticulous exploration of features and functionalities, an

examination of technical specifications, and a thorough review of official documentation. Based on the gathered data, a comparative analysis of the functionalities and unique features of these CMS platforms is formalised.


## OVERVIEW OF THE SELECTED CMS

In this review, six CMS platforms have been selected for a comparative analysis: EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS.

EasyChair (https://easychair.org/) stands out for its user-friendly interface, providing tailored web services that evolve with changing needs. It not only supports abstract and paper submissions but also incorporates the Virtual Conference Support (VCS) feature to address the growing trend of virtual and hybrid events. Through email notifications, EasyChair expedites effective communication and equips organisers with tools for seamless conference creation and promotion.

ConfBay (https://confbay.com/) positions itself as a user-friendly CMS with capabilities that span registration, submission notifications, and secure online payments. Its emphasis on participant and author convenience is evident in features such as the ability to check submission status and receive various notification emails.

OpenConf (https://www.openconf.com/), available in Community, Plus, and Professional Editions, distinguishes itself with extensive customisation options. It supports the entire submission lifecycle, incorporating blind reviews, bidding, and automatic conflict detection. The proficiency of OpenConf extends to agenda creation, offering robust support for virtual conferences.

Microsoft CMT (https://cmt3.research.microsoft.com/) operates on the Azure cloud platform and has garnered a vast user base. It handles complex workflows with features like blind reviews and robust conflict management. Integration with Microsoft Azure ensures high security, scalability, and reliability.

COMS (https://conference-service.com/), a veteran of supporting academic conferences since 2008, excels in simplicity, flexibility, and auxiliary functions. Covering abstracts, full papers, and reviews and offering a well-structured navigation system, COMS provides strong language integration and support for effective conference management.

EDAS, which stands for Editor's Assistant (https://edas.info/), is a widely adopted online conference management system in the academic community. Tailored to different requirements, it efficiently manages tasks such as abstract submissions, peer-review processes, conference registration, and payments. By simplifying administrative responsibilities, EDAS empowers organisers to concentrate on the content and success of their events.


## COMPARISON OF THE CMS

The comparative analysis of CMS platforms reveals a distinct array of features finely tuned to meet the specific demands of academic and scientific events (see Table 1). EasyChair, with its expansive user base and diverse subscription categories, provides services like Virtual Conference Support (VCS), specially designed for virtual conferences. While specific user base information is unavailable, ConfBay distinguishes itself with customisable features, encompassing abstract submission, registration, and paper review. OpenConf, which is owned by Zakon Group LLC, offers Community,

Plus, and Professional Editions, complemented by customisation services and hosting options. Microsoft CMT is a platform supported by Microsoft Research. It operates on the Azure cloud platform, offers secure and scalable conference management, and features blind reviews and multi-track support. In operation since 2008, COMS prioritises simplicity and flexibility, supporting various conference models and providing additional functions at no extra cost. EDAS, offering different licence editions, focuses on simplicity for self-maintenance.

Regarding customisation, OpenConf and ConfBay offer dedicated services to tailor the software to specific requirements, contrasting with EasyChair, which provides limited customisation options. Hosting services are available for OpenConf, ConfBay, and COMS, each with its own approach, while EasyChair, Microsoft CMT, and EDAS do not explicitly offer hosting services. Licence editions span from free to professional across platforms, with EasyChair, OpenConf, COMS, and EDAS adopting this model.

Table 1
*Comparison of the CMS general features*

| Feature | EasyChair | ConfBay | OpenConf | Microsoft CMT | COMS | EDAS |
|---|---|---|---|---|---|---|
| Conference Models | Single and multi-track versions | Not specified | Not specified | Standard and multi-track versions | Not specified | Not specified |
| Subscription Categories | Free, Professional, Executive/ VIP | Free trial, pricing tiers | Community, Plus, Professional Editions | Not specified | Not specified | Not specified |
| Services | Conference management, VCS, registration, Smart CFP, Smart Slide, proceedings, preprints | Abstract submission, registration, paper review | Customization, hosting, local arrangements | Hosted on Azure cloud platform, academic conference management | Abstract and paper submission, reviews | Abstract submission, peer review, registration, conference support |
| Customization | Limited | Customization service | Customization service | Customizable forms, acceptance types | Strong support, powerful and flexible | Customization service |
| Hosting Service | No | Hosting service available | Hosting service available | Hosted on Microsoft Azure cloud platform | Hosting on user's web server | Hosting options available |
| Mobile App | Not specified | Not specified | Available | Not specified | Mobile app available | Not specified |
| Virtual Conference Support | VCS for virtual and hybrid events | Virtual platform | Virtual platform, online proceedings | Fully accessible through web-based interface | Virtual platform, online courses | Virtual conference support |

Mobile app support enhances accessibility for users of OpenConf and COMS. Virtual conference support is a shared feature among these systems, facilitating the organisation and participation in virtual and hybrid events. Proceedings publication is a focal point, streamlined by platforms like EasyChair, OpenConf, and EDAS. Email communication, integral to all platforms, provides notifications for registration, submissions, reviews, and more.

In essence, each conference management system contributes unique strengths, addressing diverse needs within the academic and scientific community. The choice among EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS hinges on specific conference requirements and preferences for features, customisation, and support.

Table 2 emphasizes the unique features offered by the six CMS platforms. Regarding paper submission, all CMS platforms facilitate online paper submission, allowing organizers to manage either abstracts, full papers, or exclusively full papers. This streamlined process enhances the efficiency of paper submission and management for organizers.

Table 2

*Comparative Analysis of Conference Support Features in CMS*

| Feature | EasyChair | ConfBay | OpenConf | Microsoft CMT | COMS | EDAS |
|---|---|---|---|---|---|---|
| Paper Submission | Abstract and paper submission | Abstract, Full Paper, Camera Ready | Online submission, file upload | Full submission life cycle, abstracts, papers | Handles abstracts, full papers | Abstract submission and management |
| Review Process | Review assignment, online discussion | Online Submission Reviewer Form | Blind reviews, bidding, assignment | Automatic conflict detection, discussion, virtual PC meeting | Blind reviews, reviewer bidding | Comprehensive peer-review system |
| Registration | Registration, online payment | Receive Notifications Emails, Online Payment | Not mention | Registration, payment plans, technical support | Delegate registration, payments | Online registration and payment |
| Agenda and Program | Program generation, smart program module | Building agenda, sessions creation | Custom acceptance types, program | Multiple roles, customizable form, agenda and proceedings | Interactive agenda, proceedings | Agenda creation, sessions |
| Proceedings | Publishing conference proceedings | Downloadable reports | Online proceedings, downloadable reports | Streamlined IEEE eCopyright submission | Handles abstracts, papers | Online proceedings, publication |
| Email | Communication and monitoring | Email notifications for registration, submissions | Bulk and automatic emails | Email notifications for submission, reviews, etc. | Email invitations, notifications | Communication through email |

The review process exhibits variations among platforms. EasyChair facilitates review assignment and online discussions, ConfBay employs an online submission reviewer form, OpenConf employs both auto and manual review assignment, incorporating blind reviews and bidding depending on the subscribed edition. Microsoft CMT features automatic conflict detection, discussions, and virtual PC meetings. COMS utilizes blind reviews and reviewer bidding, and EDAS implements a comprehensive peer-review system.

For registration, EasyChair supports online payment along with registration, while ConfBay involves email notifications for registration and online payments. Microsoft CMT manages registration,

payment plans, and technical support; COMS facilitates delegate registration and payments; and EDAS provides online registration and payment services.

In terms of agenda and programme, each platform exhibits unique strengths. EasyChair excels in programmeme generation with a smart programmeme module; ConfBay involves building agendas and creating sessions; OpenConf customises acceptance types and manages programmemes; Microsoft CMT supports multiple roles, customisable forms, and agendas and proceedings; COMS offers interactive agendas and proceedings; and EDAS focuses on agenda creation and session management.

Concerning proceedings, EasyChair specialises in publishing conference proceedings, ConfBay provides downloadable reports, OpenConf offers online proceedings and downloadable reports, Microsoft CMT streamlines IEEE eCopyright submission, COMS handles both abstracts and papers, and EDAS manages online proceedings and publication.

Lastly, in terms of email communication, EasyChair is used for communication and monitoring, ConfBay sends email notifications for registration and submissions, OpenConf involves bulk and automatic emails, Microsoft CMT sends email notifications for submission reviews, etc., COMS uses email invitations and notifications, and EDAS primarily communicates through email.


## CONCLUSION

This thorough examination of CMS platforms—EasyChair, ConfBay, OpenConf, Microsoft CMT, COMS, and EDAS—underlines the varied and refined strengths that each brings to the realm of academic and scientific event organization. The distinctive features, encompassing user-friendly interfaces, comprehensive service offerings, and advanced functionalities such as virtual conference support, customisable solutions, and cloud-based efficiency, exemplify the adaptability of these systems to the evolving needs of the conference landscape.

The comparison has illuminated the intricate aspects of paper submission, the review process, registration, agenda and programme management, virtual conference support, proceedings, and email communication, elucidating the distinctive contributions of each CMS. EasyChair's user-centric approach, ConfBay's customisation capability, OpenConf's tiered editions, Microsoft CMT's cloud-based efficiency, COMS's reliability, and EDAS's IEEE affiliation collectively offer a diverse range of options for conference organisers.

As event organisers navigate the dynamic demands of their functions, the choice among these CMS platforms transforms into a strategic decision, contingent on particular needs, preferences, and priorities (Zaibon et al., 2003). The system should possess the capability to capture participants' real-time responses (Yanqing and Itodo, 2021). The diversity in features and refined strengths ensures that organisers can customise their selections to seamlessly align with the objectives and nature of their conferences, whether in hybrid or virtual mode (Baumann et al., 2023), ultimately enhancing the success and efficiency of academic and scientific gatherings worldwide.


## ACKNOWLEDGMENT

## REFERENCES

Baumann, M., Bacchus, C., Aznar, M. C., Coppes, R. P., Deutsch, E., Georg, D., Haustermans, K., Hoskin, P., Krause, M., Lartigau, E. F., Lee, A. W. M., Löck, S., Offersen, B. V., Overgaard, J., Thwaites, D. I., van der Kogel, A. J., van der Heide, U. A., & Valentini, V. (2023). Are hybrid conferences the new standard? *Radiotherapy and Oncology*, 184, 109695. https://doi.org/10.1016/j.radonc.2023.109695

Daimi, K. & Li, L. (2011) Designing an Online Conference Management System. *Proceedings of the 2011 international conference on engineering research & practice* (Las Vegas NV, July 18-21, 2011), pp.

Gupta, B., Gupta, O.P., & Sawhney, B.K. (2013) A Framework for Conference Management System, *International Journal of Management & Information Technology*, 5(2), 483-487

Ishak, W.H.W. & Zaibon, S.B. (2008) KMICe eX: Conference Management Tool, *Proceedings of Knowledge Management International Conference 2008*, Vol 2, pp. 645-650

Ishak, W.H.W., Zaibon, S.B., Rahmat, A.R. & Minai, M.S. (2003) Conference Management System to Manage Conference Information On-Line, *In Investing in Innovation 2003, Vol 4: Information Technology and Communication*, ed. Ramlan Mahmood et al., pp. 191 – 194

Kalmukov, Y. (2011). Architecture of a Conference Management System Providing Advanced Paper Assignment Features, *International Journal of Computer Applications*, 34(3), 51-59

Lubis, M., Zunaedi, I., Musnansyah, A., & Fauzi, R. (2022) Design Approach in Conference Management System with EZDESK Dashboard for Digital Ecosystem, *International Conference on Science and Technology (ICOSTECH)*, Batam City, Indonesia, pp. 1-7, doi: 10.1109/ICOSTECH54296.2022.9829166.

Sultan, A.B.M., Ghani, A.A.A. & Fang, L.S. (2009) Framework for Conference Management System, *Computer and Information Science*, 2(1), 90-94.

Yanqing, F., & Itodo, D.E. (2021) An Emerging Model for Virtual International Academic Conference in Architecture, Engineering, and Construction, *Frontiers in Built Environment*, Vol. 7, 1-13, DOI=10.3389/fbuil.2021.701755

Zaibon, S.B., Ishak, W.H.W., Rahmat, A.R. & Minai, M.S. (2003) Conference Management System: An Online DSS for Conference Secretariat, *Prosiding Seminar Kebangsaan Sains Pemutusan 2003* (15-16 Okt. 2003), pp. 115 - 120.

Zheng, C., Shen, W., Zheng, Q., & Tian, F. (2008) Design and implementation of a collaborative conference management system, *Proceedings of the 12th International Conference on Computer Supported Cooperative Work in Design (CSCWD 2008)*, Xi'an, P.R. China, April 16-18, 2008, pp. 5-10