EDITORIAL MANAGEMENT SYSTEMS

Benefits of performing focused editorial audits to ensure optimized workflows, system configurations, and system evaluation and selection

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INTRODUCTION

This thought paper reviews the evolution of editorial management systems (EMS), the impact on the management of peer-reviewed publications, and the importance of using technology as a tool to support the humans involved at all stages of peer review. An EMS provides the background infrastructure and is a critical tool for managing a robust, efficient, and ethically sound peer review process. EMS should be pushed to leverage technology to support the people (editorial office staff, authors, editors, reviewers, etc.) to enhance operations. The scholarly publishing industry is increasingly evolving, and it is important to regularly evaluate workflows, processes, and procedures, and EMS technology to maintain best practices and standards, support streamlined operations and provide space for strategic vision. Conducting audits, evaluating the existing technology landscape, and considering EMS migrations or integrating new tools can bring positive change and cost savings.

TECHNOLOGICAL DEVELOPMENT

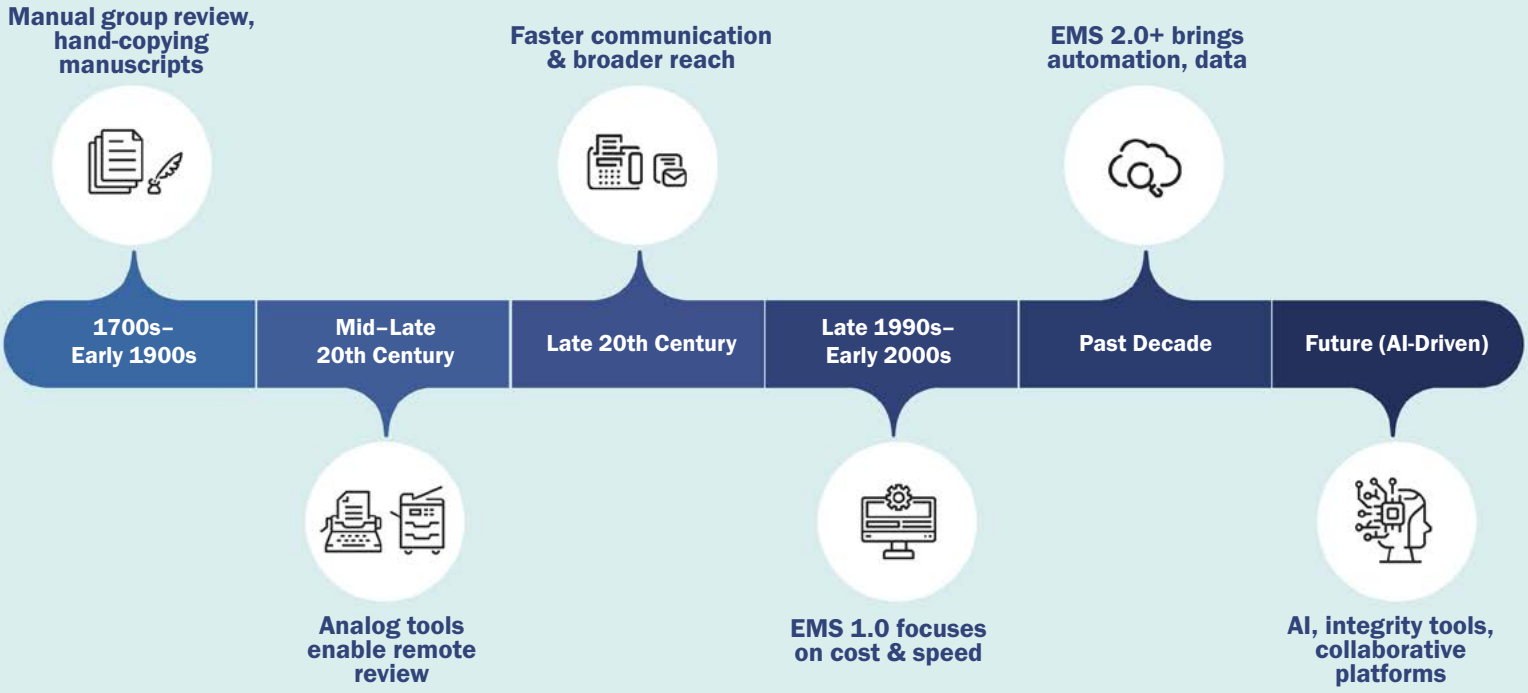

Figure 1: From Handwritten Reviews to AI-Powered Systems: The Evolution of Manuscript Management Technology

Technology has profoundly reshaped manuscript evaluation, peer review, and publishing, and this promises to accelerate over the next several years. Peer review has evolved from the group evaluation of a single copy—that, if accepted, required labor-intensive work for distribution—to near instantaneous replication and distribution at all phases of the process (Figure 1). After analog technologies such as typewriters and photocopiers first allowed external reviewers to evaluate manuscripts remotely, the advent of fax machines and email provided publishers and editorial offices with rapid communication and expanded distribution capabilities. The first electronic manuscript systems (EMS) were designed to capitalize on these new possibilities to vastly improve the speed of review and publishing practices while lowering costs (Tananbaum & Holmes, 2008[1]; Drozdz and Ladomery, 2024[2]). These systems also acted as a staff multiplier that allowed editorial professionals to focus on improving peer review and freeing up time for additional tasks. “In my own case, my journal office expanded to publishing a textbook, increased our ability to market the publications, and focus on research integrity and publication ethics.” (David Allen)

Product development through the late 1990s and early 2000s created EMS that could house reviewer databases and introduced automation to help manage editorial communication (Tananbaum & Holmes, 2008[1]). These systems also improved data collection to conduct more efficient reporting. The improved access to data offered insight into peer review bottlenecks, the ability to quickly compare and contrast new models for peer review, and the capability to evaluate options for launching additional journals. Over the past decade, current generation systems have continued to improve system automation and further expanded the possibilities for data collection, system customization, and modern peer review methodologies (Drozdz and Ladomery, 2024[2]).

This wave of technology from 25 years ago digitized the editorial workflow, taking paper-based processes and moving them into centralized, online databases resulting in faster processing times. Additionally, the scholarly publishing industry saw the emergence and professionalization of editorial office roles (e.g., managing editors, editorial assistants). Editorial office staff provide support in the day-to-day management of peer-reviewed publications, often serve as technical experts with EMS proficiency, and increasingly allocate time to journal strategy, workflow

efficiency, and research integrity. Tools that support editorial office staff free up staff time to provide better service to authors, reviewers, and editors.

As industry standards, trends, and best practices evolve, system technology has advanced to meet ongoing challenges and address concerns from the scholarly publishing community. The next generation of EMS promises artificial intelligence (AI)-powered, integrated tools for research integrity, papermill detection, expanded peer reviewer databases, and collaborative composition and peer review. These tools seek to reduce the burden on authors, reviewers, editors, and editorial staff and free up additional resources to improve and expand content and to provide enhanced customer service to support the individual needs of all communities involved in peer review.

Although continued development and improvements in peer review technology have evolved along with scholarly publishing industry standards and best practices, many parts of the peer review process can feel time consuming, redundant, and frustrating. A common complaint from authors is the tedious task of manually entering data and uploading individual files into an EMS, typically a new system they have not used before (and may never use again). New EMS technology seeks to improve this experience by allowing authors to collaboratively write their manuscript within the system or upload an existing document and then necessary metadata (e.g., author names, author affiliations, etc.) can be tagged automatically. During peer review, new EMS technology increasingly allows for reviewers to enter comments directly on the manuscript, similar to the commenting functionality in common word processing tools. Rather than manually listing a line and page number before each comment in a large text box, reviewers can place their comments directly in-line within the manuscript text. New EMS tools provide editors with improved functionality when searching for and identifying reviewers. Collaborative peer review technology allows editors to see the evolution of a manuscript from submission, revision, and final decision. Finally, EMS tools that help automate workflow steps and support daily operations gives editorial staff more time to assist authors, reviewers, and editors, manage special projects, and plan for and implement strategic goals.

The new generation of peer review technology seeks to disrupt the market. For decades, publications have relied on a handful of legacy EMS that provide the basic requirements for moving a manuscript from submission to final decision but may lack more innovative or agile capabilities to adapt to emerging trends. Emerging EMS technology and new players in the market are expanding the options available to journals and publishers for how their publications are managed. For instance, technology such as collaborative author composition and peer review promises insight into how manuscripts are written and revised and how a peer reviewer conducts the review.

Imagine a world where a journal office has data on how long it takes to revise a manuscript from start to finish or authors having the ability to interact with an editor while revising their manuscript in real time. Preprint servers already allow a public comparison between the manuscript and post-publication version that show how the manuscript changes due to peer review. The new technology may ingest a manuscript from a preprint server and track every change, comment, and version of the manuscript during the peer review process. This will have a direct impact on peer review evaluation, while providing readers with new ways to track and understand the impact of peer review and revision on a manuscript. Additionally, cybersecurity concerns, papermills, and generative AI heighten the need for new technology to protect the safety of institutional data and publisher reputation. These opportunities and challenges require EMS technology that is agile enough to accommodate shifts in editorial best practices while providing secure systems and defenses against bad actors.

The established systems on the market are aging and may be locked into older technological bases or suffer from an inability to adapt to workflows that are changing in response to Open Access movements, the need for greater engagement, research integrity and publication ethics concerns, and the expansion of AI. It is easy for journals to get stuck in a “we’ve always done it that way” mindset, and there are legitimate reasons that a process or procedure developed a certain way. However, because the scholarly publishing industry and the technological tools that support peer review are constantly evolving, it is important to regularly evaluate journal workflows, processes and procedures, and EMS technology. Ongoing evaluation and auditing increases staff efficiency, enhances the user experience, and improves market competitiveness. Although changing to a new EMS platform can be a challenging undertaking, adopting new technology that is agile and flexible provides opportunities for streamlining processes and addresses research integrity concerns that can lead to more innovation in peer review and a better experience for the entire community.

AUDITS AND TECHNOLOGY EVALUATION

Editorial management system (EMS) capabilities have grown at a rapid pace in recent years and the array of systems and features available can be overwhelming. It is important to regularly evaluate the system technology, internal workflows, policies, and procedures to maintain relevancy within the market. This may mean adopting new features that have been released by the current vendor or migrating to a new EMS. Necessity aside, such changes should be desired. Many EMS currently used by editorial and publishing offices should (and often can) do more. When EMS are optimized appropriately, they provide data to better understand trends, audience, and platform users. In addition to providing insight on journal performance such as turnaround times and acceptance or rejection rates, these data can drive targeted marketing campaigns and identify top contributors whose efforts can be highlighted to build customer rapport and repeat submissions.

Evaluating an existing EMS for improved value and functionality can also save money and improve efficiency and productivity. System providers continually update their software, adding new features, rolling out improvements to existing features, and sometimes making fee-based features free. These changes are easy to overlook in day-to-day business. A system audit can help identify unused features that might consolidate processes or replace other paid services, thus maximizing system use and budgets. The current EMS may already offer the solutions needed for maintaining and improving operations.

Shepherding manuscripts from submission to publication is time intensive, so minimizing the number of steps necessary to perform daily tasks can streamline the workflow and save time. When functionality and features are limited, staff must often create tedious workarounds to integrate emerging best practices. These can introduce repetitive actions such as conflicts of interest collection and porting submissions from third-party software. By effectively employing technology, editorial office staff are afforded more time for tasks that require human judgment. Editorial office staff could have more time available to support authors and editors, manage thorny integrity and ethical issues, and handle additional content such as new publications or special issues and collections.

These benefits can also be extended to authors by taking advantage of features that reduce time spent on the composition, submission, and revision process.

After decades of using the same EMS, it can be daunting to consider switching or even refreshing the current system. Through their work with clients, KGL identified five common concerns.

EMS Audits

Publisher provided systems:

KGL has experience negotiating with publishers during contract renewals and/or assisting negotiations to change systems.

Data retention:

KGL has experience in the retention and extraction of data and how to best prepare clients for change.

Transitions:

KGL has experienced consultants able to assist in managing a transition including workflow analysis and user training.

1 What if our journal uses a publisher-provided editorial management system?

Many scholarly societies contract with large publishers who may provide an EMS. Are these societies locked in with a limited ability to adapt editorial workflows based on the changing needs in the industry? Publishers may be willing to accommodate EMS changes. This is especially the case if the expense is close and the switch can help retain business. Even if they aren't willing to negotiate now, access and payment to an alternate EMS should certainly be considered in the next contract negotiation, particularly if the provided system fails to address the society's mission and goals. Additionally, some publishers have begun restricting the type of articles that may be submitted to a journal. This makes it easier for their systems and production services to handle, but is that the right decision for your publication? (Horbach and Halffman, 2020[3])

2 What about the data; will data be lost if we switch systems?

No, newer systems have gotten much better at importing old data to the point where much (if not all of it) can be maintained when transitioning to a new EMS. However, this can be an important point for editorial offices to consider: why do they wish to retain so much data? Are all of the data necessary? Are all the data used now, and will they be used in the future? Publishers likely will question this as well. How much historical data needs to be transferred? Consider that metadata such as PDFs, peer reviews, manuscript history, trends, and timelines can be extracted and transferred to a new system, which could save on considerable storage and maintenance resources rather than transferring all historical data. Regardless of the decision, data retention and transfer need not be a major barrier when migrating to a new EMS.

3 What if we're hesitant to change systems or our workflow?

Hesitation to change EMS can have several sources but common factors are a lack of enthusiasm for adapting new technologies, a "we've always done it that way" mindset, the view that the older systems may lag in usability but the newer systems may lag in stability and flexibility, and the time involved in an EMS transition that would be disruptive to daily operations. When managing a heavy workload and the pressure to keep things moving, it can be difficult to justify the time to migrate systems, learn the new one, and then train users. Unfortunately, putting off an EMS migration may cost more in the long run as workflow inefficiencies persist and the gap in platform abilities grows. This affects internal and external users and could encourage authors to look at competitors when considering where to submit their manuscript.

To overcome hesitation, solicit buy-in by identifying author, reviewer, editor, and staff pain points and time sinks within the current workflow, ask the current vendor if they have solutions, and investigate potential solutions offered by other systems and/or third-party applications. Interviewing those who routinely use the system is a first step for KGL when consulting on EMS migrations. It improves the workflow as well as reassures internal and external users that their time will be respected and their needs addressed.

4 How do we know what changes need to be made and how to make them?

Everyday use of a system does not necessarily allow a user to gain an in-depth knowledge of its full capabilities. Vendors regularly introduce new technologies and features that take time to evaluate and potentially incorporate into existing workflows, and rollouts of new technology releases are not always communicated regularly. Third-party experts with technical knowledge of systems, such as KGL, can help save time and money by performing a system and workflow audit to ensure that the existing EMS functionalities are maximized. These audits also offer an opportunity to evaluate existing policies and procedures. Pairing these types of audits with other transitions such as a change in editorial leadership or contract evaluations and renewals can better align strategic goals and future visions for the publication(s).

5 What if the resources available for migration are limited?

Fear of lost time during an EMS transition and uncertainty regarding where to begin are compounded by the number of resources necessary for choosing and migrating to a new system (if applicable) and training editors and staff on an updated workflow and new platform. It takes considerable effort and knowledge to learn about and evaluate alternate systems, conduct requests for proposals (RFPs) from providers as well as to develop training materials, lead training sessions, and address follow up questions.

This is another area where the most effective solution may be to use industry experts who can manage any part of or the entire EMS evaluation and migration process. From soliciting and evaluating RFPs, to performing the migration process and developing and sharing training documentation, experts like KGL may alleviate the burdens of an overwhelming EMS or workflow transition.

EMS TECHNOLOGY INNOVATIONS

EMS technology is undergoing rapid innovation after a period of steady continuous quality improvements (Figure 2). The innovation comes as established systems have been consolidated under major publishers and other service providers, a growing need for enhanced research integrity checks, new open access and read to publish models, AI, and continued changes to traditional funding sources. These innovations will be crucial to future peer review efforts, and time for adoption is rapidly approaching.

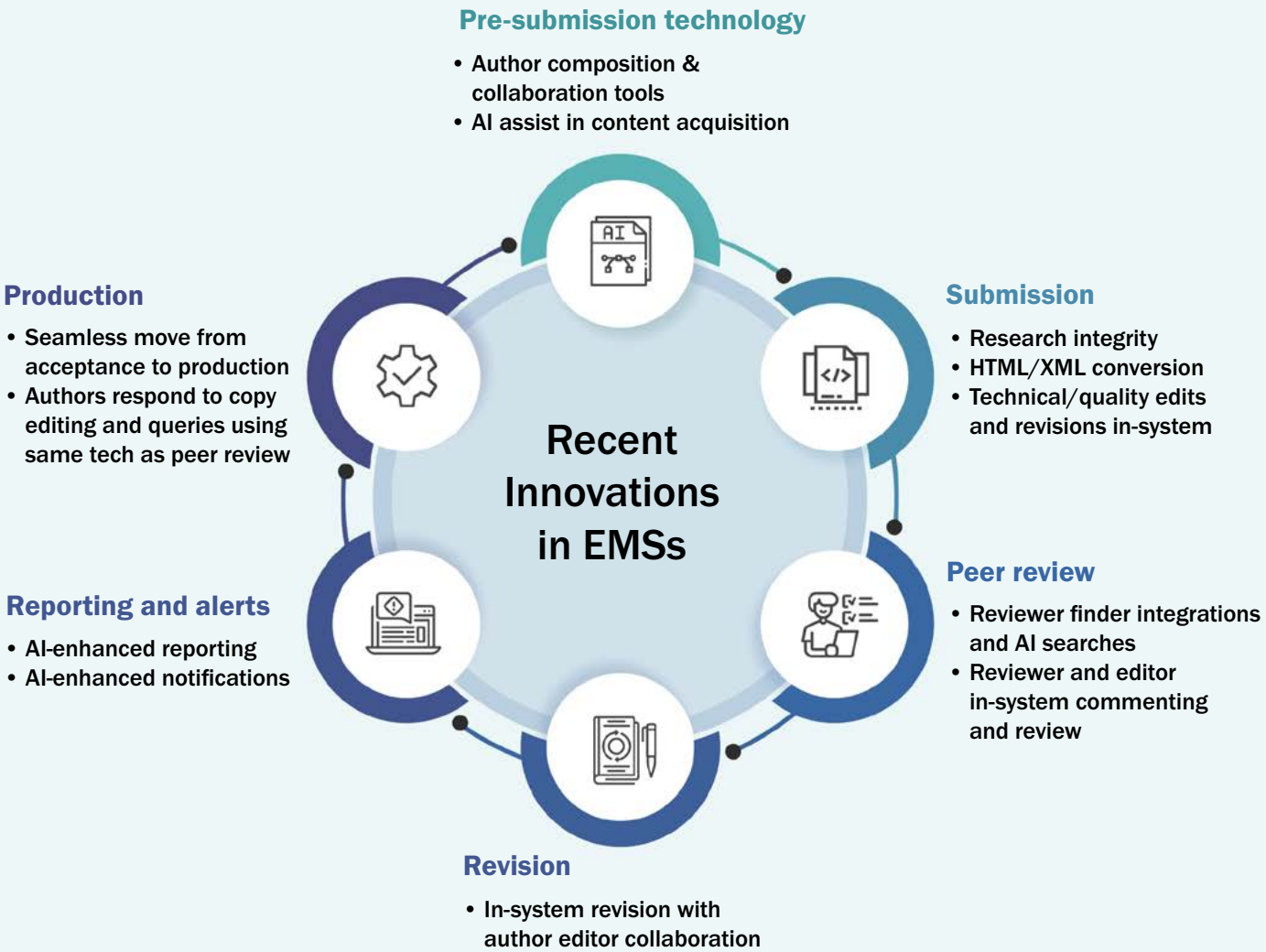

Figure 2: Recent Innovations in EMS

Third-party integrations

EMS offer third-party integration to external databases (ORCID, Web of Science Researcher Profiles, Open Funder Registry, DataSeer, Clear Skies, etc.), advanced tools (e.g., to detect AI writing, papermills, plagiarism, image manipulation, integrated reviewer finder tools such as Global Campus and Prophy), and servers (e.g., preprints) that can improve user experience, reviewer satisfaction, and research integrity.

These integrations allow considerable workflow customization and improve the ease with which new standards can be implemented. Unfortunately, the integrity of databases and tool algorithms (increasingly AI themselves) are not guaranteed, and integrations often come at the cost of additional fees from the third-party providers (Kousha and Thelwall, 2024[4]).

Composition and collaboration

An increasing number of EMS offer direct viewing and editing of manuscripts within the system platform. These tools convert submitted manuscripts for viewing and commenting to an online environment that allows changes to the manuscripts as well as online, collaborative peer review, commenting, and revision functionality. These systems enable reviewers to identify issues in-line that both authors and editors can respond to directly, thus facilitating dialogue and collaborative discourse.

Although these systems might encourage overly detailed or specific comments from reviewers, the greatest obstacles to the adoption of these models will be concerns from authors, reviewers, and editors regarding hesitancy to adopt new technology, potential for less impactful peer reviews, or that the requirement to be online could restrict their offline working capabilities and that their work, now at the mercy of server connections, might be lost in the midst of a working session (Sarker et al, 2023[5]).

Submission-to-publication platforms

To further streamline peer review workflows, some EMS vendors have developed platforms that encompass the full life cycle of manuscripts from author drafting and composition to submission, peer review and revision, and on to publication and hosting. Many of these innovations are modular and may be used in conjunction with an existing system. A full system migration does require initial investments for the upfront cost and a learning curve for all users. However, an “all-in-one” platform reduces the need for data transfers between systems and allows for increased oversight and data collection to identify and improve workflow bottlenecks.

Finding the right fit

Whether it is improved workflows and day-to-day productivity or understanding how to implement a new step in an existing process, the appropriate EMS can enhance the peer review and publishing experience for all involved parties. Unfortunately, finding and implementing the right fit can be a resource and knowledge intensive process. This is amplified by the rapidly changing landscape of technology and the scholarly publishing industry that requires awareness of, if not direct responses to, pressing issues raised by evolving practices and standards as well as the security of perpetually connected systems. Fortunately, technology can be used to create an infrastructure that supports the continual evolution of the scholarly publishing and academic research industries.

Using expertise accumulated over decades of experience in evaluating, customizing, and transitioning EMS, KGL can help editorial offices and publishers find the right fit for their needs that optimizes EMS technology to support a streamlined, efficient, and cost-effective peer review process.

Improving an existing system

Situation

An existing workflow (Workflow 1) for managing the peer review of manuscripts had been in place for about two years. Workflow 1 had been inherited from a previous peer review vendor and implemented for a different EMS. At the start of the project, Workflow 1 had been developed by the team's editorial office staff in collaboration with the new EMS vendor and based on the original expectations the client provided. Although Workflow 1 served the basic purpose of moving submissions through the peer review process, there were complexities that were not originally accounted for in the initial system setup resulting in time consuming, manual workarounds and a poor user experience.

Due to numerous factors including changes in personnel, the release of new EMS features, and a better understanding of the client's needs, a decision was made to develop a new workflow (Workflow 2). Through a collaborative approach and full workflow audit, the resulting Workflow 2 streamlined the peer review process by reducing the number of times a manuscript was returned to the authors and reducing the number of rounds of revision; integrated new EMS features for improved productivity; and provided a smoother user experience for all involved.

Workflow and process audit

At the beginning of the workflow audit, KGL solicited input from the client team, authors, editors, reviewers, and editorial office staff to understand individual needs and preferences. Feedback was directly requested via meetings and email questionnaires, and KGL also considered ad hoc feedback that had been received over time. Additionally, changes in personnel and the composition of the Editor team resulted in an overall modification in how the peer review process was conducted. Certain roles and responsibilities for which Workflow 1 was originally developed could no longer accommodate these changes. Over time, certain steps of the original process became redundant, which reduced efficiency and increased the potential for confusion and delays. Finally, editorial office staff experience with the client's needs, the peer review process, and the EMS along with collaboration with the EMS vendor resulted in the development of new EMS functionalities and features that needed to be integrated.

Transition and launch

Over a period of 6 months, KGL worked with the EMS vendor to develop a custom workflow that addressed the client's needs, integrated new EMS features, and improved the user experience for authors, reviewers, editors, and editorial office staff. In addition to rebuilding the workflow to align with the bespoke process required by the client, KGL redesigned custom forms to include instructions and helpful resources for authors, reviewers, and editors using the system. A transition and launch plan were implemented and training materials and new process and procedures documentation were created. After an initial transition period, manuscripts processed using Workflow 1 were phased out and new manuscripts were submitted using Workflow 2.

Results

The new workflow met the client requirements for a custom peer review process. Feedback since the launch of Workflow 2 has been generally positive with editors especially noting reduced confusion on how to complete tasks. The client was also pleased by the agility of the EMS and the ability of the custom workflow to account for one-off scenarios. Eighteen months after Workflow 2 was launched, the number of times a paper returned to the authors was reduced by 50%. Additionally, prior to implementing Workflow 2, 90% of papers

went through multiple rounds of revision (e.g., R1, R2, R3). Eighteen months after Workflow 2 was launched, 50% of papers now only go through one revision (e.g., R1) before a final decision. Although further development and continuous quality improvement efforts are ongoing, the overhaul and launch of the new workflow was a success.

Migrating to a new system

Situation

A large, established client with more than 50 independently operating publication teams (100 managing editors, 1,000 editors, and 100 content specialists) used a custom-built EMS comprised of commercially available technology adapted by internal developers. Varying workflows, standards, and content management methods across publication teams made it difficult to compare and manage publisher-wide data. The client wanted to standardize the workflows and quality across teams as well as have centralized reporting methods to understand and improve editorial operations. KGL undertook a systematic review of the current technology, surveyed and led calls with every publications team, and provided reports and recommendations based on what was discovered.

Evaluating options

In search of a new solution, KGL issued an RFP on behalf of their client to 12 system providers. After careful review, the client shortlisted three whose proposed workflows met the client's needs. Ultimately, instead of commissioning a new system as they originally suspected they would, the client chose a commercially available, feature-rich system adaptable to their needs.

Migration and training

KGL began the 12-month migration process by interviewing management teams as well as individual editors and staff to better understand their needs and processes. This feedback was incorporated into a centralized workflow that included new submission forms, email templates, and operating procedures. In addition to building and testing the client's new workflow, KGL composed a detailed operating manual and built a customized training website to support live demos and training sessions for each team. Finally, live launch-day sessions were held with each team to ensure a smooth transition to the new system.

Improvement

KGL managed the full migration of 50 publication teams to a single, centralized system, from reviewing RFPs to training and onboarding staff. Within the first year of the transition, the client saw a 4-month reduction in the time from submission to publication.

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