Others Section

mSPECTRA: Email Management System of *The Journal of Clinical and Diagnostic Research*

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ABSTRACT

In an organisation with multiple departments and division of labour, email management becomes a daunting task, and choosing the right email allocation system significantly impacts the success of business communication. Although various webmail services and email client are available, mSPECTRA was developed at Journal of Clinical and Diagnostic Research (JCDR) to meet the key requirements of the company. mSPECTRA is an easy-to-use web-based email management system integrated in manuscript database portal and database resources that helps to effectively manage, track and respond to the large influx of emails.

INTRODUCTION

In the age of instant texting or messaging, the originator is usually impatient and wants a prompt response. In academic publications, emails are preferred mode of written communication. Email response timings are an important part of keeping authors and colleagues satisfied. Even slightest delay in the response often leads to upset clients or loss of prospective clients. For business emails, while 24 hours is the acceptable response period, people usually expect and appreciate a response within a few hours [1].

Conventionally, a person emails at an individual's personal or company assigned email ID, and the receiver responds at the sender's address. However, communication via personal email is not always preferred since it can lead to security violation due to breaches, data leaks or deletions.

Large scale companies' email support teams have ticketing system to manage their incoming email traffic. In ticketing system, for raising a new query the individual either needs to login into the registered account or create a new account. For every new query email sent to a defined server, a unique ticket number is generated, and any communication regarding the issue is carried out under the same ticket number. Once resolved, these tickets can be closed by either party. Tickets can be reopened if either of them has any follow-up or additional questions or requests [2]. Apart from ticketing system, different companies use different set of webmail services and email clients for email management [3].

To circumvent any delay in responding an email, eliminate diverse response for duplicate emails, and boost productivity a smarter email segmenting system "mSPECTRA" was developed at JCDR. mSPECTRA is acronym for the mail-dashboard that stands for mails of Subscription, Publication, Editorial, Copyright, Technical, Reviewer(s), and Accounting department. mSPECTRA is a user-centered web-interface that can both automatically or manually transfer emails to concerned employee or departments based on the manuscript number or content of the email.

Function Outline

For submission of manuscript, the new author needs to create an account on the journal's "Manuscript Management Portal", while returning author(s) can simply login by using their active IDs. Once the account is created, the author (s) are redirected to their author's dashboard from where they can submit new manuscript, check

post-submission status, view manuscript instructions, download title file and copyright forms layouts, pay publication charges, schedule a telephonic appointment or contact any department via email [4]. mSPECTRA is an integrated user-interface of "Manuscript Management Portal" that assists in managing the high volumes of inbound emails received each day.

mSPECTRA helps to maintain a multi-channel communication system that allows the author to email either via their author's dashboard or from webmail services like Gmail or Yahoo. All the incoming emails are added to conversation thread/ mail trail, and then transferred to concerned personnel for further correspondence.

1. All the emails sent via the system are automatically routed to concerned department/personnel's mail dashboard.

2. Emails sent to different aliases of '@jcdr.net' domain via webmail services are received at SPECTRA (G Suite). These emails are imported to the local server from where they are parsed to mSPECTRA.

In IT department, the emails from business email id SPECTRA@jcdr.net are downloaded using "Thunderbird" placed on VPS server and exported in EML format to the mail dashboard mSPECTRA [5].

At the administrative level, the emails are categorised and then sorted. Duplicate emails are deleted and faster processing services, withdrawal and refund emails are resolved on priority. This initial filtering and deletion of duplicate emails lighten the email load in cases where the author sends the same email to company's multiple email addresses.

The editorial emails where the manuscript number is mentioned in the subject, are automatically uploaded to the manuscript email thread. For emails without manuscript number or email from any of the co-authors(s) mentioned in the title page, customised filters are used to track the manuscript number by sender's address. Once identified, the manuscript number is added, and the email is then transferred to the concerned editor or defined owner for query resolution [Table/Fig-1].

While the basic process remains the same, different types of email are sorted and responded at different levels, for example:

1. Inquiry emails by prospective client or returning author (with no active manuscript number) received at SPECTRA are directly viewed and responded from mSPECTRA at administrative level [Table/Fig-2].
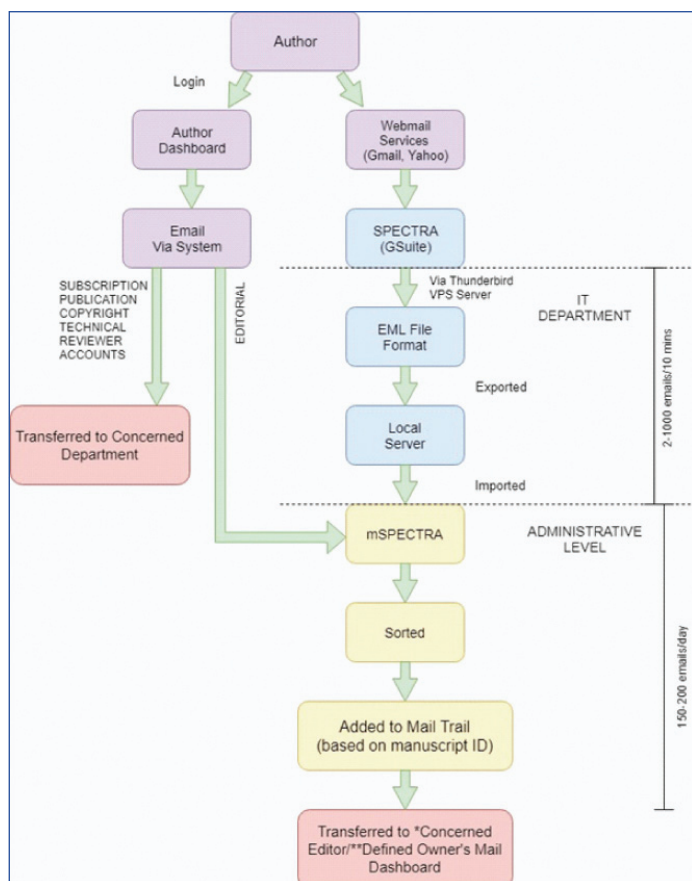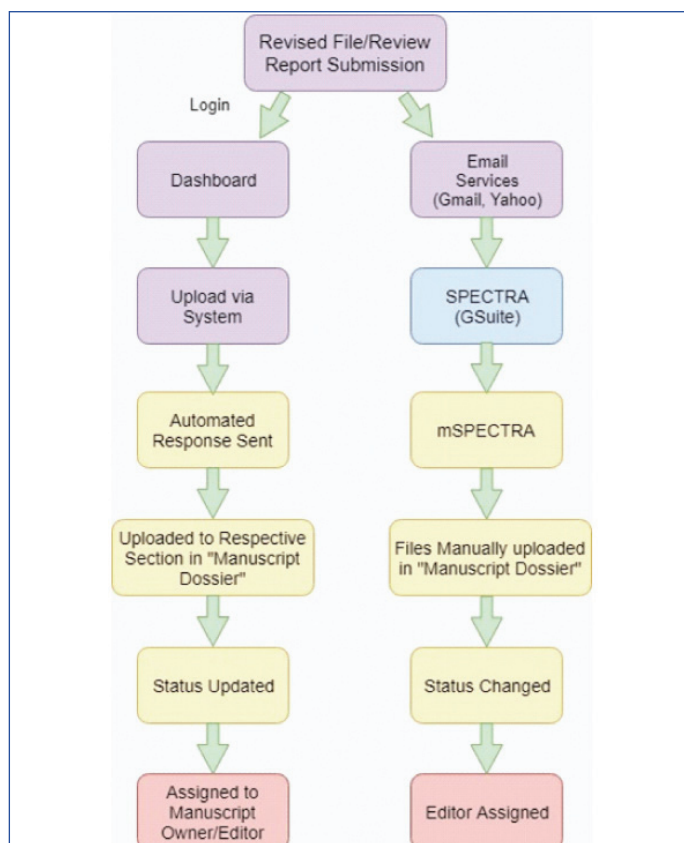
[Table/Fig-1]: Process of email allocation.

*Assigned Editor is the person who is working on the article at a particluar point of time in pre-publication or press or post-publication phase;

**Manuscript Owner is the subject specialist from the editorial department, who works on the manuscript until it is accepted
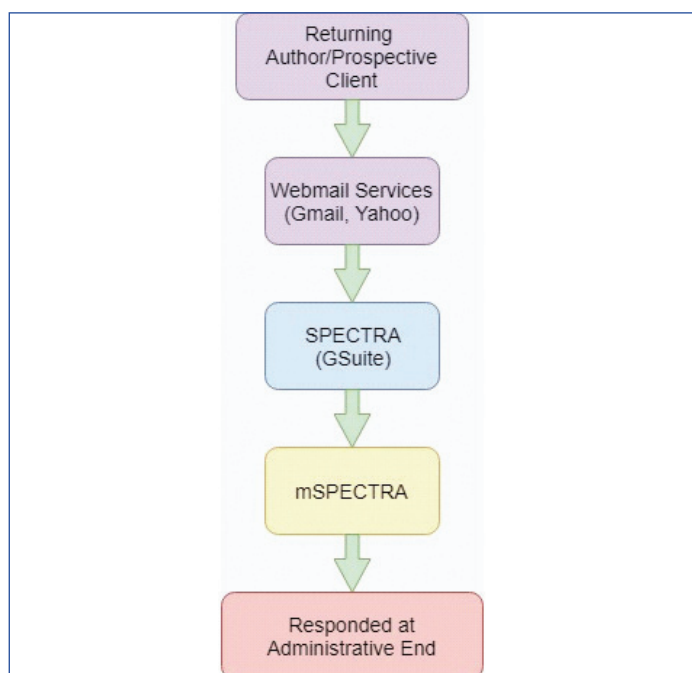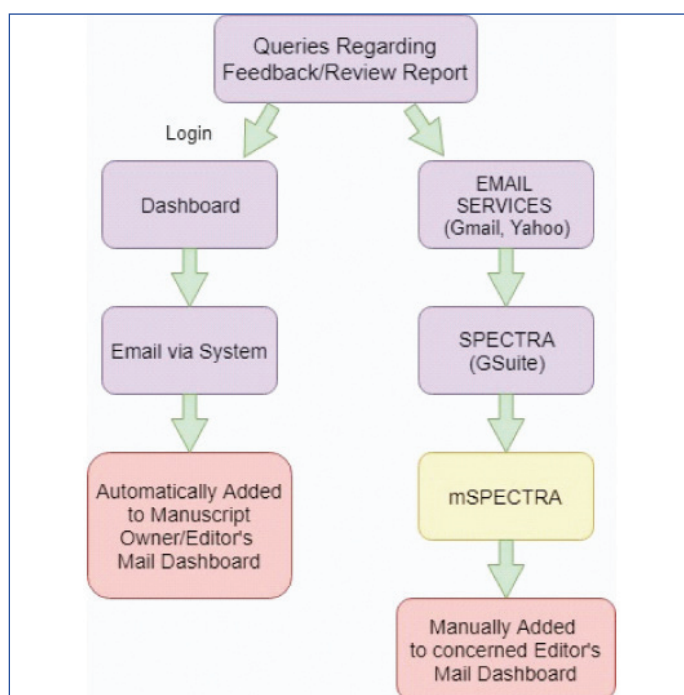

[Table/Fig-2]: Inquiry email resolution.

[Table/Fig-3]: Peer review-report or revised file submission.

[Table/Fig-4]: Emailing queries regarding feedback.

2. Revised files and peer-review reports can be submitted by the author(s) and reviewer(s) in two ways: files submitted via the system are automatically uploaded to their respective sections and the status of the manuscript is updated to "Revised Manuscript with Editor" or "RR Ready". The files submitted through webmail services are manually uploaded via mSPECTRA, following which the status is changed and the files are assigned to the concerned editor or defined owner [Table/Fig-3].

3. In case, an author has queries about the uploaded feedback/review report, he/she can directly email us via the "Email" option available on their author's dashboard. Like ticketing system, these emails are automatically forwarded to the manuscript owner or editor's mail dashboard (in this case, both will be same) based on the manuscript number. However, if the author emails via an email server, the emails are manually transferred using mSPECTRA [Table/Fig-4].

mSPECTRA User Interface (UI)

It is highly responsive and has a consistent and simple design that facilities allocation and tracking of emails [Table/Fig-5]. The main feature of mSPECTRA is the need-derived customizable filters that help categorise and sort emails on the basis of:

1. **Mail ID:** On receipt of an email, a unique ID is automatically

[Table/Fig-5]: Screenshot preview of administrative level mSPECTRA user-interface.

generated and assigned to the email, which can be used to directly search and view the email, reply to the author or track the status of the associated manuscript.

2. **Article number:** It is the numeric ID generated at the time of submission of the manuscript. Any authorised personnel can use this ID to search and view all the corresponding authors, co-author(s) and reviewer(s)' emails associated with the manuscript. Using an additional "Include Sent Mail" filter, all the emails sent by different departments [to any corresponding or co-author(s)] can also be viewed in the same window.

3. **Subject:** Emails can also be tracked on the basis of the complete subject or keywords mentioned in it.

4. **Owner:** When an email is transferred to concerned personnel or team, he/she becomes the "Email Owner" and works on them until the query is resolved. At the administrative level, emails can be viewed using "Owner" filter, which displays all the Read, UnRead, InProgress, Sent and Done emails of an employee.

5. **Article owner:** Based on the specialty the manuscript is assigned to a specialist in the editorial department, who serves as the article owner and assigned editor until acceptance. After acceptance, the assigned editor changes depending upon the stage of pre-press phase while the article owner remains the same. For a particular article owner, all the emails (sent to any department) associated with different manuscript in different stages of publication can be viewed together. This feature was especially designed to tidy up owner's work dashboard when the manuscript is either sent for peer-review or the review-reports/feedbacks are posted.

6. **Assigned Status (AS):** Emails can also be viewed on the basis of manuscript pre-press, press and post-press status.

7. **From:** Emails from a specific email ID associated with different manuscripts in different stages of publication can be easily viewed together. It is the Unique Selling Proposition (USP) of mSPECTRA that helps in resolution of post-publication or any serious conflict issues at senior editors' or Chief Editor level.

8. **Priority:** Emails related to faster processing services are allocated a priority tag and are sorted immediately.

9. **Tag:** Need derived customised tags are created and assigned to individual emails, and all emails with the same tag can be viewed together. Example: For a job vacancy for a particular post, all the application emails received can be tagged as "Editorial Post Applicants-2018". After a year or so these emails can be directly viewed using this filter.

10. **To:** This filter displays all the emails of the selected recipient department.

11. **Notes:** Every email has a "Free Text Area" where notes or messages can be added for future references. Emails with standard keywords can be viewed together using this filter.

12. **Date range:** Emails received within a specific span of time can be viewed using "FROM- TO" date range filters.

13. **Mail by text:** Filters the email on the basis of "search term" mentioned in email's body or subject.

14. **Sent:** Emails from the same sender address can also be viewed together.

15. **Done:** Once the query is resolved, the status of the email is updated to "Done", following which the email is removed from the mail dashboard; however it can be still viewed in the manuscript mail trail.

**In order to save time, multiple filters can be applied at once to narrow down the resultant emails.

Email filtration is the primarily step of all standard business process to organise emails according to specified criteria. Email filters have varying degree of configurability, simple tags and added features that notably reduces duration of real-time search.

Added Features

- At the administrative level, self and individual employees' number of Read, UnRead, In Progress and Total emails are also displayed in multiple fields. This feature allows the supervisor to easily monitor the number of pending emails and resolution status of emails assigned to different employees [Table/Fig-6].

- In the resultant grid view, each email has a "Preview" section that displays the beginning section (100 words) of the email. Using this feature, multiple emails can be viewed, compared and sorted simultaneously, without loading or opening them in separate tabs.

- Bulk Edit and Single Row update option are available which helps in assortment of emails on the basis of Editor, Priority, Tag and Mail Status. For instance, all the emails regarding copyright can be selected and transferred to 'Copyright Department' at once by using 'Bulk Edit' option.

- Easy Label and Tag creation, ADD note or Unique Number (U.N.) also helps manage and search emails.

- Instant response can be sent using "Reply 2 Author" option.

- The attached file (s) in email are directly uploaded to the

[Table/Fig-6]: Mutiple fields in mSPECTRA delineating Read, UnRead, InProgress, and Total emails of all employees.

"Manuscript Dossier" provided that manuscript ID is mentioned. This feature eliminates different steps of downloading and re-uploading the attachments, and is highly beneficial for transferring high resolution heavy pathology images.

- Separate "Notes" added to individual emails are extremely helpful for recruitment, marketing and subscription email management. List of the content of an email can be mentioned in the notes for discussion with supervisor.

- Emails' transfer history can also be viewed to determine the exact time and date when it was added to an employee's mail dashboard. In case of delayed response, this features helps in tracking the accountable employee.

Based on the functioning and available features, mSPECTRA can be defined as an organised communication channel that allows the user to access and view all emails from a single convenient online web-interface. It manages the email overload and serves as a platform to view all emails, sort emails by tags, delete duplicate mail, add notes to emails that could be attended later and respond to the urgent ones.

mSPECTRA uploads all manuscript related emails into a centralised location, making it easier for both author(s) and administration to view the complete mail trail in a continuous format. Here, all the emails associated with a particular manuscript are displayed in chronological order of date and time. This feature is extremely useful in reviewing the information of a query and providing faster resolution. In case, any email is overlooked, both the parties can refer to the mail trail at any point to settle the issue.

Another major issue that any administrator faces is protecting corporate data when an employee leaves the company. Deactivating ex-employee email account, backing up of data or ownership transfer to a new employee becomes a tedious and time-consuming task. In order to prevent data theft, former employee's access to their mail dashboard is simply disabled. This guarantees that the departing employee will not receive any emails once they have left the company. Moreover, availability of all correspondence emails of a manuscript, at a single location, makes them accessible to employees with authorization, and prevents loss of data or any delay in response. This feature also adds transparency in the workplace and allows the supervisor (s) to monitor the progress and status of all the emails. It enables the supervisor to identify the cause of delay. In case, an employee is on informed leave, this feature also helps in tracking, resolving and transferring of the pending generic emails.

mSPECTRA also helps maintain an omnichannel emailing system. An author has the freedom to communicate via email option available on their author's dashboard or email at our respective department's email ID from any of the webmail services such as Gmail and Yahoo. All the incoming emails received at the single server are transferred to the concerned employee or department. These emails from either channel are then sorted and responded based on the date and time when they were received. Once resolved, the emails are removed from the email list to help declutter employee's mail dashboard.

Apart from these salient features, some of the benefits and drawbacks of the mSPECTRA based on functionality and attributes of user-interface are listed in [Table/Fig-7].

For the present review, an internal survey was conducted where the employees from different departments were asked to rate the pros and cons of mSPECTRA on a Likert scale of 1-5 (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree) based

Pros	
Ease of use	Gives full control and freedom to the operator. Both emails and SMS can be sent from the same interface.
Accessibility	Email threaded conservation, contacts, and email templates can also be easily maintained.
Data archival	Availability of emails at a single location eliminates the hassle of backing up data of an employee leaving the company and transferring it to a new recruit.
Response time	Emails are consolidated into individual thread based on the manuscript number that leads to a faster resolution.
Notes	Separate notes can be added to each mail, for future reference or correspondence among departments.
Security	Customizable modifiers limits access: Since it does not give complete access to any single employee, it is highly secure.
Storage	Transferring of email instead of forwarding prevent the creation of duplicate copies and ultimately saves server storage space.
Higher level management	At a glance, supervisors can check the status of the emails and who has worked on them.
User-defined filters	Filters can be added or modified internally as per the requirements.
Cons	
Accessibility	Push notification service is not available.
Time lag	SPECTRA is synced twice a day and therefore there is a 2-3 hour time lag between the time the email is received and when it is available on the editor's dashboard for correspondence.
Special character support	Does not support specialised/foreign characters/fonts.

[Table/Fig-7]: Pros and Cons of functionality and user-interface of the mSPECTRA.

PROS		CONS	
Parameters	Value (1-5)	Parameters	Value (1-5)
Ease Of use	4.2	Accessibility	3.7
Accessibility	4.1	Time Lag	4
Data Archival	4	Special Character Support	4.7
Response Time	4.2		
Notes	4		
Security	4.1		
Storage	4		
Transparency	4		
User-defined filters	4.1		

[Table/Fig-8]: Functionality and Features' Employees' ratings (n=23).
Likert Scale: 1-Strongly Disagree; 2-Disagree; 3-Neutral; 4- Agree; 5- Strongly Agree

on their efficiency and effect on day-to-day work [Table/Fig-8]. From the average ratings of various features, it can be concluded that mSPECTRA is a user-friendly interface that helps manage and find emails and thus lowers response time, but lack of special characters support limits its usability.

Though large institutions and companies use more accessible and sophisticated email management system, there is still lack of documented literature. Despite availability of various commercial email management systems, mSPECTRA was developed for effortless functioning of the publication house. The customizable features and tag in mSPECTRA can be easily modified to keep in pace with the technology and combat any management challenges that might come along the way.

Pipeline Work
Based on the employees' feedback, national and international manuscript emails will be distinctly demarcated, faster processing manuscript (on priority) emails will be accentuated and pop-up

reminder system will be incorporated to notify the employee about UnRead emails that have not been addressed in 3 working days. These changes will not only help in improving the interface but will also increase the overall productivity.

Additionally, the author(s) are open to suggestions and feedback from the readers and individuals working in the same field.

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AUTHOR DECLARATION:
• Financial or Other Competing Interests: No
• Was informed consent obtained from the subjects involved in the study?   NA
• For any images presented appropriate consent has been obtained from the subjects.   NA

PLAGIARISM CHECKING METHODS: [Jain H et al.]
• Plagiarism X-checker: Sep 03, 2019
• Manual Googling: Sep 14, 2019
• iThenticate Software: Sep 18, 2019 (7%)

ETYMOLOGY: Editorial