

## Multi-Recipient Action Based Tapping in Email Communication



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### ABSTRACT

Technological improvement proposed through this paper represents an end to end multi-recipient multi-action (ASAP action items, regular action items and follow-up) solution through which an email sender can tag intended recipients to whom an action item is assigned, amongst multiple other recipients in a single email itself. With the logic proposed in this paper, the sent email will appear visually different in each recipient's mail box depending on whether any actions are associated with specific recipient or not. This is achieved by associating unique tapping icons which represents an action item with a recipient. Color codes are also proposed in the icons, in order to provide a visual representation communicating urgencies and importance associated with the specific action item with respect to specific recipient.

### KEYWORDS

Communication, Electronic mails, Enterprise.

### INTRODUCTION

As per a survey [1] [2] conducted by Radicati Group, Inc., number of email account holders and the number of business emails [3] floating across the globe is increasing rapidly and is expected to raise from 108.7 billion emails sent & received per day in 2014 to 139.4 billion emails sent & received per day in 2018. Refer Table1.

Daily Email Traffic	2014	2015	2016	2017	2018
Total Worldwide Emails Sent/Received Per Day (B)	196.3	204.1	212.1	220.4	227.7
% Growth		4%	4%	4%	3%
Business Emails Sent/Received Per Day (B)	108.7	116.2	123.9	132.1	139.4
% Growth		7%	7%	7%	6%
Consumer Emails Sent/Received Per Day (B)	87.6	87.9	88.2	88.3	88.3
% Growth		0.3%	0.3%	0.1%	0.0%

Table 1: Worldwide per day email traffic (2014-18)

In 2014, the majority of email traffic comes from the business world, which accounts for over 108.7 billion emails sent and received per day. Email remains the most common form of communication in the business space. Email use is growing in the business sector and by 2018, business email will account for over 139.4 billion emails sent and received per day.

The other interesting data is the number of emails sent and received per person per day. As per the research data, number of

the business emails received per person per day will grow from 85 in 2014 to 97 in 2018 (See Table 2).

Business Email	2014	2015	2016	2017	2018
Average Number of Emails Sent/Received per	121	126	131	136	140
Average Number of Emails Received	85	88	91	95	97
Average Number of Legitimate Emails	75	77	79	83	83
Average Number of Spam Emails*	10	11	12	12	14
Average Number of Emails Sent	36	38	40	41	43

Table 2: Business emails received/sent per person/day (2014-18)

While recent other flourishing modes of communication like social networking sites, instant messaging etc., are gaining more penetration, emails still remain the most used form of communication in business and corporate stream. While in-person meetings are helpful in discussions, decision making, allocating action items etc, most of the follow ups and updates are being done through Emails. Above report suggests, out of the large number of mails received by any user or person some of them are spams, which can be filtered based on certain criteria's like filtering by sender, specific keywords etc. Out of the rest emails again not all are equally important to him. Some of them may have actual action item for him, some may be reminders, some may be FYI or some may be mere general notifications.

The situation becomes more complex when two project teams works in different time zones and hence exchanging emails almost 24x7. In such a situation where a person is receiving large numbers of emails throughout day and night, it has become very important to design some technique to reduce his time spent on sorting these mails, and searching for some real actionable emails. Not just actionable, proposed solution helps him prioritize his emails depending on the type of action or task assigned to him in the received emails.

Let us discuss the problem statement in detail.

### PROBLEM STATEMENT

An Email Sender (say User A) plans sending an email to project distribution group email list (carrying 20+ team members), capturing project status information, future plan, action items etc. In addition to regular content of the mail, User A assigns action items to person B and D. Email Sender (A) now has the dilemma if he should mark the email with "high importance" or not? Marking "high importance" will give message to recipients that the email is important and they should look at it without

fail. But, sender (A) also knows that it is of high importance for person B and D because they have an action item associated with their name in the mail, but not really a high importance mail for everyone in the distribution list because for rest of the team members this is a simple informatory mail.

In addition to Sender's (A) dilemma on how to ensure a single email communicates different message to different recipients in a single distribution list, when the email reaches the recipient's mail box all recipients (B, C, D, E, F, G, H, I, ..., X, Y, Z) also have certain challenges associated with the email and these are:

- 1) If mail is marked important, each one of them (B, C, D, E, F, G, H, I, ..., X, Y, Z) scans the mail content with a thought that there is highly important material in the mail. In above case, they will not find "high importance" content for them (excluding B, C, D).
- 2) If mail is marked important, each one of them (B, C, D, E, F, G, H, I, ..., X, Y, Z) scans the mail content with worry, inquisitive thought if there are any action items assigned to them. In above case, they will not find any action item for them (excluding B, C, D).
- 3) If not marked important, each one of them (B, C, D, E, F, G, H, I, ..., X, Y, Z) might not read the email content on urgent basis. This will result in "B, and D" missing knowing their action items immediately.
- 4) More and more people are now accessing emails on mobile phones. On smaller screens, like Blackberry, Mobile phones etc, reading email includes scrolling to the bottom. Reading the mails by scrolling up and down in all above three scenarios and then finding out no relevant material for C, E, F, G, H, I, ..., X, Y, Z will actually be a time loss for them.
- 5) If a person is on PTO and will check mails only after say 1 week. There will be large number of unread mails in his mail box say around 350 mails. In such a case he would like to scan the mails in order of importance. In this example if A has marked mail as important, everyone (B, C, D, E, F, G, H, I, ..., X, Y, Z) will check this mail expecting it requires their attention, which actually contains action item for only B, C and D. The users other than B, C and D will be disappointed in investing time on this mail when there may be some others crucial tasks intended for him lined below in the mailbox.

People want methods where they can get quick communication on the content if there is anything specific/waiting for them or not. Time is the key, people want to save time, and they want to spend time only on areas which are meant for them.

These above mentioned challenges in traditional email workflow, motivated us to think of a new solution that can effectively handle -

- 1) "Assigning" action items with different urgencies to "multiple" persons within a "single" email
- 2) Communicating and Display "unique" "recipient-specific" messaging to each "tapped" recipient even when the email is "same" for all recipient.

"Tapping" word here signifies knocking on someone's door, querying for something.

## EXISTING SOLUTIONS

There are no dynamic multi-people marking and tapping allocations algorithms operating within an email, available in the market that allows email sender to associate selective people in an email which is being sent to a large number of recipients. In addition, there is no unique visual representation method that visually represents a same email (received by multiple recipients) differently in different recipients' mailbox. These differentiators are used to communicate (tasks, follow ups, actions) to different recipients.

Some of the techniques existing in the market are:

### 1. Setting Importance (Sensitivity) level of a mail

Email applications allows email sender to set options like "Importance" (divided into high, low, medium) and "Sensitivity" (divided into personal, private, confidential etc). But these settings turns out to be *email specific settings* and not "*individual recipient*" specific settings. Once an email sender specifies these settings in an email, each recipient of the mail will receive same email with same settings.

### 2. Sender specifying Action Item (follow ups) in the email

This is common, generally an email sender specifies recipient name in the email and writes action item, follow up etc in the mail. Mail is then sent to 1) either Group or 2) Individual ID. If sent on group, each recipient receives and reads the mail in order to check if there is an action item for them. If sent on individual ID, recipient clearly gets that there is an action item for him/her, BUT in that case, email sender has to send as many mails to as many people who he intended to assign action items or follow-up on assigned items.

There are evident disadvantages and limitations of the above techniques with respect to the mentioned problem statement. While these techniques are helpful while composing and sending out a mail by sender, these are found to be time consuming. Proposed invention solves the above shortcomings and provides a time effective solution for the use case.

## PROPOSED SOLUTION

With the proposed invention, efforts are done to improve end to end email communication workflow especially catering to the scenarios where multiple-action items are associated with multiple people and a single email is to be sent to a group distribution list.

With the proposed invention, an email author (A) can *tap* email recipient B, and D by assigning "actions" while authoring an email. Through the new user interface proposed through this disclosure, email author (A) can assign important/urgency/criticality levels to the assigned action item too.

“Actions” in context here includes (and not limited to) action items checking, assigning, follow up etc.

Tapping option is proposed to be triggered by selecting a Name and then doing a right Click. For example, 3 actions are designed

- 1) New Action – ASAP i.e. a new action item is being assigned by email sender to a recipient where a ASAP action is expected,
- 2) New Action – Regular i.e. a new action item is being assigned by email sender, a regular reaction is needed, not to be done urgently and
- 3) Reply awaited i.e. a follow-up being done by the email sender on an already allocated action item.



Fig 1: Functions attached with Tapping

## WORKFLOW

Consider an email which sender A (Ajay Jain) has composed and planning sending to the distribution list DL-CreativeSuite (this DL carries 20+ members).

Sender A wants to assign Kusha (represented as Recipient B) an action item that is to be done ASAP, and Manjri

(Represented as Recipient D) who has a follow up item where a reply is awaited?

In this case, Sender A will simply select Kusha and does a right click and invokes “Tapping” option and assigns “New Action – ASAP”. Shown here in UI:

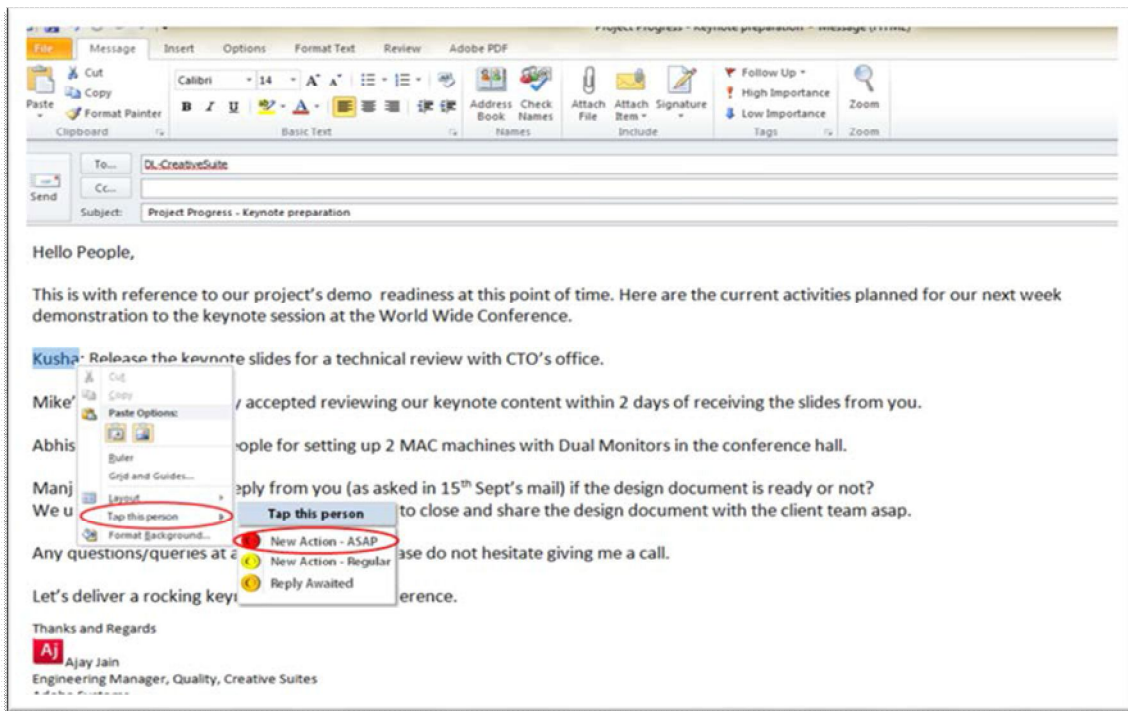


Fig 2: Invoking Tapping with a Person's name

For Manjri, Sender A, selects her name, does a right click and invokes “Tapping” option and assigns “Reply Awaited” Option. Shown here in UI:

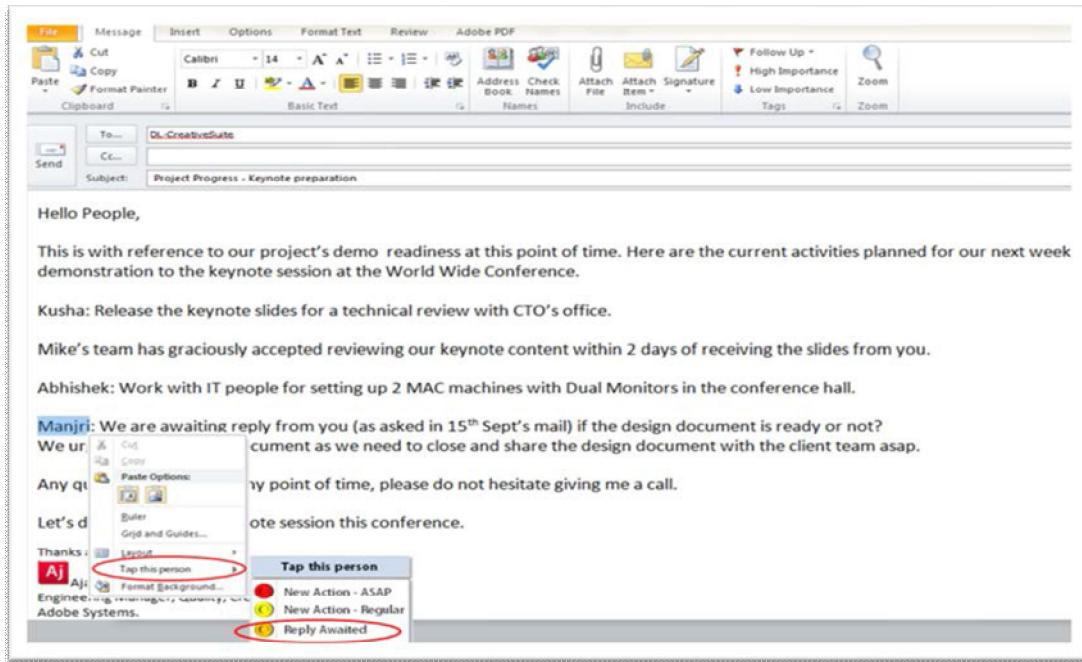


Fig 3: Invoking Tapping with another Person's name for same email

This single email when sent by email Sender (A) to the Distribution list or email groups, all recipients, (A, B, C, D, E, F, G, H, I, ..., X, Y, Z) receives the same email but it will appear differently in different recipient's mail box. Now, with the proposed invention, same email will appear differently in different people's mail box (Refer Figs below)

Recipient's B (Kusha) mailbox will show mails as shown in Fig 4. “Red colored” tapping icon is shown on the right side of the mail communicating that recipient “B” has been “tapped” by email sender (Ajay Jain). Red color signifies that there is an assignment allocated for “B” which requires ASAP response.

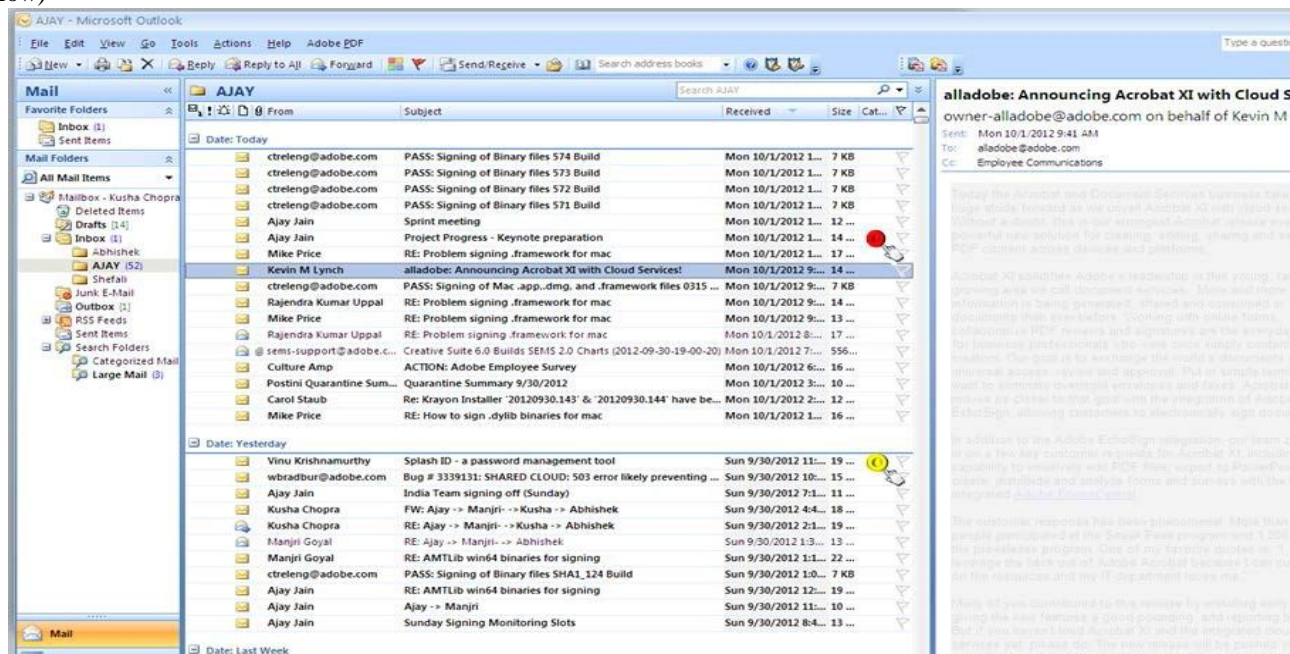




Fig 4: Different actions with different color codes

Red icon  shown in front of “Project Progress – Keynote preparation” mail in Kusha’s inbox shows that sender has tapped Kusha and a “new Action – ASAP” has been assigned to other.

In addition, Kusha’s mail box also shows a “yellow icon”  communicating that a regular “New Action – Regular” has been assigned by Vinu Krishnamurthy.

Recipient’s D (Manjri) mailbox will show mails as shown in Fig 5. A new “orange colored” tapping icon is shown on the right side of the mail communicating that recipient “D” has been “tapped” by email sender (Ajay Jain). Orange color signifies that there is already an assignment done for “D” which requires a follow up and a reply awaited signal is sent.

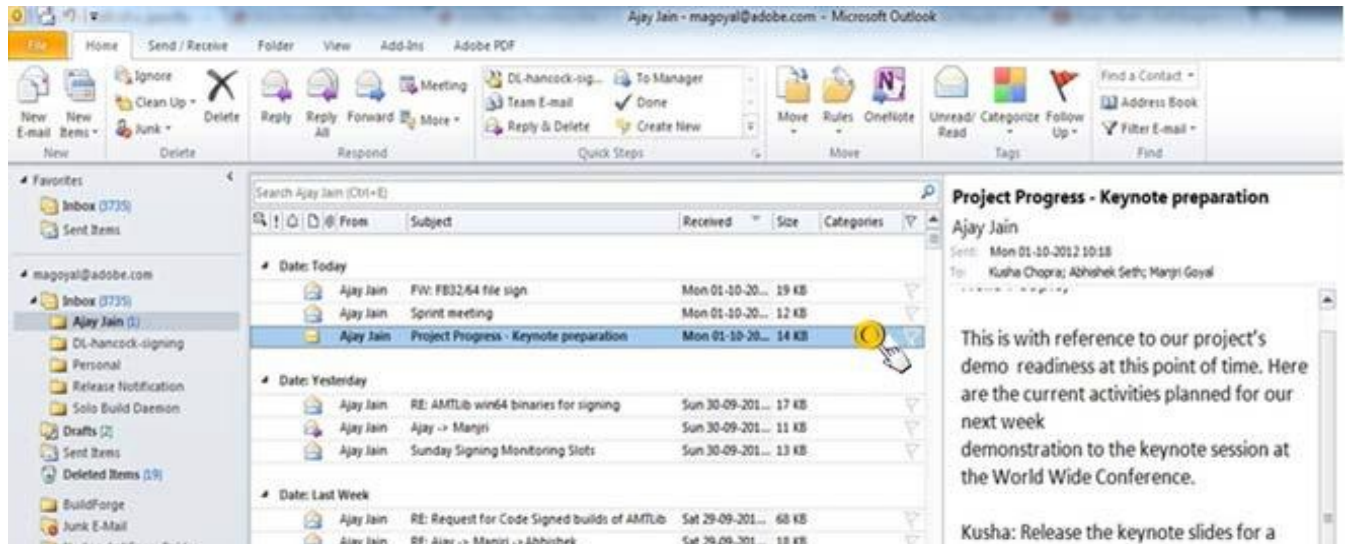


Fig 5: Recipient relevant color code

Recipient’s C,E,F ,G , H..., X, Y, Z mailbox will show mails as show in Fig 6 . No “tapping” icon is there on the right side of the mail communicating that recipient “C”

has not been “tapped” by email sender (Ajay Jain). E.g. Abhishek’s mail box as represented as “C”

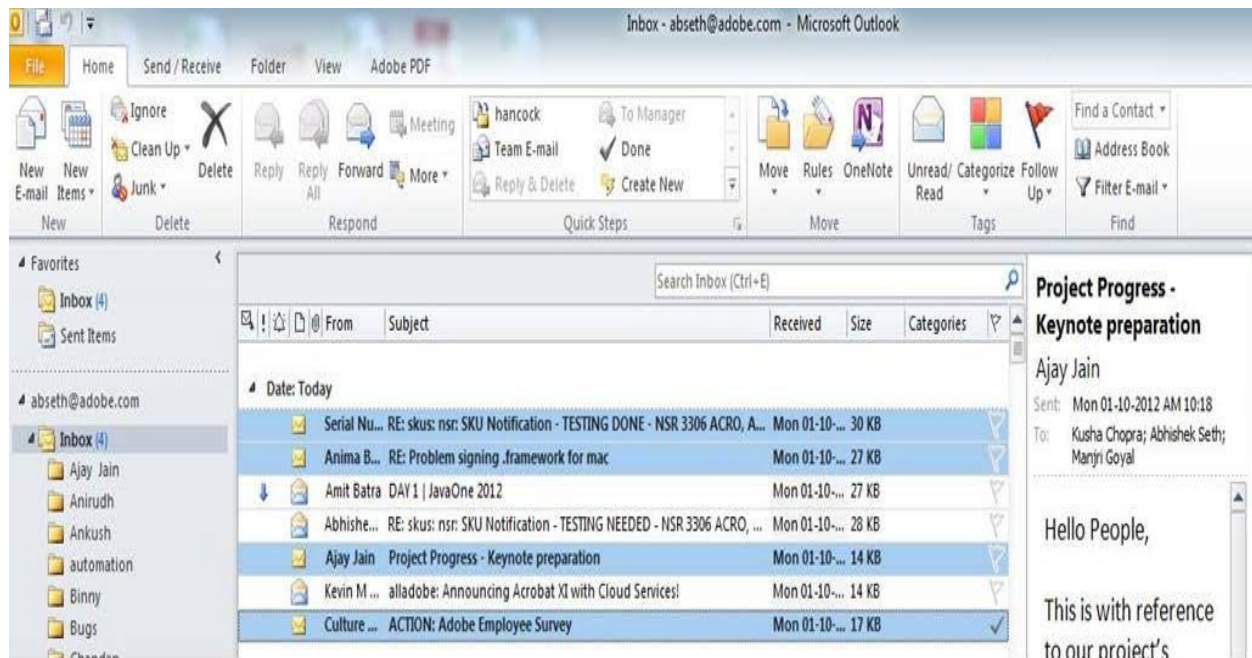


Fig 6: no actions associated with a user hence any color codes is not displayed

Proposed Algorithm:

1. For Tapping the recipient:  
 Record highlighted "Name\_String" which invoked "Tapping Menu"  
 Record "Tapping Option" selected

```
If selected "Tapping Option" = "New Action –
ASAP" {
Send (Name_String, Tapping_Option [0])
}
```

```
else If selected "Tapping Option" = "New Action
– Regular" {
Send (Name_String, Tapping_Option [1])
}
```

```
else selected "Tapping Option" = "Reply
Awaited"
Send (Name_String, Tapping_Option [2])
}
```

Match "Name\_String" in expanded Distribution list.

Communicate to Mail server, adding additional "Tapping" status updates to "Name\_String" Recipients inbox.

2. For adding colour code to be displayed in recipient's mail box.

```
If ( (Email_Recipient_Name == Name_String) &&
("Tapping_Option" == "New Action – ASAP")) {
Assign (UI_Icon for "NewAction – ASAP") on
Email_Recipient_Mail_Inbox
}
```

```
If ( (Email_Recipient_Name == Name_String) &&
("Tapping_Option" == "New Action – Regular")) {
Assign (UI_Icon for "NewAction – Regular") on
Email_Recipient_Mail_Inbox
}
```

```
If ( (Email_Recipient_Name == Name_String) &&
("Tapping_Option" == "Reply Awaited")) {
Assign (UI_Icon for "Reply Awaited") on
Email_Recipient_Mail_Inbox
}
```

With the proposed "tapping" driven task assignments to multiple people within a single mail and visual representation and differentiation of email in respective

Recipient's mailbox based on the action items and follow-up assigned to them, communication gets easy, quick and intuitive.

With this invention, email recipients can immediately associate themselves about the email that just now came to them. They can themselves prioritize opening, skipping, reading, addressing the email and hence the tasks assigned to them. Email sender's workflow of assigning tasks with different importance to different people also gets easy and quick.

Distribution lists, which already proved very helpful in communicating a common message to multiple recipients with a single click, can further enhance its offering of sending same email to multiple people but with each recipient getting a "unique for them" mail through this invention.

Since the algorithm works on deliberate assignments from the email sender, values and allocations representation by this technology are more optimal and more accurate.

## CONCLUSION AND ADVANTAGES

In Summary, proposed solution has following advantages:

For Email Sender:

- Time-saving and Effort Saving: An Email sender now does not have to author and send separate email to each individual to assign/allocate tasks/follow-up actions.

For Email Recipient:

- Email recipient need not spend long time in reading each and every mail just to check if there are any action item/follow ups for him/her in an email.
- Easy and Effective ordering, sorting and prioritization of emails can be done (especially when a person is back from his vacation and has tons of unread mails in his mailbox.

## NOTE:

Screens and Icons prepared are for illustrative example purposes only, Email solution provider (e.g. Microsoft Outlook) [4] can program configuring 3 entries (New Action – ASAP, New Action – Regular, Awaiting Reply) or 2 entries or any other number, icon colors, layout etc

## REFERENCES

- [1] Email Statistics Report 2014 – 2018 ([link](#))
- [2] Email Statistics Report 2013-2017 ([link](#))
- [3] Email ([link](#))
- [4] Microsoft Outlook ([link](#))