



ARCHITECTING PROJECT MANAGEMENT

for Enterprise Agility...

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Manage Projects From Your Email, Inbox

Leverage of Technology for Enterprise Agility

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Authors: Mr. Narasimhan Iyengar, Mr Sudheendra Gururaj

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ABSTRACT

Email is a main business tool in today's environment and also communication (email) is one key essence for fulfilment of projects. An average work day starts with email and during the entire work day, email window with notification alert is kept open.

So, can one Manage Projects from the Mail Inbox itself?

In any Business entity, a project (or work in general) involves activities, tasks to perform, meetings & discussions, people (a team) to execute, review, status reports, info-graphic dashboard with data & metrics etc., with a process or methodology followed during project life cycle. Also, there are implied expectations like improving team involvement, agility, uniformity, standardisation, productivity, automation, effort reduction etc.

Harnessing and leveraging the power of email communication technologies, this paper presents a simple and light weight project management solution using existing email platforms and adaptable to any Industry.

Also, this patent pending concept is being currently realised as a commercial product - U@Work, partnering with Microsoft for Outlook Office 365 platforms.

INTRODUCTION

Email is ubiquitous & indispensable, drives ones daily activity and users consume email using various platforms and devices.

Email has been invading time & work. Email usage statistics are mindboggling. McKinsey & IDC¹ report says, a working individual spends ~28% workweek on emails and ~39% workweek on Role-Specific tasks (includes project management). Radicati² report says, that in 2015, with nearly 2.6 billion email users worldwide, emails sent and received per day total over 205 billion and email use continues to see strong use in the business world, as well as among consumers.

Email is organisations best information asset. They have work conversations. As emails flood the inbox, these emails have to be organised, archived and easy for retrieval when needed.

Apart from emails, different IT enabled tools are used to manage projects. Therefore, professionals have to juggle between their mail boxes and various tools to manage their activities, which results in distraction, duplication of efforts and time.

An ideal scenario would be where an email platform integrates with various IT enabled tools, enabling them to complete their work as they manage emails. In this paper we examine this concept U@Work, being realised into a software tool and present its capabilities.

DETAILS OF THE PAPER

Current Scenario

Organisation and individuals working on projects, use some process / methodology to manage their projects. Today a plethora of monolithic project management tools are available for Organisations to use. Even though, these tools come with lot of features, there are challenges such as, a context switch to get to the tool, require separate login, access limited to few people (due to possible cost / budget constraints) there by reducing involvement and collaboration, lot of levers & switches to configure and adapt, learning curve, promotes a particular methodology/approach and principally need to 'push' users to adapt and use. Also, most of the time, users may have to manually extract and communicate (through emails) information from these tools.

Secondly, working individuals may be involved in multiple projects. As users keep receiving emails with varied context, even within a project, lot of time is spent organising & managing them. Users may adopt various options made available by email client providers such as moving mails with similar context into different folders, label, tag, colour code in their own way which may vary from user to user.

U@Work approach

U@Work is envisaged to be a simple and light weight project management solution tightly integrated to the email platforms. So, from the email window, with intuitive user interface and menu options, Users for example can define project work elements, meetings, tasks, allocate resources and also track progress from a rich visual Dashboard.

Projects and activities get represented as email folders in a hierarchical manner. Tasks can be associated to projects & activities, people can be assigned to activities and tasks, meeting action items can be tracked and health of projects monitored with data & metrics providing insightful infographics auto-rolled up to the Dashboard.

Leveraging technology

How to Integrate? Most of the popular email platform providers support pluggable software modules / applications. They are generally termed as plug-ins or add-ins. Depending on the email platform provider, application programming Interfaces (API) are exposed for the plug-ins to interact. When it comes to email user interface, a plug-in, when integrated, appears in the email window and users can access / trigger plug-in specific functionalities from main menu bar / contextual menu's or from a dedicated pane (a portion of real estate provisioned for plug-ins) in the email window.

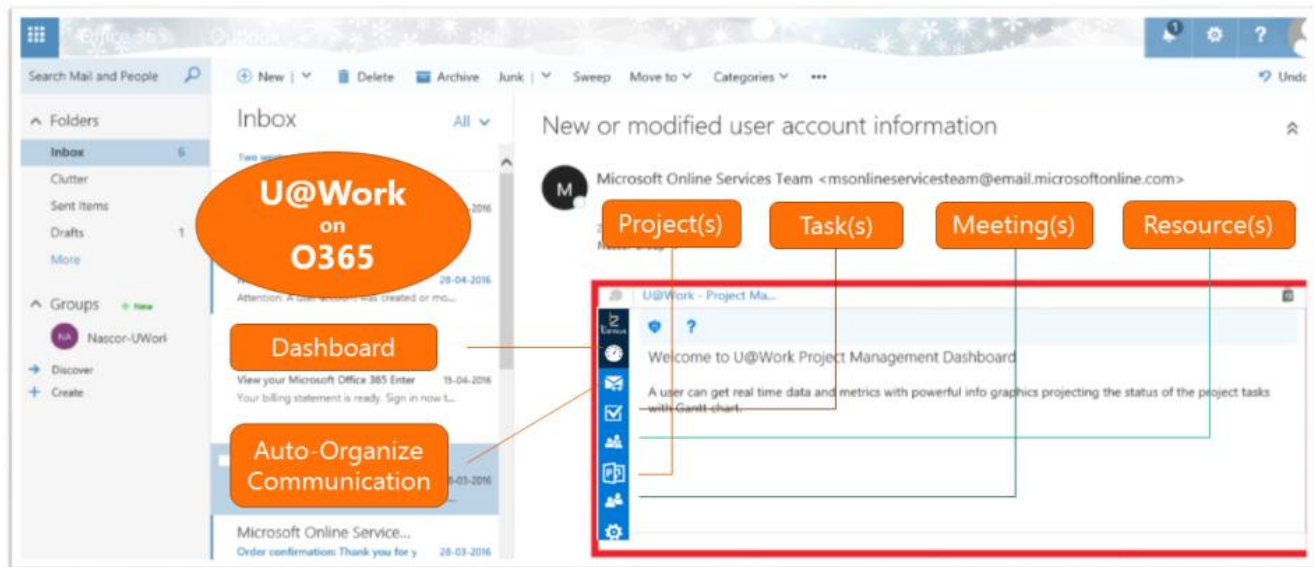
As Microsoft Outlook email platform is very popular with a large user base and used by most of the business entities, initially, as a proof of concept, U@Work was prototyped on Microsoft Outlook desk top email client platform. Messaging Application Programming Interface (MAPI) was used leveraging native Microsoft technology and development platforms. Some of the technologies like Windows Forms became obsolete and required UI refactoring. With Microsoft Office 365 gaining traction backed by technology support from Microsoft, moved forward to realise the same on Microsoft Outlook Office 365 email platform.

Enhancing email utility

Presently, as a proof of concept, U@Work is being realised as a product add-in, integrated to work with Microsoft Outlook Office 365 email platform. Some of the project management features realised so far are;

- **Manage Work:** Users can create, manage by directly defining project, activities, sub-activities etc. and assign people to a project, activities from within the context of an email in Outlook. Allows multiple project creation and can be managed from user interface and monitored from Dashboard.
- **Dashboard:** U@Work add in provides a dashboard view where the users can view metrics of project summary, task status, meeting metrics and Gantt chart.
- **Team on Same Page:** Manager shares project details to team members with a single click. The sharing happens via email being sent to people whom activities, sub-activities etc. have been assigned.
- **Auto-Organise folders:** On receipt of first project email, similar project (folder) structure as configured by Manager will be created in every team member's mail box automatically, thus bringing uniformity in structuring project & communication across team, ground up.
- **Auto-Organise project emails:** From UI, when any team member sends email with context set by selecting Project, Activity, Sub-activity etc., emails get automatically routed to respective folders in the recipient's mailbox. Communication is organised ground up and saves effort and time.
- **Manage Tasks:** From UI, create tasks against project, activity, sub-activity etc., and assign to any team member. Team members can update task status and the data is rolled to Manager and dashboard.
- **Manage Meetings:** Covers elements such as invite, calendar, meeting minutes, track outcome, mainly decisions and action items. Meeting metrics are rolled up to dashboard.
- **Resources:** From UI, Team members can notify their non-availability, example leave, vacation etc. This detail is rolled to the Manager and also routed to the respective project folder and metrics updated in the dashboard.

Image below illustrates Nascor's U@Work, as add-in, integrated to Microsoft Outlook, Office 365 email platform.



Challenges faced so far

When leveraging latest and evolving technologies, there were challenges and limitations that were encountered. Some of them are detailed below.

As U@Work rides on existing email platforms, the biggest challenge lies in bringing feature parity and same user experience, by hiding from users, technology & implementation complexity, barriers and limitations. The APIs and plug-in integration approach is not the same and varies from provider to provider. This can be analogous to developing an application with same features and user interface to run on different operating systems.

Getting to depth, The APIs and plug-in development and integration approach between Microsoft Outlook desk top version and Microsoft Outlook Office 365 is totally different. For instance, MAPI is used for Microsoft Office desk top version, which is different from using the latest & evolving Microsoft Graph technology for Exchange & Office 365, which is again different from using web hooks provided by Outlook APIs to directly interact with Outlook as part of Office 365.

Plug-in technology is also evolving and not exercised by many so far. Initially, while examining feasibility options, lot of time and effort went in, even to make samples work. Also, lack of documentation aggravated the problem and debugged to figure out missing pieces and discover remedies. For example, first instance to make U@Work visible in the email window was a significant effort. Next steps to process user actions, when clicked, were no different.

U@Work requires to interact with user mail box and email exchange server. As Microsoft Graph is also evolving, very few APIs are exposed limiting functionality that can be realised. Also, had to experiment a lot, due to insufficient technical documentation and usage examples. Another uncertainty is to battle possible changes to APIs, as they are still in beta and not released to production. Already faced a situation once, where change in API syntax broke U@Work. Presently, we use a combination of both Microsoft Graph and web hooks for Outlook APIs.

Emails can arrive to any mail box at any point in time. U@Work to have to talk to Outlook and Exchange server and get notifications, to be in sync with mail arrivals and user actions. Plug-in request to exchange are treated asynchronously and honoured on low priority. So, to synchronise and process in real time, (even when users have not logged into the mail box and U@Work) a separate service was built to run 24*7 to run in the background.

With Microsoft Outlook Office 365, mail box can be accessed from popular browsers such as Internet Explorer, Edge, Chrome and Microsoft Outlook desk top versions (2013 & 2016). When it comes to user interface, size and form factor of the dedicated pane exposed for plug-ins to render varies between browser and desktop email clients. Also, there is no feature parity yet between browser and desktop version. For example, in case of Outlook desktop version plug-in can appear in the main menu bar. This feature is yet to be released by Microsoft for browsers. Ended up adding extra plumbing program code to address this.

With many challenges faced and more to follow, U@Work continues to evolve. With an intention to implement U@Work on other email platforms, one can expect different kind of challenges.

Augment agility

U@Work aims to address the needs of an agile organisation. Highlighting a few use cases as explained below.

With change in business scenario becoming a constant, one of the requirements for an agile organisation is, its ability to adapt and execute. Instances such as, to capitalise on new opportunity, emerging projects, address challenges or issues that arise and to quickly get on with work. With U@Work, an email user can quickly (within minutes) create project, form a hierarchical / non-hierarchical, cross functional team and glued with email, take up, collaborate and fulfil work.

An organisation would like to have up-to-date information, about status and progress of projects, which otherwise, lacking visibility at any point in time, would reduce agility. Use of disparate IT tools would provide them, but requires time and effort to keep the information updated. There are times when users forget to update, require soft reminders (sometimes through email) and sometimes with a resistive and unpleasant feeling, users put that incremental effort to update information. When users keep their email window open, with U@Work, one can easily update in a jiffy, which is automatically rolled up to dashboard, providing real time visibility.

Generally, during work conversation, information sharing also happens through email. For example meeting minutes are shared post meeting. There are instances where action items are forgotten and left out. An agile team cannot leave anything to chance. U@Work covers complete meeting life cycle, compiles and rolls up metrics like decisions and action items to the dashboard, which otherwise, has to be fed manually to other IT tools. U@Work treats action items as tasks. Also, users calendar is updated, so that, one does not accidentally miss out and address action items as expected.

Improving individual and team productivity increases agility. U@Work 's approach to integration of project management functions and integration to tools will reduce duplication, distraction, saves time & effort and increases efficiency, helping users to focus on core work. Also, coupled with various email productive utilities such as, organising emails and folders, aims to address issues like email overload and reduce email pain points too.

U@Work has to be agile too. With the ease of access & user friendliness synonymous with email usage, the same is extended with an approach to provide flexibility for users to manage projects in different ways. For example, one can break down project work, either activity based or task based or combination of both, making it adaptable to suit any work type and environment.

With every team member armed with U@Work integrated to his email platform, promotes involvement, teaming and collaboration. Involving team members to contribute and manage their work will make projects progress forward with ease and towards fulfilment. With U@Work a click away, it enables every team member to be agile, causing a ripple effect, collectively making project teams and organisation become agile @Work.

Future work

When teams are on different email domains / providers, to achieve interoperability, email protocols such as Internet Message Access Protocol (IMAP) provides an option to transport custom information along with email. This can be leveraged to make U@Work seamlessly work across two different email client platform providers.

Currently, to allay security concerns, U@Work does not read emails. Only meta data is used for processing. Going forward, with growing usage and 'trust' factor gained, U@Work can 'mine' content and apply machine learning and artificial intelligence techniques for analytics, actionable insights and enhance automation.

Seamlessly cover all devices and platforms. Also, apart from enriching with more Project Management features and disparate productive utilities, make U@Work a 'hub', connecting to disparate Business Software, utilities and tools such as CRM, complement with popular project management and collaboration tools, voice and text chat communication tools etc., seamlessly exchanging data & information.

Even though a plethora of features & options can be incorporated, similar to email, intent is to keep it nimble.

CONCLUSION

This is bringing together, two very popular and prevailing entities, email and work management tools to manage projects from the email window. Using email platform as the backbone, U@Work leverages, enhances and transforms the email platform by augmenting essential project management features blended seamlessly into the email user interface window. This significantly enhances the utility value by adding a new dimension and perspective to email users & platforms. Also, U@Work can be used by everyone and by any industry, reduce dependence or mitigate usage of other project management tools and make every day at work fruitful.

REFERENCES

- McKinsey Global Institute and International Data Corporation (IDC) , “The social economy: Unlocking value and productivity through social technologies 2012 Report”, MGI_The_social_economy_Full_report.pdf, Exhibit A7, Page 151, <http://www.mckinsey.com/industries/high-tech/our-insights/the-social-economy>

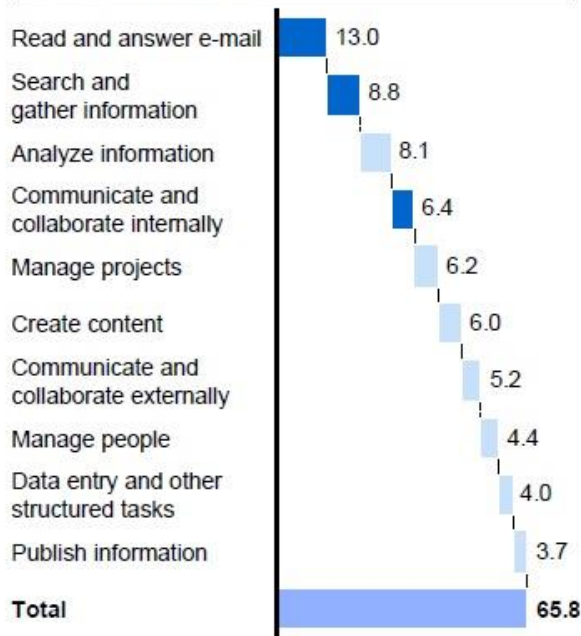
Exhibit A7

We adjust IDC data to estimate time spent on different activities by a typical interaction worker

Hours per week per activity

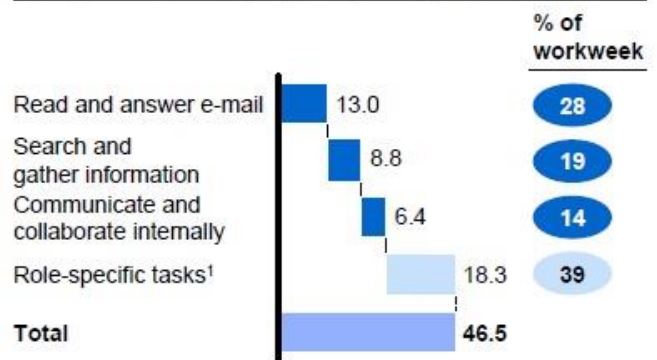
- Mandatory activities for interaction workers
- Other activities

Activities in IDC report



Adjusted activity list

Average workweek of people responding to the survey



¹ Included activities depends on specific role, e.g., project management, content creation, people management, data entry, and information analysis.

SOURCE: IDC; McKinsey Global Institute analysis

- Radicati Group Inc, “Email Statistics Report, 2015-2019”, Email-Statistics-Report-2015-2019-Executive-Summary.pdf, <http://www.radicati.com/wp/wp-content/uploads/2015/02/Email-Statistics-Report-2015-2019-Executive-Summary.pdf>

AUTHOR PROFILE

Authors – Mr. Lakshminarasimha Bharadwaj, Mr. Narasimhan Iyengar, Mr. Sudheendra Gururaj are founders of Nascor Technologies, a Bengaluru start-up, currently in pursuit realising U@Work concept as a commercial product. Being engineers, they bring in multi-domain, multi-functional expertise with experience spanning over 6+ decades previously worked in various Product and Service companies in India and abroad like HP, Dubai Dry Docks, Larsen & Toubro, Yokogawa, Sun Microsystems, Yahoo and start-ups.