

Email Matters

by Alec Milton

In 50 Words Or Less

- Many organizations face time and cost inefficiencies, as well as higher risk, due to poor email management.
- One global firm developed software using a quality assurance framework to meet the demands of its email users.
- The firm's software development process provides insight for other organizations wishing to improve email management.

How one company **tamed email** and turned it into a **time-saving, cost-cutting** project management tool

IN A RECENT survey of 1,237 email management product users across a variety of disciplines, 96.5% of respondents said they believed their companies should place medium to high priority on the quality assurance (QA) of email. One in five said they believed their company faces high risk due to poor email management.¹

It is commonly accepted that 80% of data within an organization is unstructured and that most companies are working with only the 20% of structured, easily accessible data. Unstructured data refers to content that does not lend itself to standard storage and retrieval methods. Emails are considered a part of the definition of unstructured data. But with the right processes, it is possible to get email under control.

Better management needed

In the architecture, engineering and construction (AEC) industries, the likelihood of needing to produce all-electronic correspondence regarding a project for litigation purposes is higher than in most other industries. Some companies store the content of email messages for this simple purpose. But this can still leave an organization exposed, as was the case in *Williams v. Sprint*, when the court ruled electronic data must be produced in native format.²

Additionally, AEC projects involve participants from multiple locations and companies on and off site, and communication must be transparent to keep the workflow of a project on track.

With the expansion of globalization comes an increase in technology-based communication that will only continue to grow. If organizations do not address how to create solutions for email management, there will continue to be staggering losses of pertinent information, costly errors and even more costly fines when confronted with a court-ordered retrieval process.

Even the mighty Microsoft was not immune. It was ordered to pay \$25 million when certain email evidence had not been produced during e-discovery.³

Tony Broomhead of BL Consult, a firm that handles dispute avoidance in construction, summed it up aptly when he said, “The ability to instantly put your hand on any email not only saves a tremendous amount of time in day-to-day operations, it also protects you from unfounded litigation. In the construction business, capturing communication is critical to the success of a project and is absolutely necessary in order to have full records available for the inevitable disputes that occur in this industry. Too many businesses fail to realize the need for good email filing until it is too late.”⁴

That is why software developers at Arup, a global firm of consulting engineers with more than 10,000 staff members in 33 countries, decided it was time to proactively create a solution for turning unstructured email data into structured, accessible information.

The resulting multifaceted email management software plug-in exceeded expectations by transforming compliance assurance, increasing productivity, eliminating costly project errors and reducing IT storage costs. The lessons learned in the process of developing the product were as important as the final product itself, which is now used in multiple industries worldwide.

Pay later

An Accenture survey reported that managers spend up to two hours each day searching for information. In addition, 45% of the managers surveyed for the report stated that gathering information about the activities of other parts of their company is a big challenge due, in part, to the way information is gathered and stored. The majority of managers said they store their most valuable information on their computer or in their individual email accounts, with only 16% using a collaborative option.⁵

If the information is required to support a legal proceeding, the pressure is high and costs can rise dramatically if a complete set of electronic documents must be found under a court-ordered deadline. The International Data Corp. estimated the cost to U.S. business to identify, preserve, collect, process, review, analyze and produce information for litigation (e-disclosure) to be \$12 billion, reaching as high as \$22 billion in 2011.⁶

Gartner Inc., an IT research and advisory company, estimated the average e-disclosure event, including regulatory investigations and lawsuits, costs \$1.5 million for an average U.S. company with \$1 billion revenue. Those same companies can face more than 500 lawsuits at any given time. The main factor driving these costs is the amount of data that must be collected, reviewed, analyzed and produced.⁷

Yet few organizations take steps to structure their email data for easy retrieval. For an organization to solve this problem, it needs to get email under QA control in a way that doesn't hinder the fluid nature of the medium or place costly demands on IT departments.

Five solutions to the same problem

In 2002, Arup had well-defined QA procedures for paper documents, but fragmented methods for email. Arup had been developing commercial software for the AEC markets for many years, however, and thus had the capability to address the problem through software.

Arup realized it needed a QA-compliant way to manage email correspondence with the same care as paper documents. The problem was not which tool to buy, but rather how to tame the process of unifying the five internally developed tools into one globally adopted tool.

There was an opportunity to unify project correspondence and improve team communication, while at

the same time addressing existing concerns about the speed of data retrieval and the limited storage capacity of the email systems.

Arup's London office had started to develop an email management tool to gain QA control of business email. Quickly, it heard that other parts of the firm were trying to solve the same problem. An internal investigation revealed five offices (Moscow, Sydney, and London, Newcastle and Bristol in England) were all developing their own solutions.

Each developer had a vested interest in its own tool, which was typically targeted at regional or national needs. The initial QA challenge was to get everyone to agree on one solution that would meet the needs for the whole business.

The key players first met by phone and screen sharing to discuss and evaluate the different approaches to a solution. A show-and-tell session allowed each product to be reviewed. The decision was quickly made to proceed with the London development as a base model and integrate some of the ideas from the other products. To provide continuity, the other tools remained in use until the London tool reached the required level of maturity.

The following basic criteria were agreed on:

- Build the interface into Microsoft Outlook to make it accessible to users.
- Enable messages to be stored in the same location as other project documents to streamline team collaboration and project management communication.
- Have the ability to search for messages based on the project they relate to and their contents.

Because QA drove the tool, Arup set up an international client committee of mostly QA professionals to handle the process. One concern that quickly surfaced from the committee was that no one wanted to put his

Email Evolution

Learn how business correspondence evolved from paper to email and how it has changed the way organizations manage data in the online sidebar, "How Email Changed Business," at www.qualityprogress.com.

or her data into a system that might not be around in the distant future. At this point, the project could have failed because all software has a limited lifecycle. Instead, it gave birth to a new approach.

Rather than create a database with the contents of the messages, which was a common and popular approach, it was agreed to store the emails in native Microsoft message (MSG) format and in regular file system folders. If the software was later superseded, the data would still be accessible by normal methods.

Managing feedback

Early versions of the software were made available to a select group of users, where opinions were gathered. Following these successful trials, the software was made available to all Arup offices.

Because Arup operates in an open market even with its in-house developed products, uptake depended on user demand rather than policy. Uptake was high, which created another QA challenge of managing the large quantity of feedback from all offices.

In the early stages, developers maintained simple lists of user requests and bugs. As the volume grew, so did the need to have a better way to manage it. After exploring options, which included commercial products or developing its own tools, the development

Mail Manager ribbon menu / FIGURE 1



Background filer component of Mail Manager / FIGURE 2



team decided to adopt a well-established and free open-source tool, Bugzilla, to track bugs and requests.

The initial adoption of Bugzilla led to a sharp rise in entries to the system. Arup also sold the software to external organizations, which created even more feedback to manage. So the team decided to limit the number of people who could add items to the system and filtered all incoming requests.

With the tool's global growth, the original internal client committee was ultimately no longer an appropriate vehicle for feedback and was disbanded. A new regional client panel was formed with locally selected representatives from each of Arup's five global regions: the Americas; the United Kingdom, the Middle East and Africa; Europe; East Asia; and Australasia. For commercial customers, focus groups were organized to garner views.

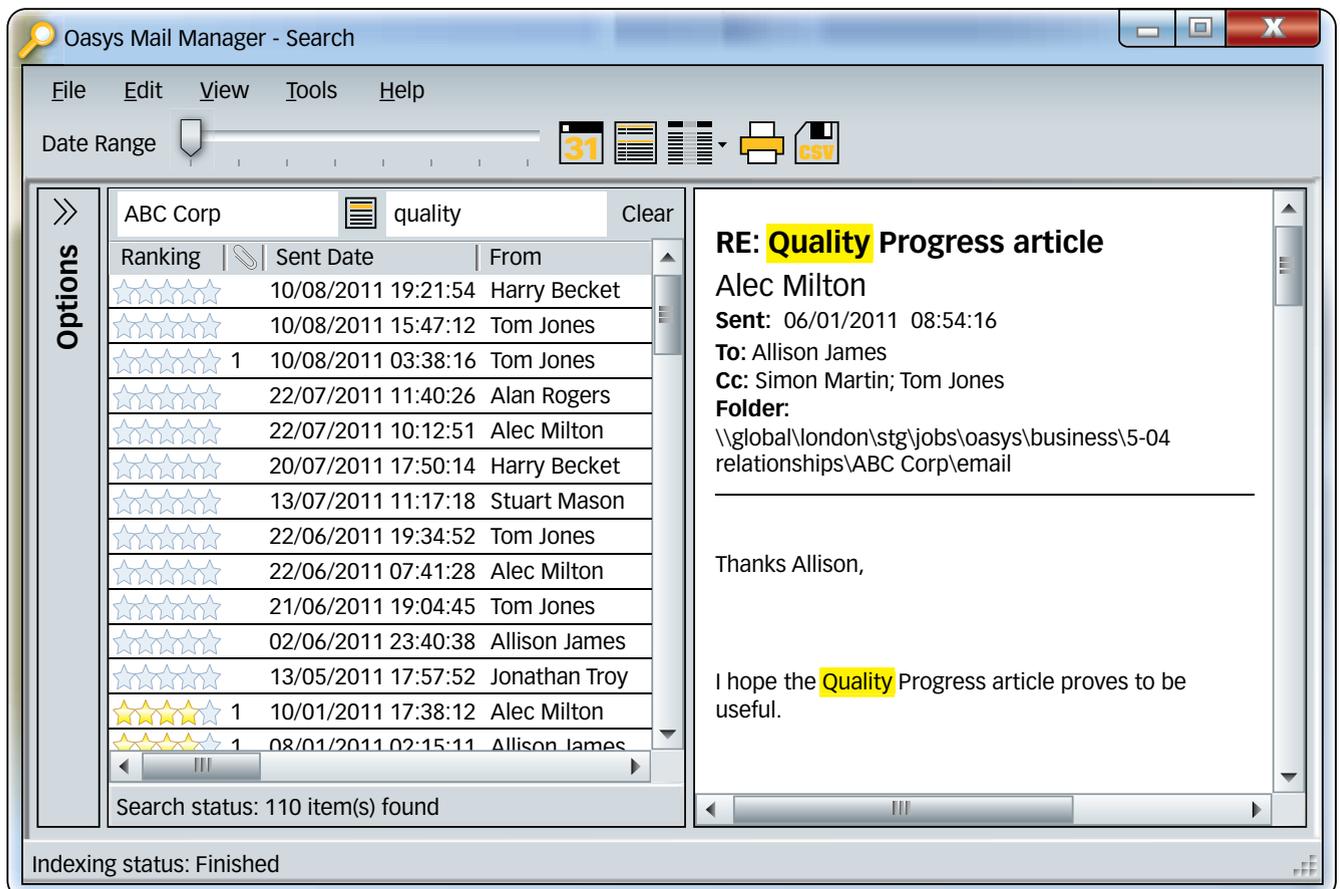
Managing demand

Feedback from the regional client panel showed the initial attempt for global roll-out to more than 10,000 staff members was slow and frustrating, so the team developed a deployment tool allowing the software to be pushed to thousands of machines from one workstation. This tool enabled another kind of QA to be imposed in the area of configurations.

To meet the large variety of user requirements, the software had become very configurable, but at the cost of consistency. So the developers also included the ability to deploy a configuration and lock it down in the development of the tool. This gave local managers the ability to define, set and enforce local policy.

When Microsoft later improved its software deployment tools, the in-house tool was retired, but the ability to regionally define and enforce policy was retained.

Mail Manager search tool / FIGURE 3



Exceeding expectations

Arup's resulting tool, Mail Manager, consists of a plug-in to Microsoft Outlook that provides access to the main features via a "ribbon" menu, shown in Figure 1 (p. 19). The plug-in suggests a filing location based on the user's previous behavior.

After a location is selected, the message is flagged for filing and tagged with its destination. A separate background filer component completes the process. This separation ensures the software is always responsive to the user and enables filing from a mobile device and the ability to work offline.

The background filer component (Figure 2, p. 19), which sits in the tray, looks for work to do every few seconds and undertakes the filing tasks from Outlook, a mobile phone, tablet device or Outlook Web Access.

There is no server component to Mail Manager. This important design decision removes concerns about destabilizing the email server and greatly eases acceptance by users and IT personnel.

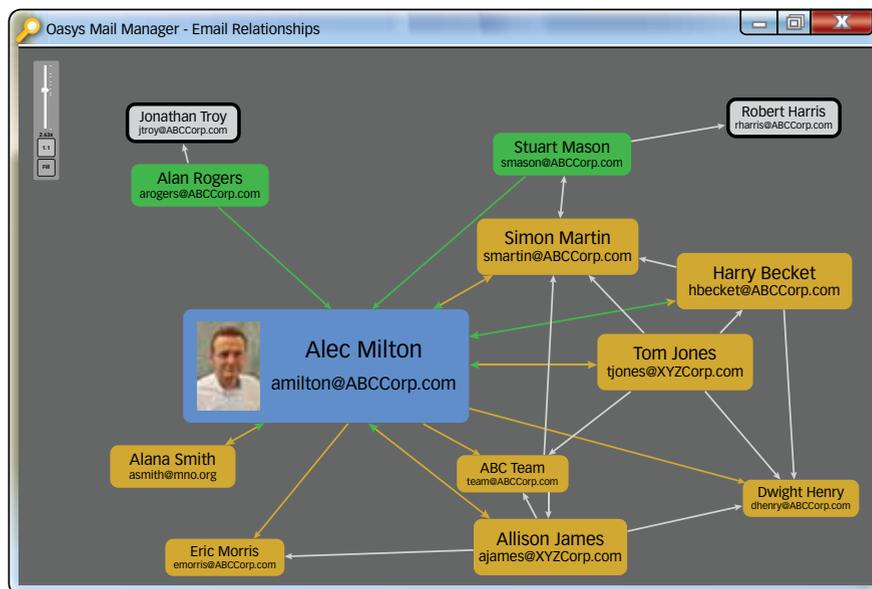
The search tool, shown in Figure 3, includes keyword highlighting and near-instantaneous results, maintaining a local copy of its index in the user profile that only contains data from filing locations the user has searched. This keeps the index small and allows the user to search while offline.

Recently, Arup developed a new capability that allows users to produce a diagram from the search results (Figure 4). The diagram shows the names and email addresses of the contacts from the search results in boxes, with the size of each box representing the number of emails sent by that contact. This has proved useful in discovering communication gaps and identifying who is maintaining client relationships.

If Microsoft Exchange is the email server and it contains staff photos, they are incorporated in the diagram. This capability provides a human dynamic to the function and highlights the key people involved in the communication.

Capturing a portion of the screen and marking it up as part of an exchange was found to be a frequent but convoluted process. So a snap 'n' send function was created to provide easy screen capture, markup and creation of the content as a PDF attachment to

Diagram of search results / FIGURE 4



an outgoing email.

The success and acceptance of the tool can be attributed to:

- As a plug-in to Outlook, user adoption is quicker due to seamless integration with a familiar and frequently used interface.
- By building technology that remembers the filing habits of each user and provides logical prompts for filing locations, the percentage of incorrectly filed emails is greatly reduced.
- Integrating filing into the routine of sending and receiving an email creates a natural flow for users to file emails immediately and eliminates the psychology that managing emails is a separate and time-consuming task.
- The ability to file emails in Microsoft native format in project folders dramatically decreases IT storage costs and increases QA on project documentation and e-discovery.
- A fast, powerful and effective search and retrieval tool was essential in building user appreciation and trust in the system.
- By avoiding the creation of a proprietary storage system and filing emails to native file system folders in Microsoft native MSG format, all concerns about the long-term viability and accessibility of the data are removed.

It is important to keep people informed, even when there is no progress.

The Arup developers created a popular software tool because they listened and responded to user needs. QA provided a framework for them to do so.

The system has changed significantly over time to integrate new technologies and support new devices. Advances in the capabilities also evolved with time. These include updating the search tool to return results in less than one second and to highlight keywords in its own preview window. Intelligence continues to be added so the software learns and adapts to individual user behavior.

Measured savings

The intent behind the software was to treat email communications with greater care and ensure messages can be found when needed. But in creating and licensing the software, other benefits have been realized by the tool's users:

- Messages kept in Outlook consume more disc space than when stored as MSG files. Stephen Dexter, a chartered accountant in Oxford, England, found that moving his data from Outlook to file system folders reduced his disc space usage to 39% of its previous size. To a company of Arup's size, this represents a huge saving in storage costs.
- Morgan Carey Architects, a firm based in England, claims that using Arup's approach to email management has cut the company's paper use by 33%.
- Arris Contracting Co. in Poughkeepsie, NY, said it believes it is avoiding thousands of dollars in storage costs and about 70 man hours per month of searching for information.
- Gensler Architect's quality manager, Monica Parrott, said she believes the global architecture, design, planning and consulting firm has reduced more than 280 man hours per week of administrative work by using Arup's approach.
- Bruce Sobocinski, IT manager for Highland Associates, an architecture, engineering and interior design firm headquartered in Pennsylvania, said he now saves six to eight hours per week due to eliminating the need to search former employee and project files for critical emails. Before implement-

ing Arup's model, Sobocinski said he received a minimum of two requests a week requiring him to perform this tedious task.

- Michael Kenealy, a certified public accountant and vice president and chief financial officer of Nitsch Engineering in Boston, estimates his company has saved more than \$10,000 in storage costs and continues to save staff countless hours associated with e-discovery.

Lessons learned

From the development and implementation of Arup's email management software, seven key lessons have been learned:

1. If everyone's ideas were adopted, the final product would have been complex and potentially unusable. Although it was important to listen to everyone, there must be measures in place for filtering ideas.
2. It is important to keep people informed, even when there is no progress. If a problem, such as a bug, arises, let them know what is happening, even when you have hit a brick wall in terms of solving it. If you are silent, the users will assume you are ignoring them. If you keep them informed, they are usually incredibly tolerant.
3. While QA procedures and project management processes can be taught, it is not wise to assume everyone involved is in tune with QA. Because software developers tend to be creative thinkers, they need the balance of those using the product for practical application. It is important to introduce the right mix of skills and opinions into the process for the optimum result.
4. Although it is tempting to jump right into development, it is more cost effective to take time to stand back, listen and plan well. This will result in less rework throughout the project and ultimately a better product.
5. When adding technical staff to the process, fine-tune the recruitment process. Test skills with exams, and balance that with open questions to gauge the candidate's ability to solve problems with appropriate solutions.

6. Address the whole problem, not just the one in front of you. If Arup's developers had not produced their deployment tool, widespread adoption would have been thwarted.
7. Well-designed systems and processes save time. Prior to adopting the Arup tool, 34.1% of commercial users reported spending two or more hours per day finding email. After adopting the tool, that figure was reduced to 0.9%.⁸

The QA answer

Not every company has the capabilities to create software to address issues with unstructured email data. But every company has the capacity to use QA guidelines to approach a solution and determine which ones are actually solving the entire problem.

Continuing to look at the issue as a whole while enlisting experts, users and commonly available tools to microscopically manage each step typically garners the best results. Every piece of the process is vitally important, and establishing open communication within a realm of structure is the only way for the best ideas to come to fruition.

In searching for tools and systems to tame and implement email management, be sure to ask these basic questions:

- Will this make email data more accessible and transparent?
- Will teams increase productivity by using this system?
- Is it likely employees will easily adopt this solution?
- Is this going to save time and money for the organization?
- Will this reduce IT costs and problems caused by email-related issues?
- Will my data be available to me in five, 10 or 15 years if this technology is no longer available?

If you answer no to any of those questions, stop and rethink your approach. Assemble a diverse and knowledgeable committee—preferably not just people who volunteer to be on a committee—and take time to ensure you are still committing to a solution that will ultimately be an asset—not a hindrance—to business objectives. **QP**

NOTE

Oasys, Arup's software house, achieved ISO 9001 plus TickIT certification in March 2004 through Lloyds Register. This status continues to be maintained.

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