

Email

Everything you ought to
know...(almost 😊)

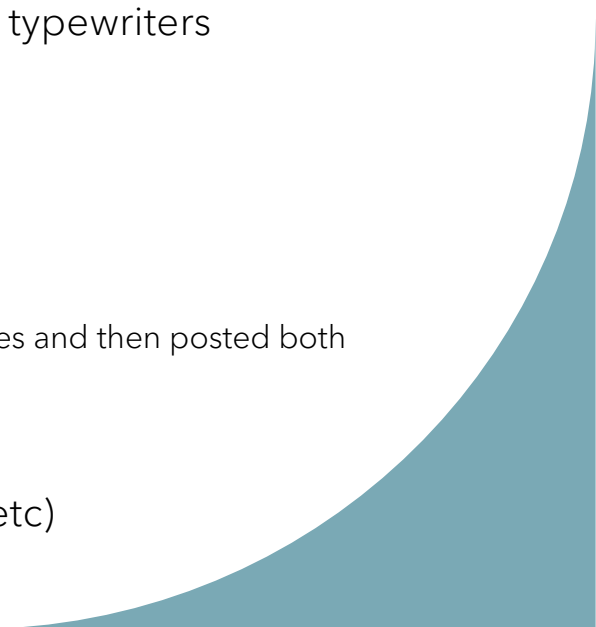


Agenda

- What we did before Email
- Brief history of Email
- Electronic Mail (Email) version 1 (POP3 and SMTP)
- Email version 2 (IMAP)
- Google Mail (Gmail)
- Email servers and Email clients how they connect
- Topics for future meetings



What we did before Email

- We have been sending “mail” for 100s of years before digital computers became a thing
 - Royal Mail started in 1516 when Henry VIII appointed Sir Brian Tuke as Master of the Posts for royal communications, but it became a public service in **1635** when King Charles I opened it to the public, with formal establishment as the **General Post Office** following in **1660**.
 - Typewriters appear in the 1870s (and “disappeared” in the 1980s)
 - Carbon paper for making copies took off in 1820 (!) so was in use before typewriters
 - This is why we use “cc” even today (carbon copy)
 - “bcc” = blind cc - only the sender knows they are getting a copy
 - Typical use case was:
 - Dictate a letter saying who it is To, who is Cc’d and, if needed, who is Bcc’d
 - Letter is typed with copies, master is signed by sender, all letters are then put in envelopes and then posted both externally and internally
 - At least one copy (usually) got “filed” together with the list of Bcc recipients
 - “Attachments” could also be put in the envelopes (photos, printed stuff, etc)
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Brief History of Email

- Fast forward to 1980 when electronic mail first became a real thing allowing UNIX computers to send/receive mail (using UUCP)
- Apple II PC arrives in 1977 - revolutionary!
- Closely followed by computers based on CP/M (Commodore, Amstrad, Osborne and lots of others)
- IBM PC arrives in 1981- industry could not build them fast enough to meet demand

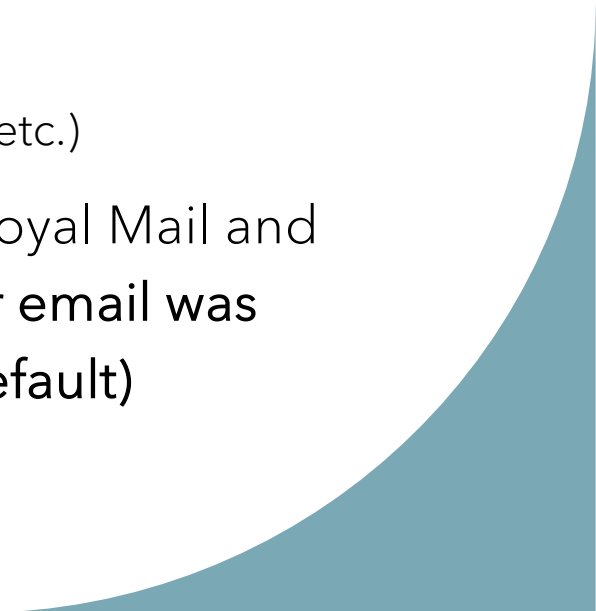


Brief History (cont'd)

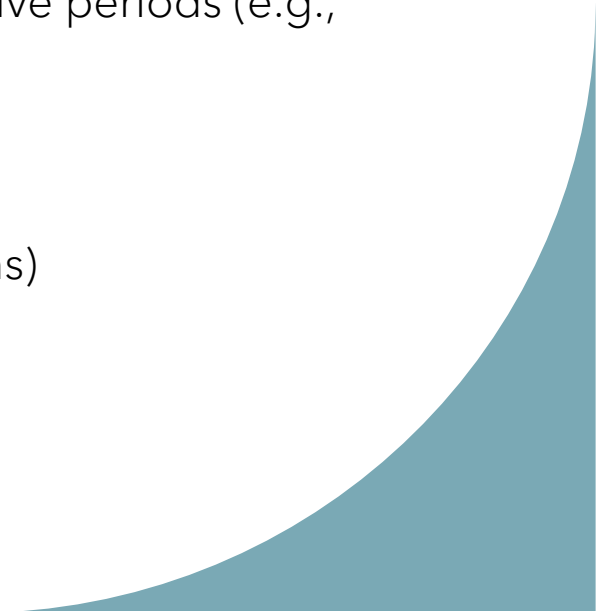
- AOL goes live in 1989 (no email until 1993...)
- CompuServe also went live in 1989 but had Email from day 1 (but only to/from CompuServe users)
- Email was Text only until 1992 (!)
- WWW live 30 April 1993
- Web mail appears in 1995
- Hotmail arrives in 1996
- Outlook and Yahoo Mail arrive in 1997



Electronic Mail (Email) version 1

- Two “protocols” got standardized for email in the mid-late 1980s
 - SMTP - Simple Mail Transfer Protocol - to send emails
 - POP3 - Post Office Protocol 3 - to collect/deliver emails
 - Email was **text only** initially until 1992 when MIME was adopted
 - MIME = Multipurpose Internet Mail Extensions
 - Allowed for attachments and for “rich text” (bold, italic, colors, etc.)
 - In use, POP3/SMTP email was very similar to the way Royal Mail and the Post Office worked with paper mail – **i.e. when your email was delivered the email server no longer had a copy (by default)**
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Electronic Mail (Email) version 1 (cont'd)

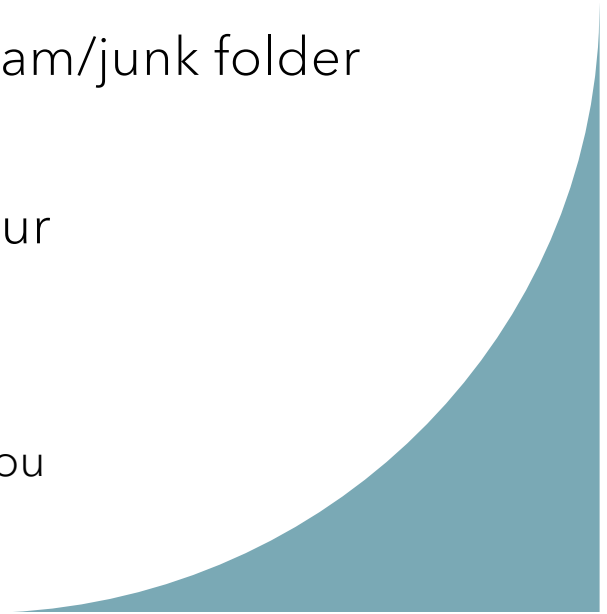
- "Paper" letters need name and address of recipient(s) and so do emails
 - Email addresses have the form <user name>@<address> where:
<address> is of the form <domain name>.<top level domain>
 - **User name** (Local Part): The unique identifier before the @.
Allowed: a-z, 0-9, . (periods), _ (underscores), - (hyphens), + (plus signs).
Restrictions: Cannot start or end with a period, or have consecutive periods (e.g., ..).
 - **@ Symbol**: A single @ separates the username from the domain.
 - **Domain Name**: Identifies the mail server.
Allowed: Letters, numbers, hyphens, and periods (for sub domains)
Restrictions: Cannot start or end with a hyphen.
 - **Top-Level Domain (TLD)**: The last part (e.g., .com, .net, .uk).
Must be at least two characters.
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Email version 2 (IMAP)

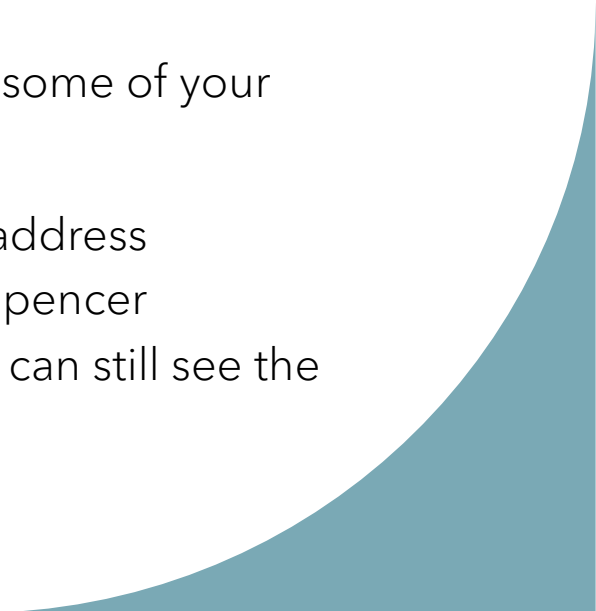
- POP3 was fine until people started using more than one “device” to read their email
 - You could set your devices to leave email on the server for a few days (before deleting it) so that you could “collect” the same emails on all your devices, **but...**
 - You could only see the emails that you sent on the device you used to send the email 😞
- In 1988 **IMAP** (Internet Message Access Protocol) was defined and IMAP v4 went mainstream in **1996**.
- IMAP servers keep copies of everything and sync with as many devices as you have and solved the “sent” email problem as it allowed the SMTP server to hand off sent email to the IMAP server to save in a sent items folder

Email version 2 (cont'd)

- Using IMAP means your email provider can see **ALL** your email (that you don't remove from the server)
- This is both good and bad...
 - Good - allows for Spam analysis and training spam detection programs, including you dragging emails to your spam/junk folder (as training hints)
 - Bad - the mail provider (e.g. Google) can read all your (unencrypted) email and do all kinds of analytics!!
 - Most free email servers store unencrypted emails
 - You can pay to get encrypted email services if that worries you

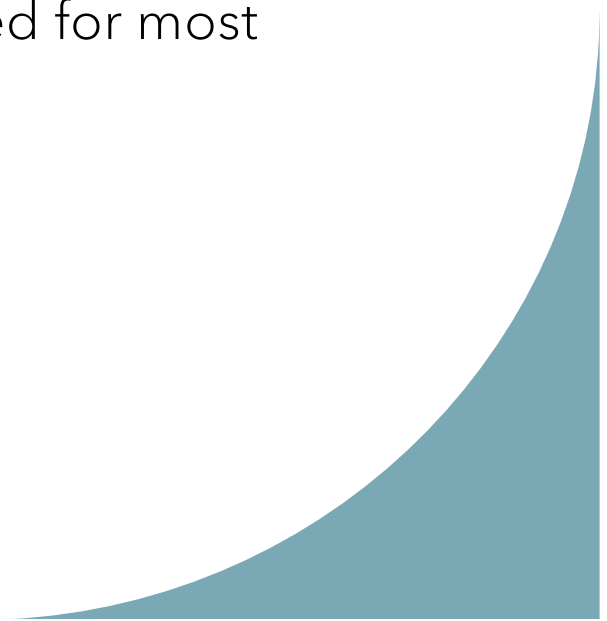


Google Mail (Gmail)


- Google likes to innovate and is so big that they don't have to use IMAP for Gmail
 - If you use Gmail apps or mail.google.com in a browser you will be using Google's mail protocol.
 - Google does allow for IMAP access to your email but you won't get all of the same features that using your Gmail app/browser gives you
 - It is also difficult to use Gmail with non-Google email accounts as some of your favourite Gmail features won't work with the IMAP email account
 - **Gmail bonus:** you can use "+" for identifying who has your email address e.g. use name+MandS@gmail.com when registering at Marks & Spencer
Emails from M&S will appear in name@gmail.com Inbox, but you can still see the +MandS part and use that for rules/filters
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Email servers and Email clients how they connect

- Email is an example of client-server architecture where your device is a client and the SMTP/POP3/IMAP computers are the servers
- Popular email clients like Outlook, Apple Mail, Spark, Thunderbird can auto connect to many popular email providers
- This is possible because there are standard “ports” used for most common internet services
- POP: 995 (or 110 unencrypted) - POP3
- IMAP: 993 (or 143) - IMAP4
- SMTP: 587 (STARTTLS) or 465 (SSL) (or 25)



Email servers and Email clients ... (cont'd)

- If your email client can't auto connect to your mail server then you need to set them up manually
 - Server names are up to the email provider but are typically things like mail.ntworld.com, smtp.virginmedia.com, etc. and you can usually find the server settings by googling for them
 - E.g. googling "btinternet server settings" gives [this](#)
 - Googling "virgin media email server settings" gives [this](#)
 - Then you go to manual settings for your email account in your email client, e.g. for Outlook you do something like [this](#)
 - Demo...
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Email servers and Email clients ... (cont'd)

- Just as we did with paper, you can “file” emails
- Most email clients let you create “folders” that you can then drag emails into
 - Using IMAP the folders will usually also be created on the mail server so will sync across your devices
 - NB: **Gmail** does **not** use folders - they use tags instead (can be an issue using IMAP for Gmail)
- Most email clients will also let you create “rules” so that your emails can be automatically “filed” when they arrive
 - When you do that they also show you which “folders” have new messages as these will not be in your Inbox
 - The way rules are created is Email client specific



Topics for future meetings

