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INTERNET FUNDAMENTALS – How does email work?

Email is a fundamental component of the Internet and is something we all take for granted on an hourly basis in our modern lives, but how does it work? Here is a simple and hopefully clear explanation.

The first step is composing an email. Why don't we compile a message to tell Manchester United's famous number 9 Romelu Lukaku what a brilliant job he is doing.

```
From: thetoilet@activereach.net

To: romelu.lukaku@manutd.com

Subject: Well done mate

Message: You're doing a brilliant job chap, definitely much better than
Mohammed Salah. Thanks for all your hard work.
```

You pop an email address in the "To:" field. An email address is made up of two main components. Let's take a look at our example recipient.

manutd.com is the email domain and romelu.lukaku is the email account contained within that domain. It is a common misconception that domains and websites are one and the same but they are in fact different. It is normal for a domain to exist without a website and vice versa.

When you hit send on your email software, your email message is uploaded to the Simple Mail Transfer Protocol server, or SMTP server as it is commonly referred to, that you are configured to use. The SMTP server queues all outgoing messages for delivery while it attempts to figure out where in the world it should go.

How does the SMTP server know where to send everything? Well this is where the email domain is important. Every single email domain on the Internet has a record contained within it called a Mail Exchanger record, or MX record for short. This MX record contains the information that is required for delivery. In our example:

```
MX lookup for manutd.com:

10    avscan-alpha.visp.viatel.net

10    avscan-beta.visp.viatel.net
```

Here we have conducted a search called an MX Lookup which tells us where on the Internet email for manutd.com should be delivered. Think of it like a postal address. You can do an MX lookup yourself on any domain you wish by visiting mxtoolbox.com.

Once the SMTP server knows where to deliver your message, it will attempt to do so, and the email will be queued on the relevant server for delivery. The recipient server knows all about the individual email accounts and the next time Romelu clicks "Send & Receive" on his email software, he will receive the email message. I think we made his day, look at his little face.

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