What is e-mail authentication?
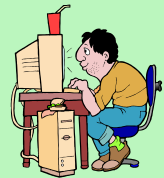
John R. Levine
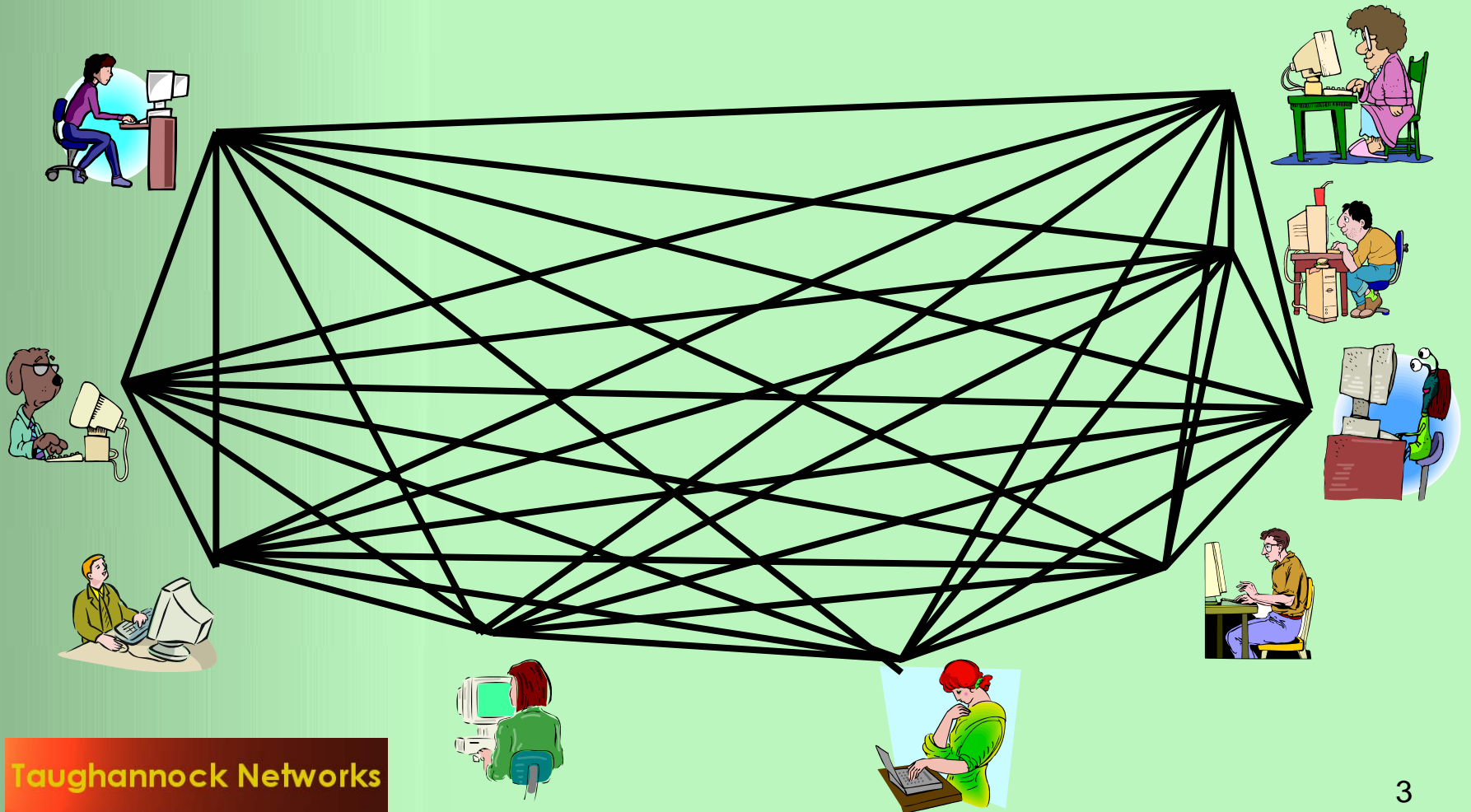
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FTC Authorization Summit
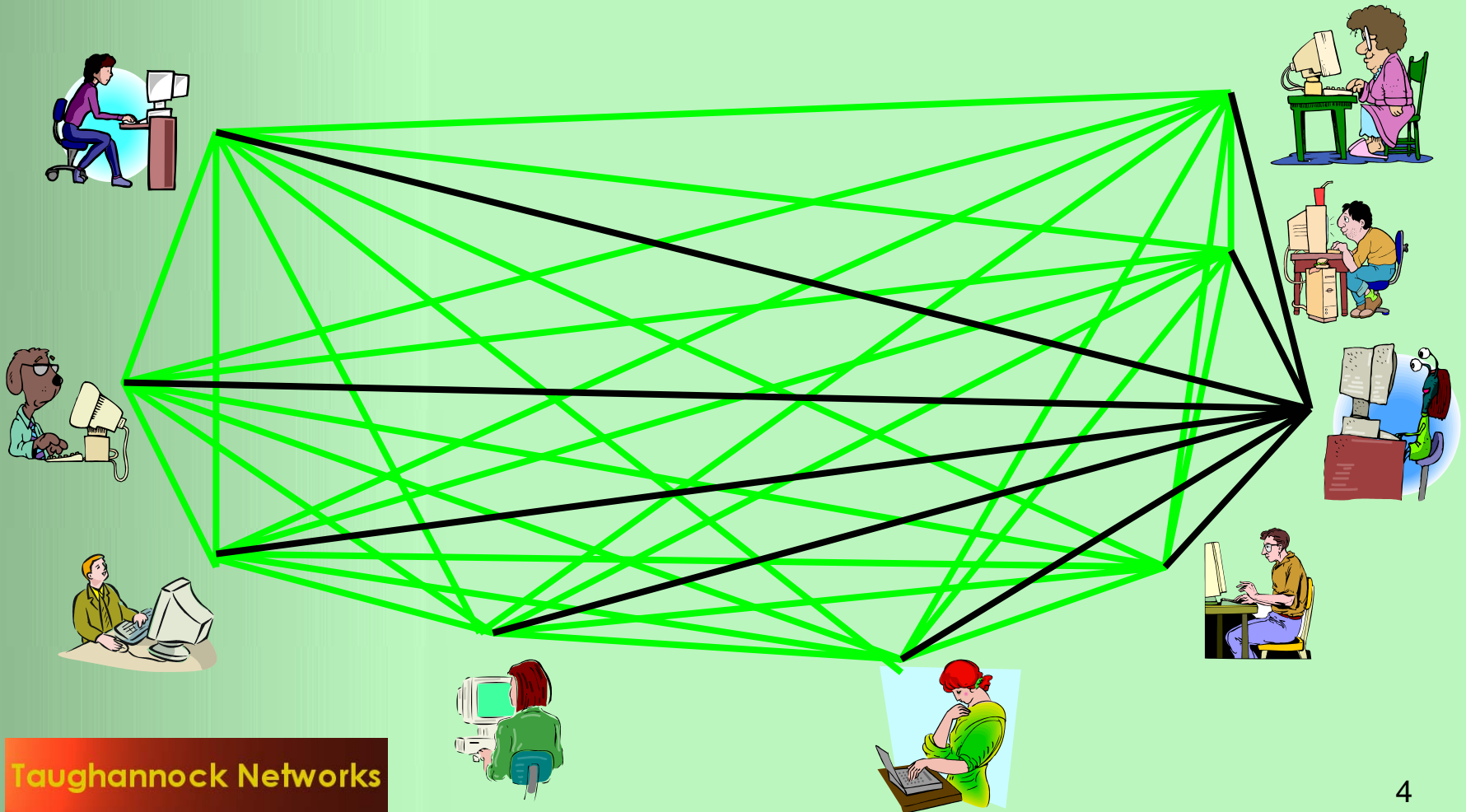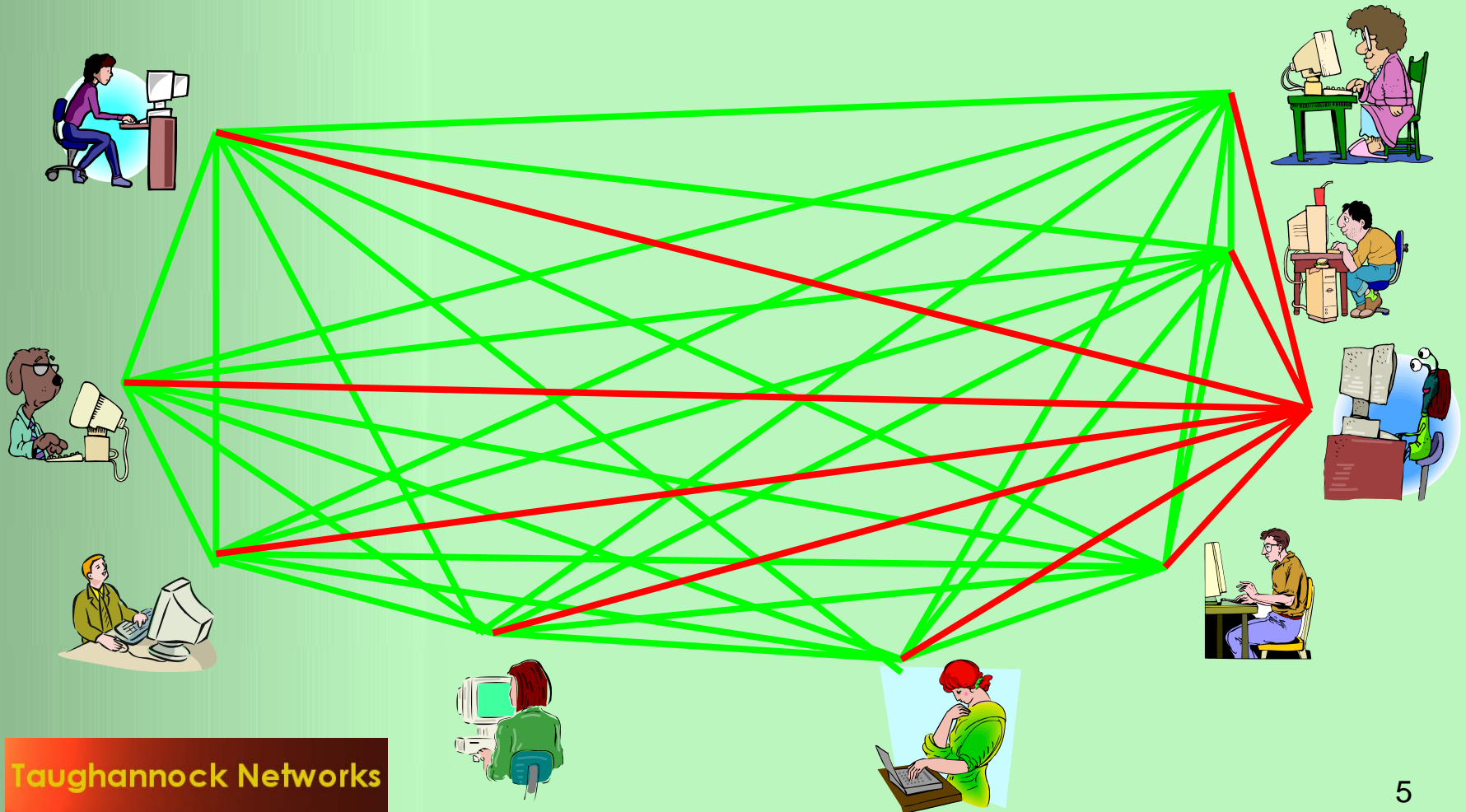
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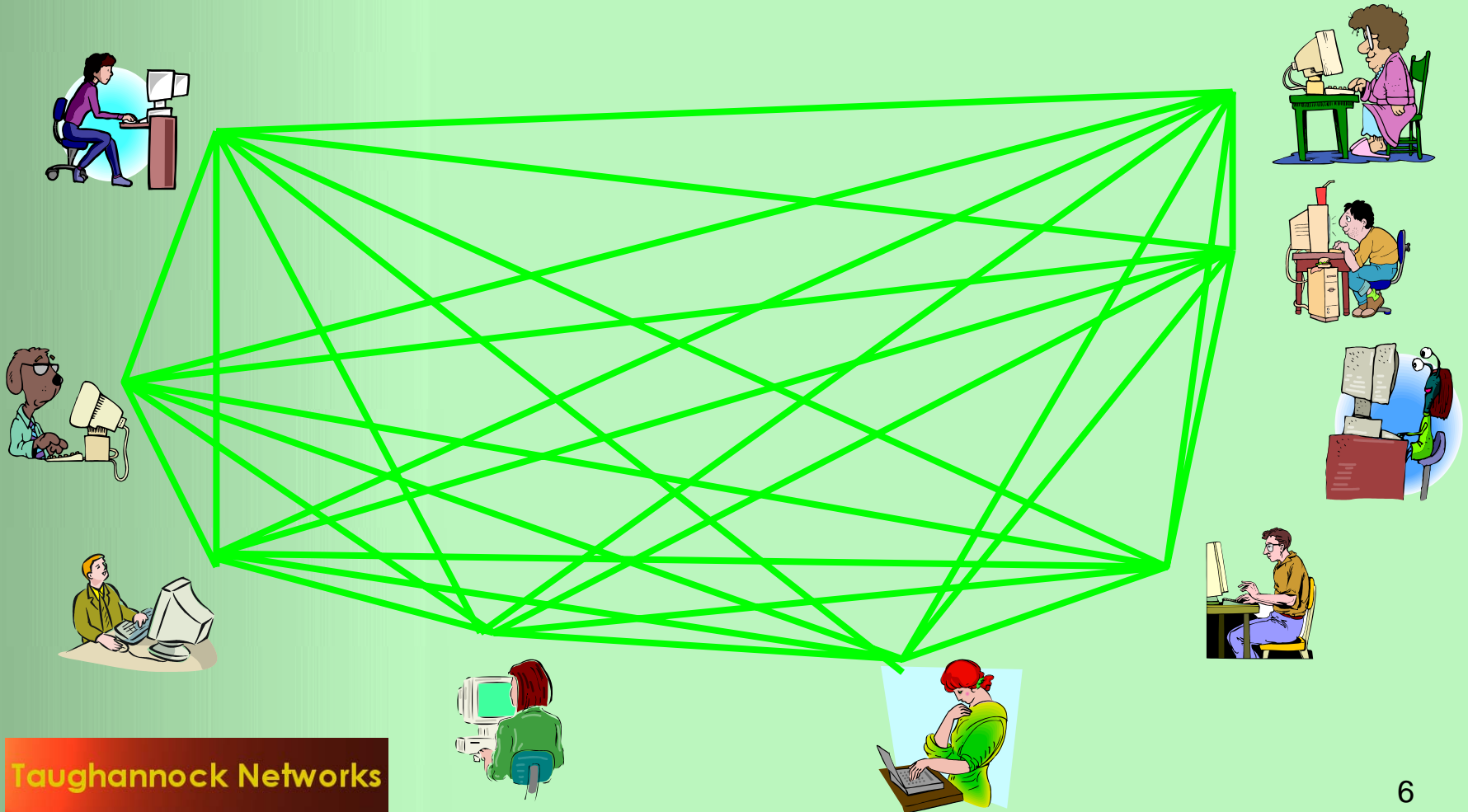# Why e-mail matters

Why e-mail matters

Identify the good mail

4

What's left must be bad

5

So get rid of it

Leaving a land of peace and plenty
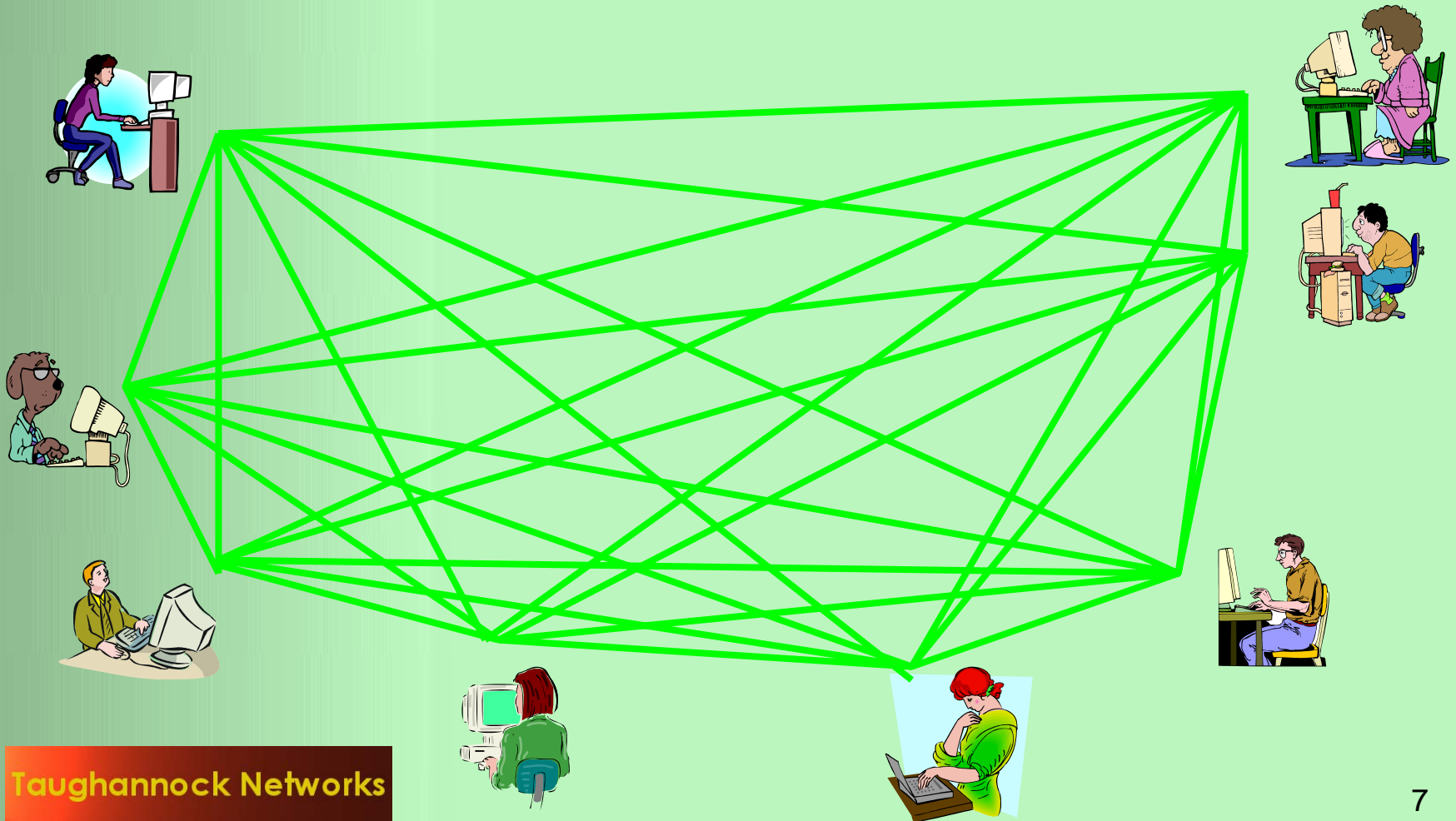
Well, that's the theory
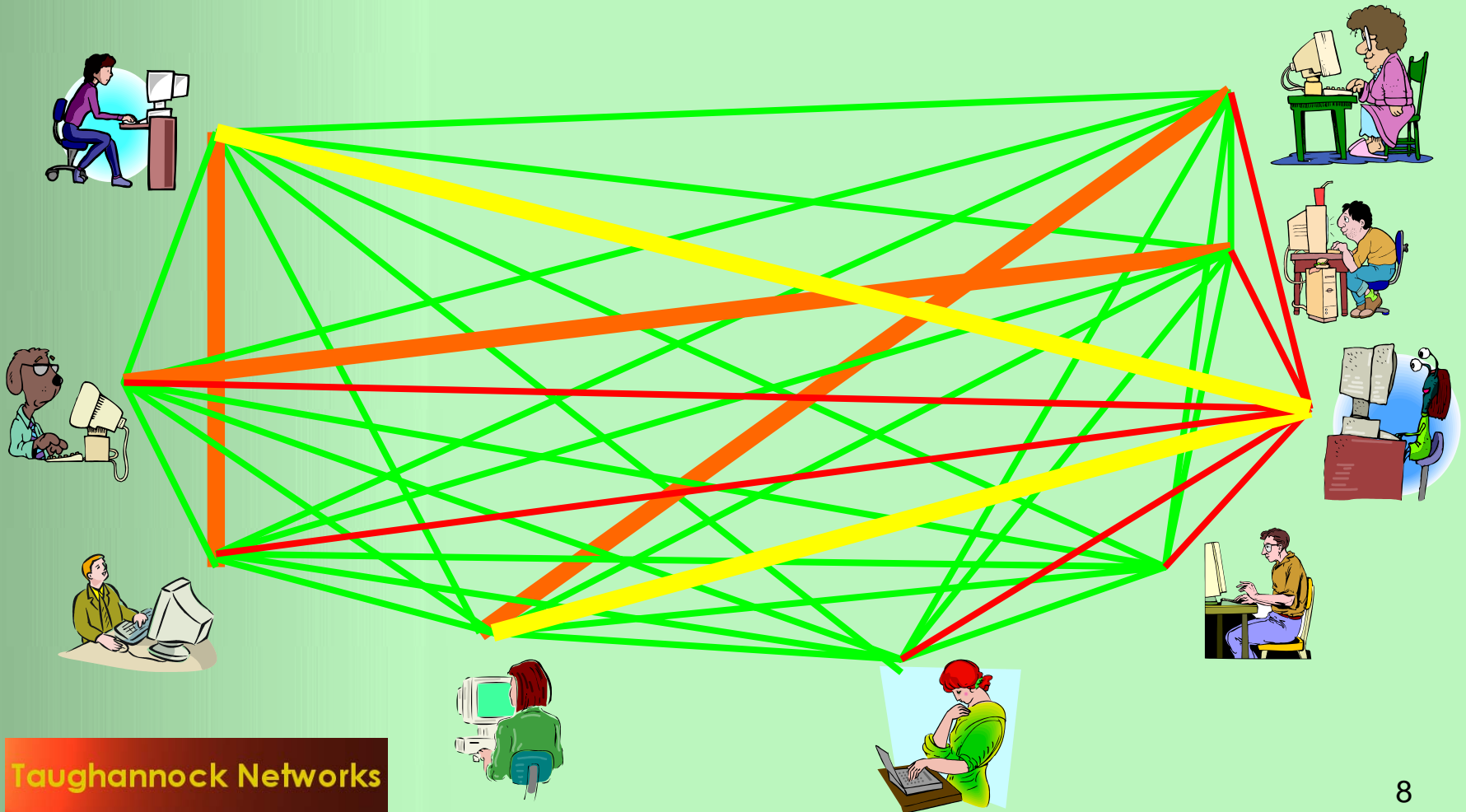
How can we do that?

- Authentication
- Authorization
- Accreditation
- Reputation

Authentication

- "`fred@phoo.com` really did send this message"

- Or maybe, "someone at `phoo.com` really did send this message"

Authorization

- "phoo.com is allowed to send mail from the computer that sent this message"
- Or maybe just:
  "that computer is allowed to send mail"

Accreditation

- "These are computers you can trust to send you mail"
  - At the initiative of senders

Reputation

- This message really is from phoo. com. Is their mail worth reading?
  - At the request of recipients

Dangers and pitfalls

- The e-mail world is very big and surprisingly fragile
- Grafting security onto an insecure system is hard
  – Like making paper mail anthrax-resistant
- One man's security hole is another man's handy facility
  – Identify things that work now but would break

How We Make Changes

- Lots of experiments
  - Always surprising side-effects
- Coordination among many providers
  - It won't work unless it can work for everyone
- Proprietary approaches **can't** work
  - Because it won't work unless it can work for everyone

One approach or many?

- If we had a magic bullet, we'd use it
- Different approaches can all co-exist
- Try them, use the ones that seem promising
- Bad guys will counterattack
  - Harder to counterattack them all at once

Role of various organizations

- Software developers
  - Implement possible approaches
- ISPs and network operators
  - Do the experiments and tell us what happened

Role of various organizations

- IETF, ITU-T, …
  - Codify successful practice as standards
  - Clarify specs, provide political cover
- FTC and other gov't
  - Help us comply with relevant laws
  - Document where law and tech meet
    "If you hack this authentication system, you've broken that anti-fraud law"

So let's get going

- Build software

- Do experiments

- Report and compare results

- Standardize what works

- … and use it

What is e-mail authentication?

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