

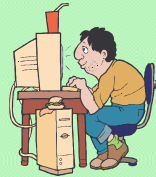
What is e-mail authentication?

John R. Levine

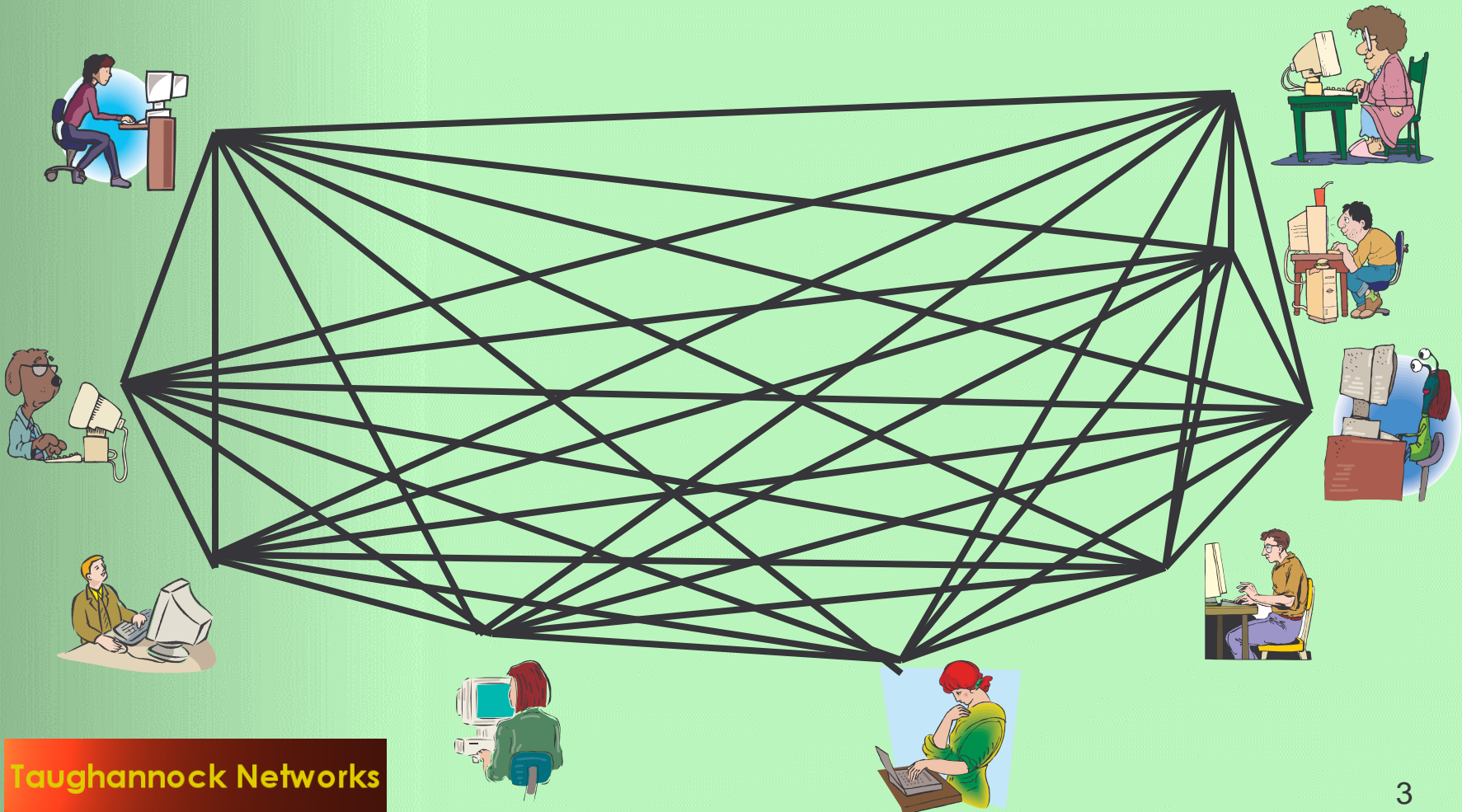
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Why e-mail matters



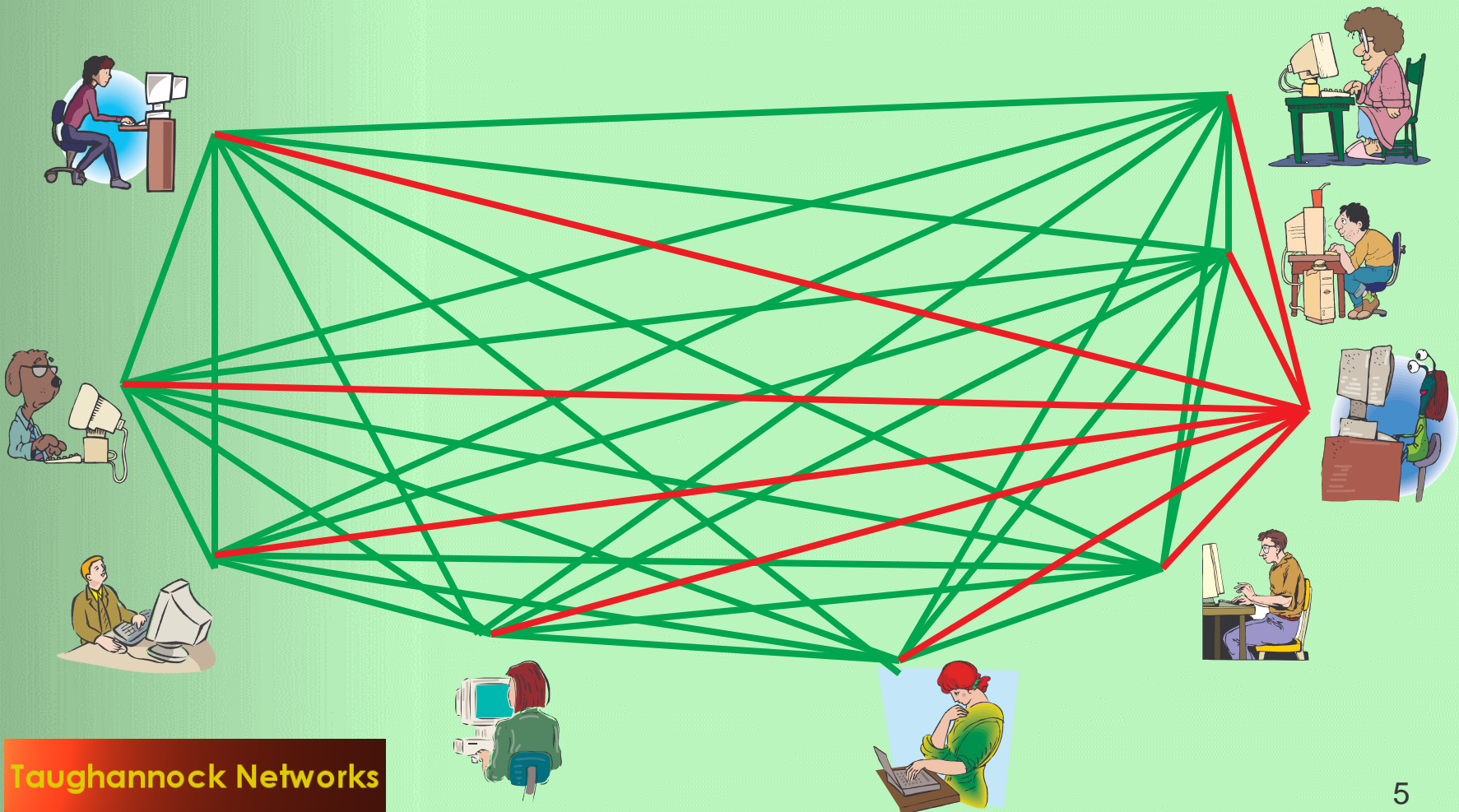
Why e-mail matters



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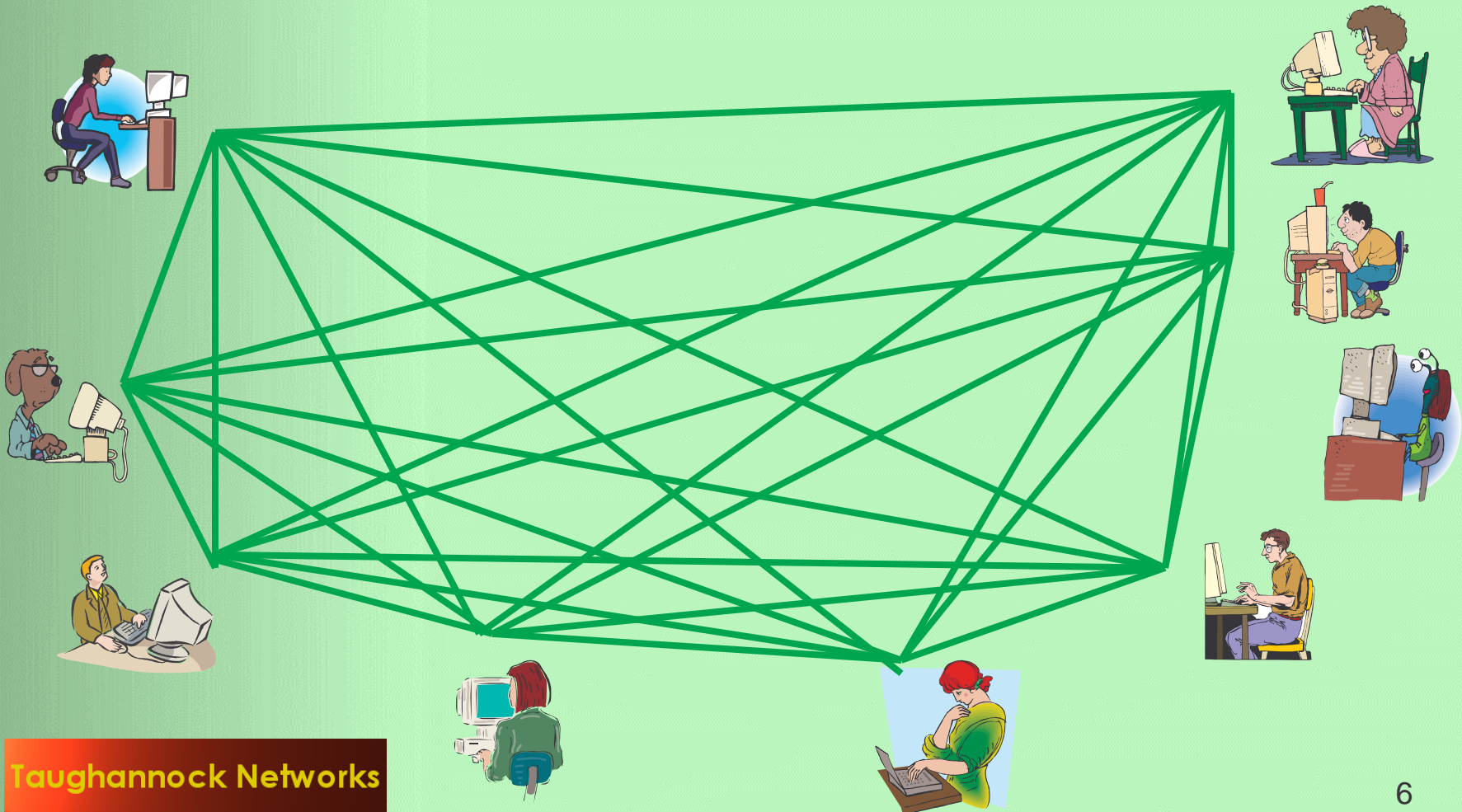


What's left must be bad



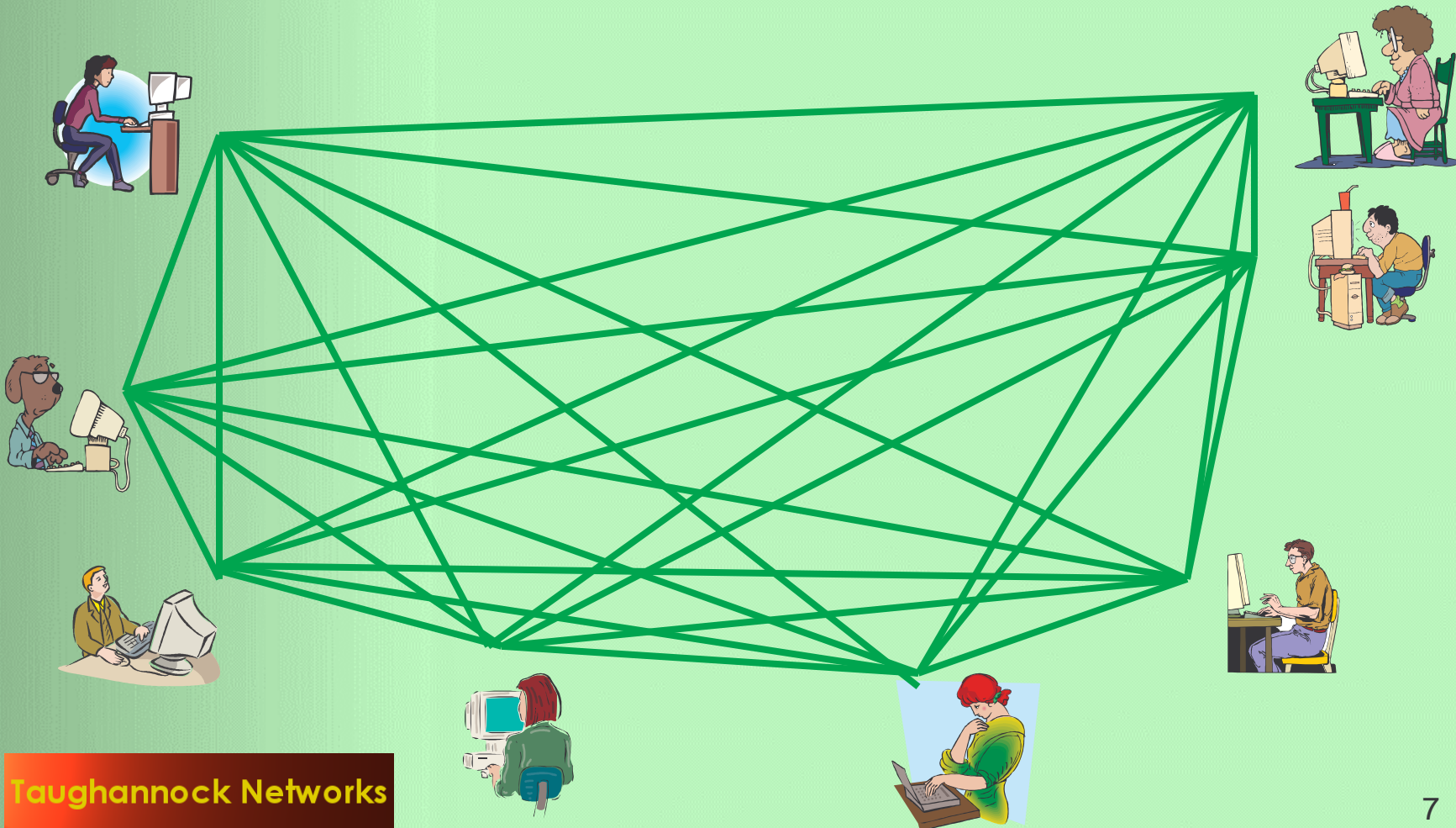
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So get rid of it



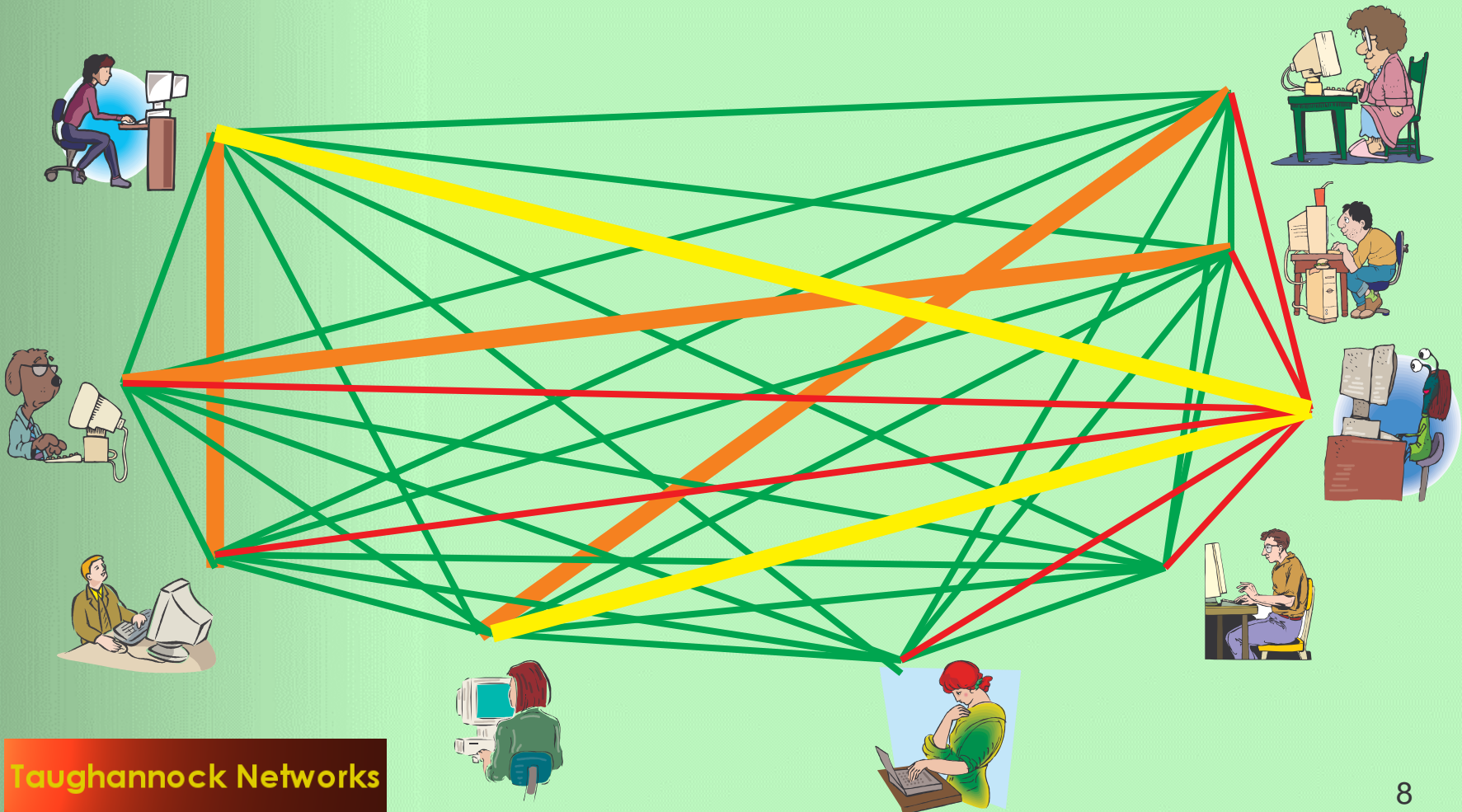
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Leaving a land of peace and plenty



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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

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