

CSCI 466: Networks

Lecture 1: Introduction, Syllabus, and Logistics

Reese Pearsall
Fall 2022

Communication in the Digital Era



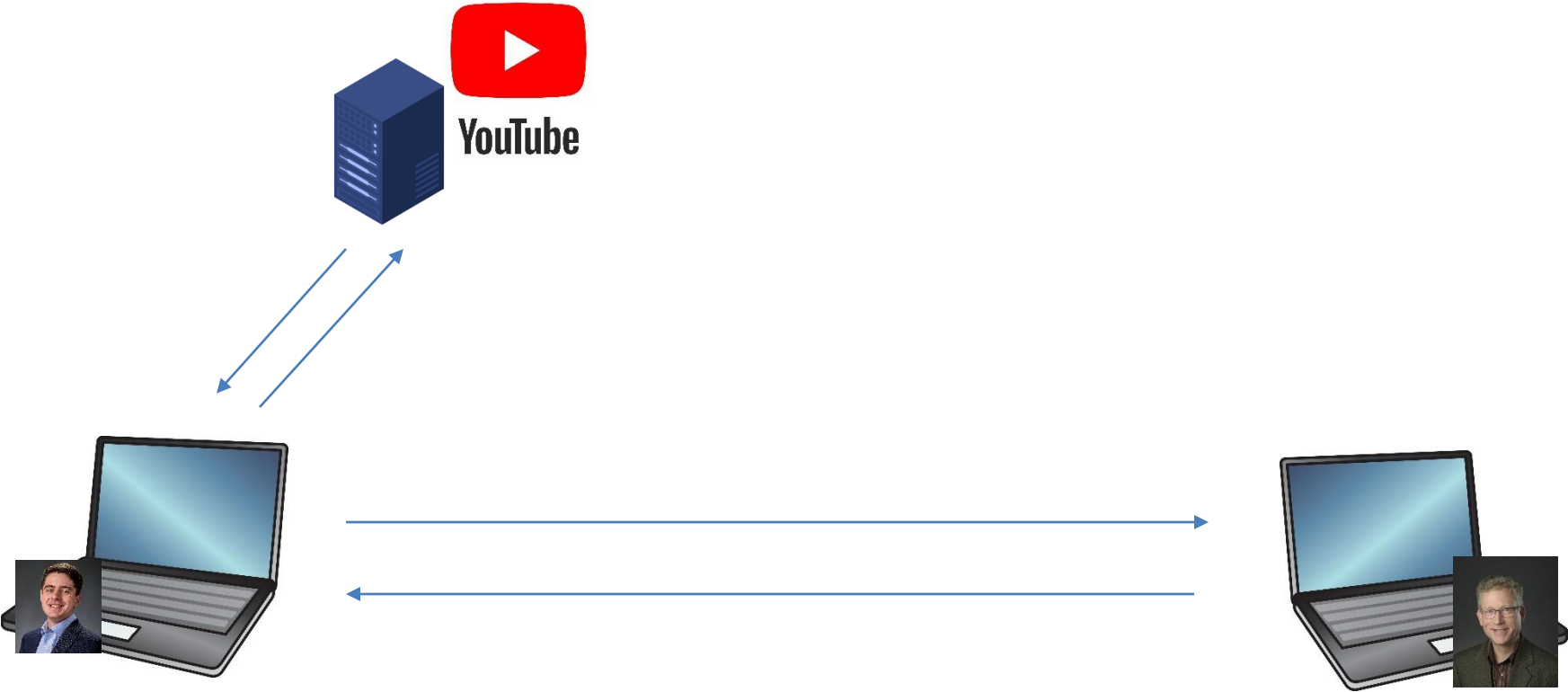
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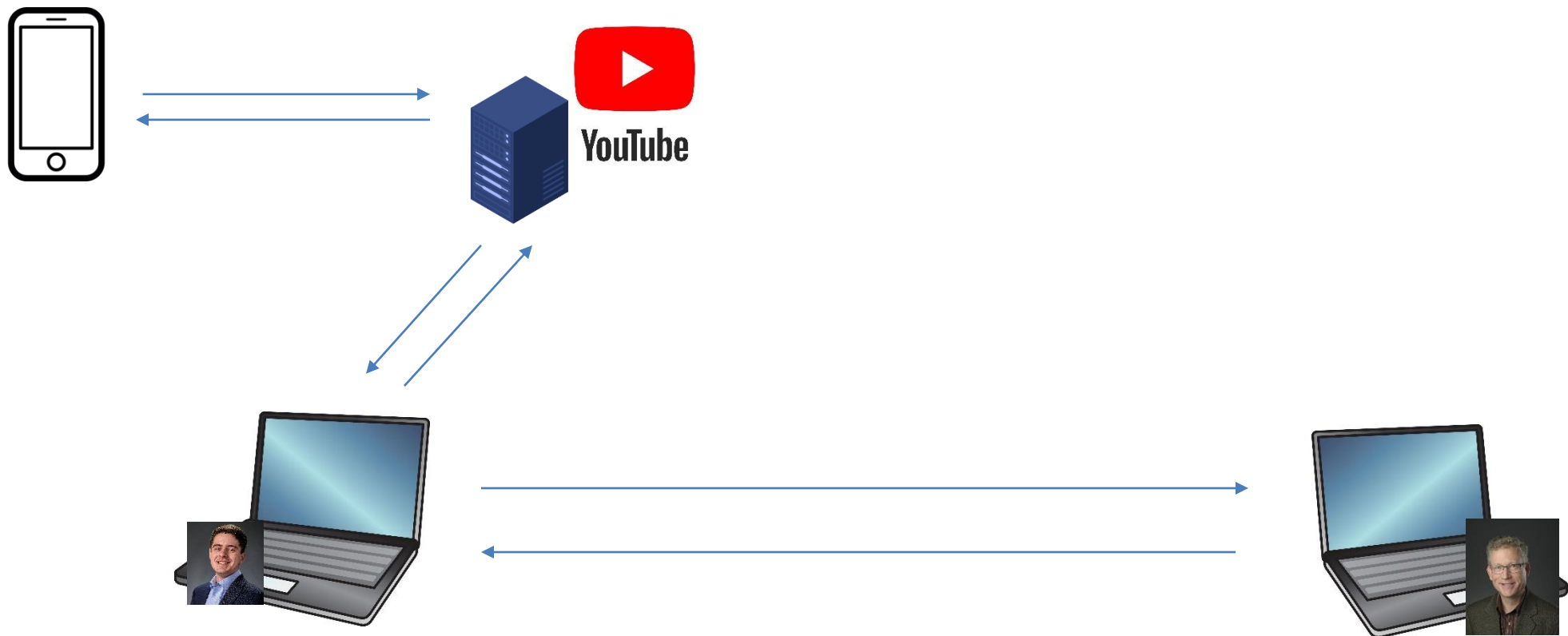
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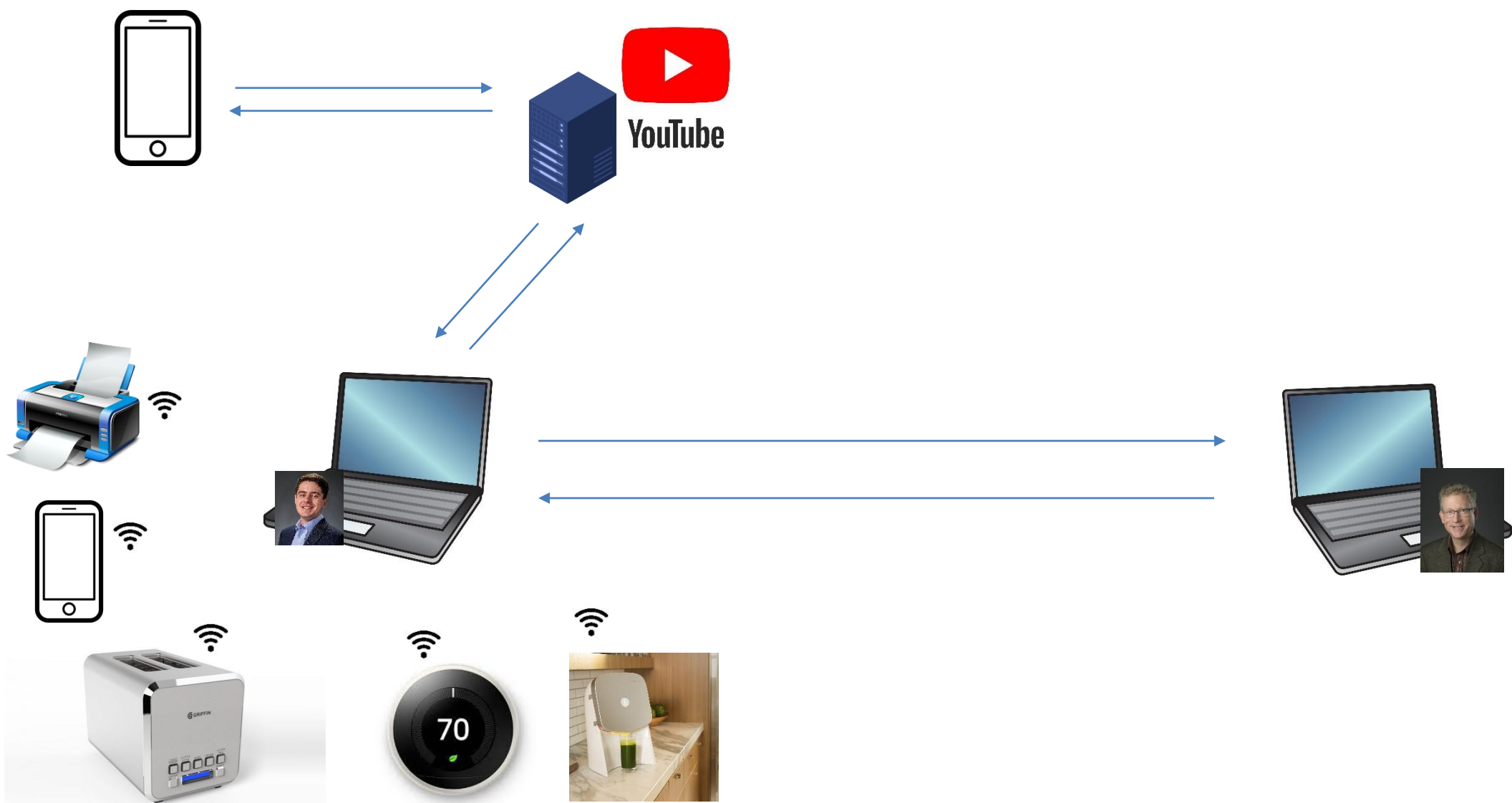
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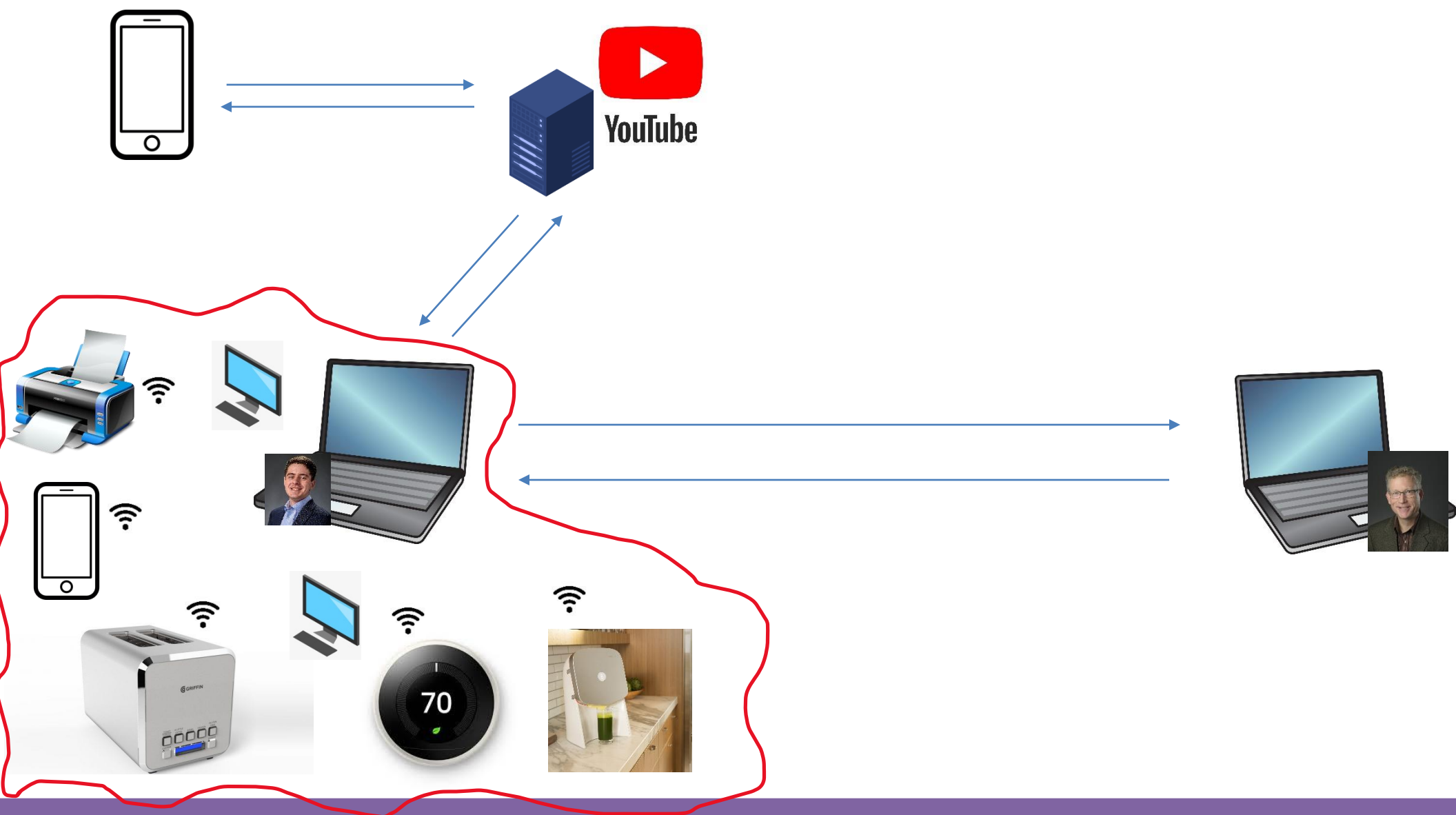
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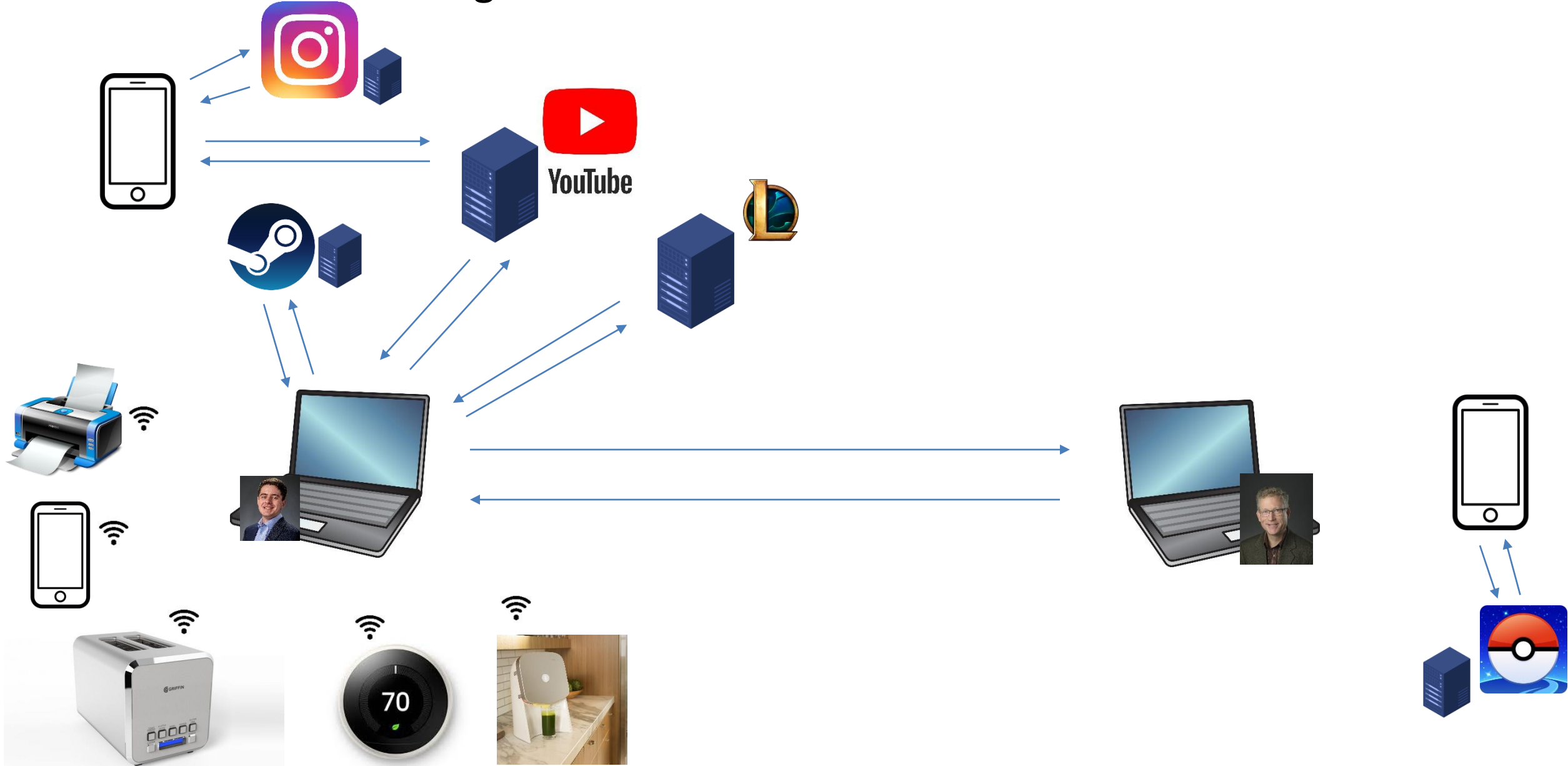
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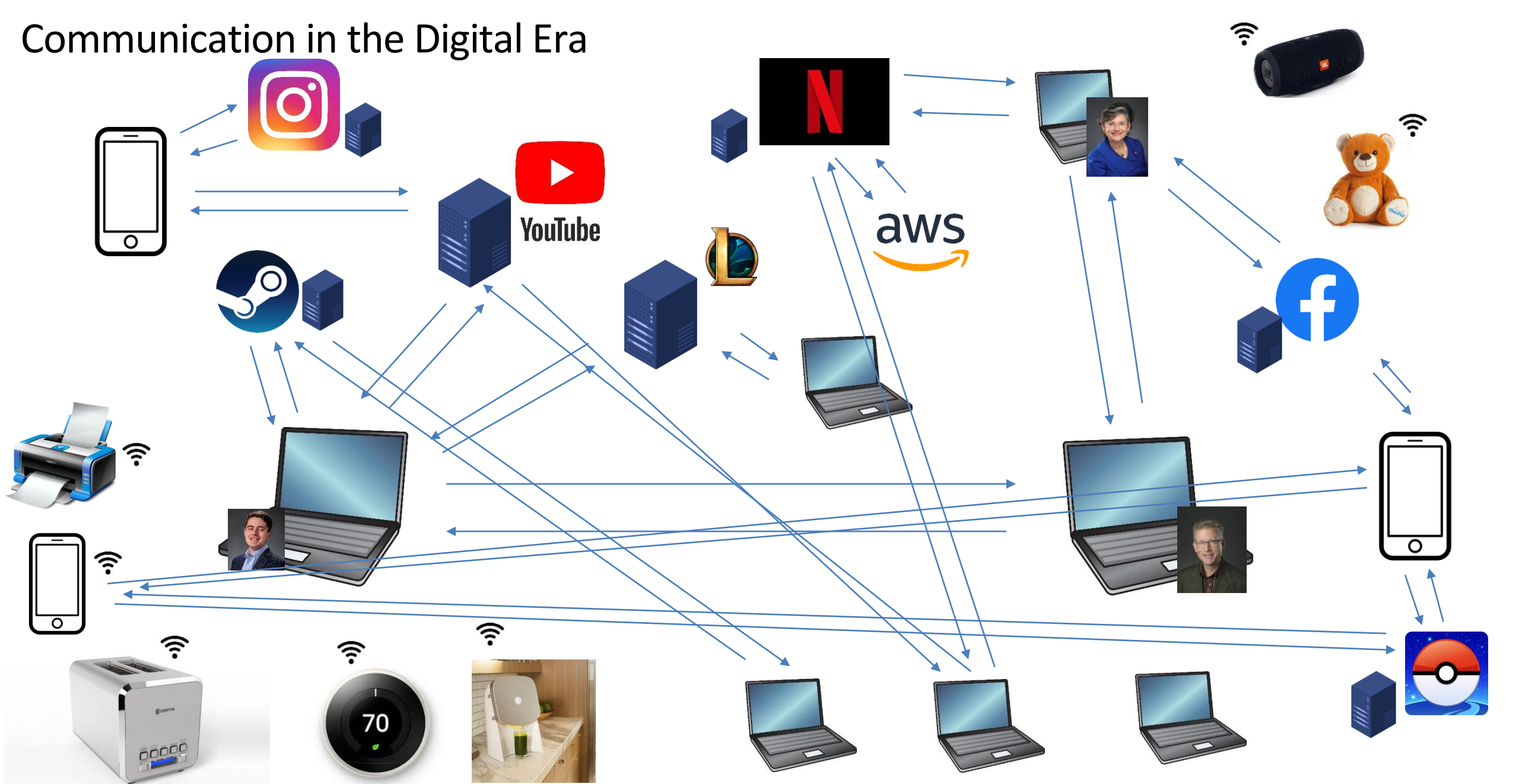
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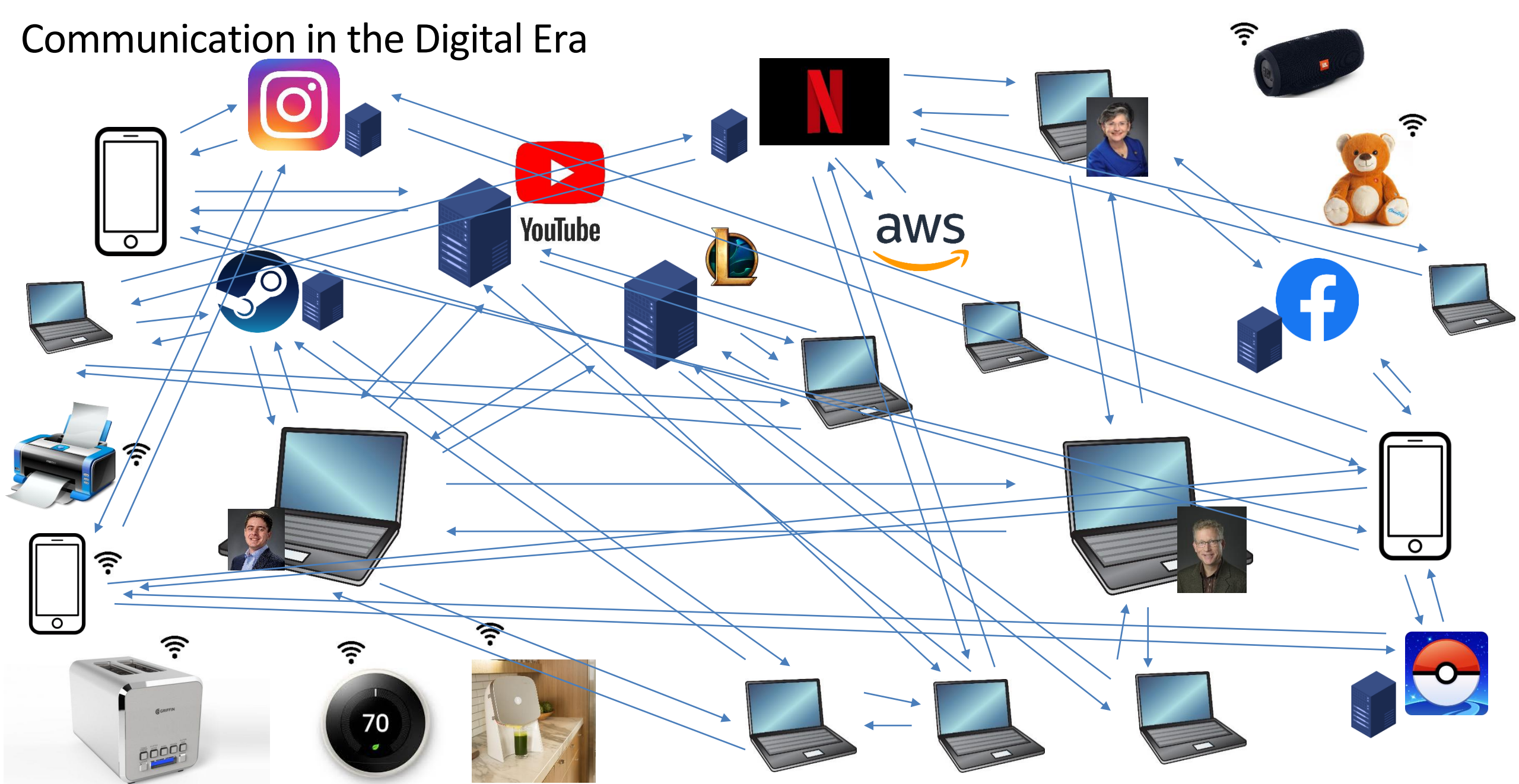
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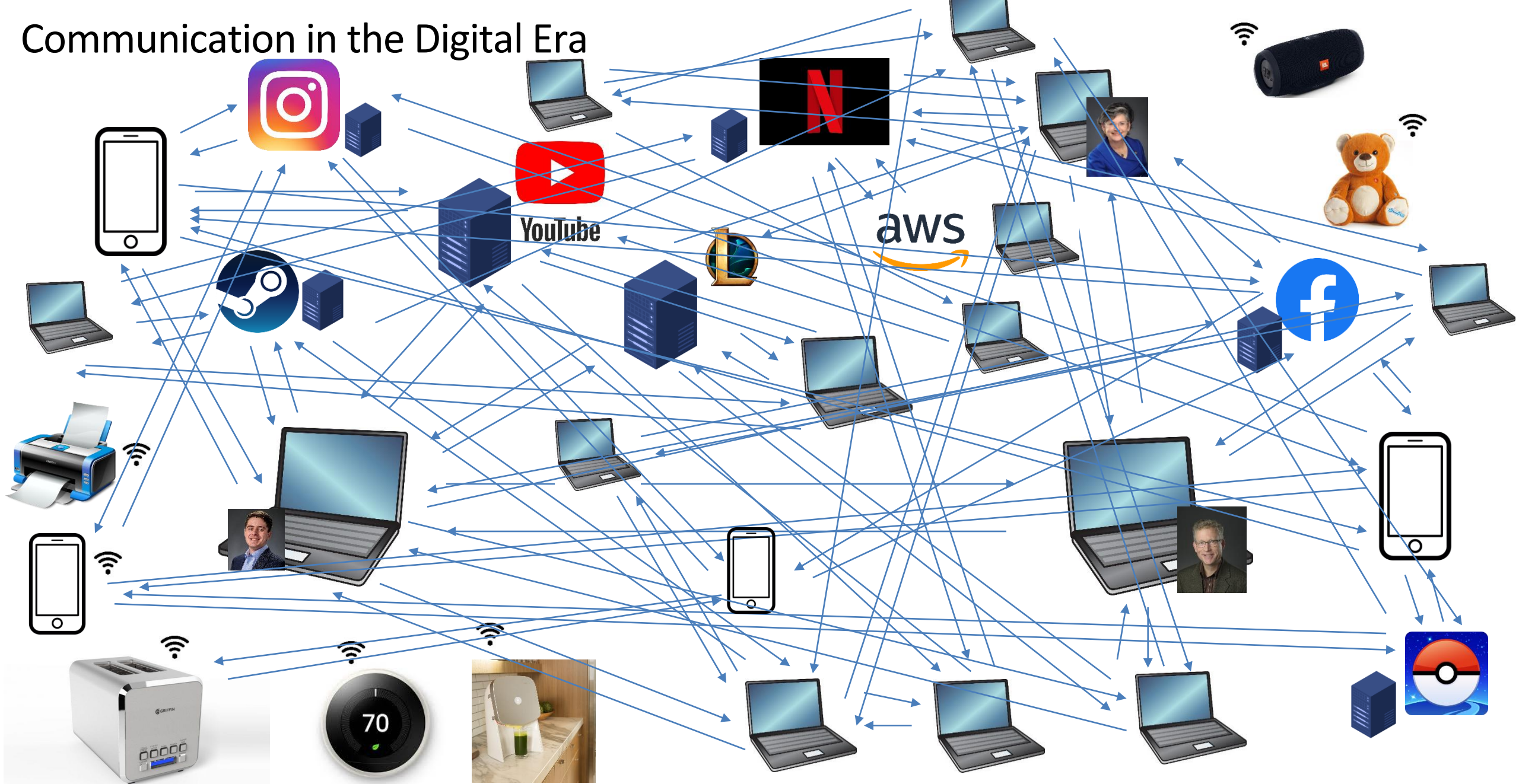
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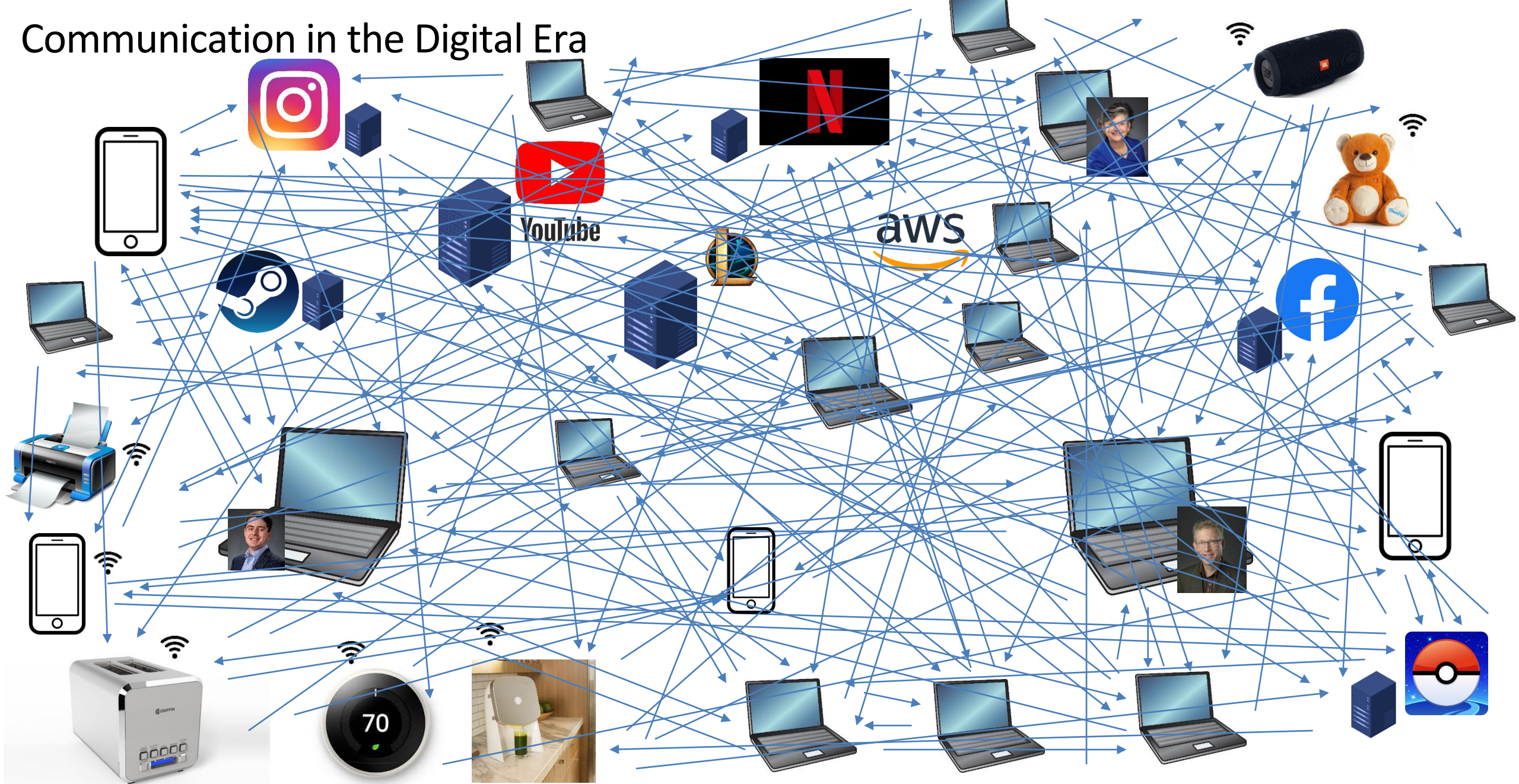
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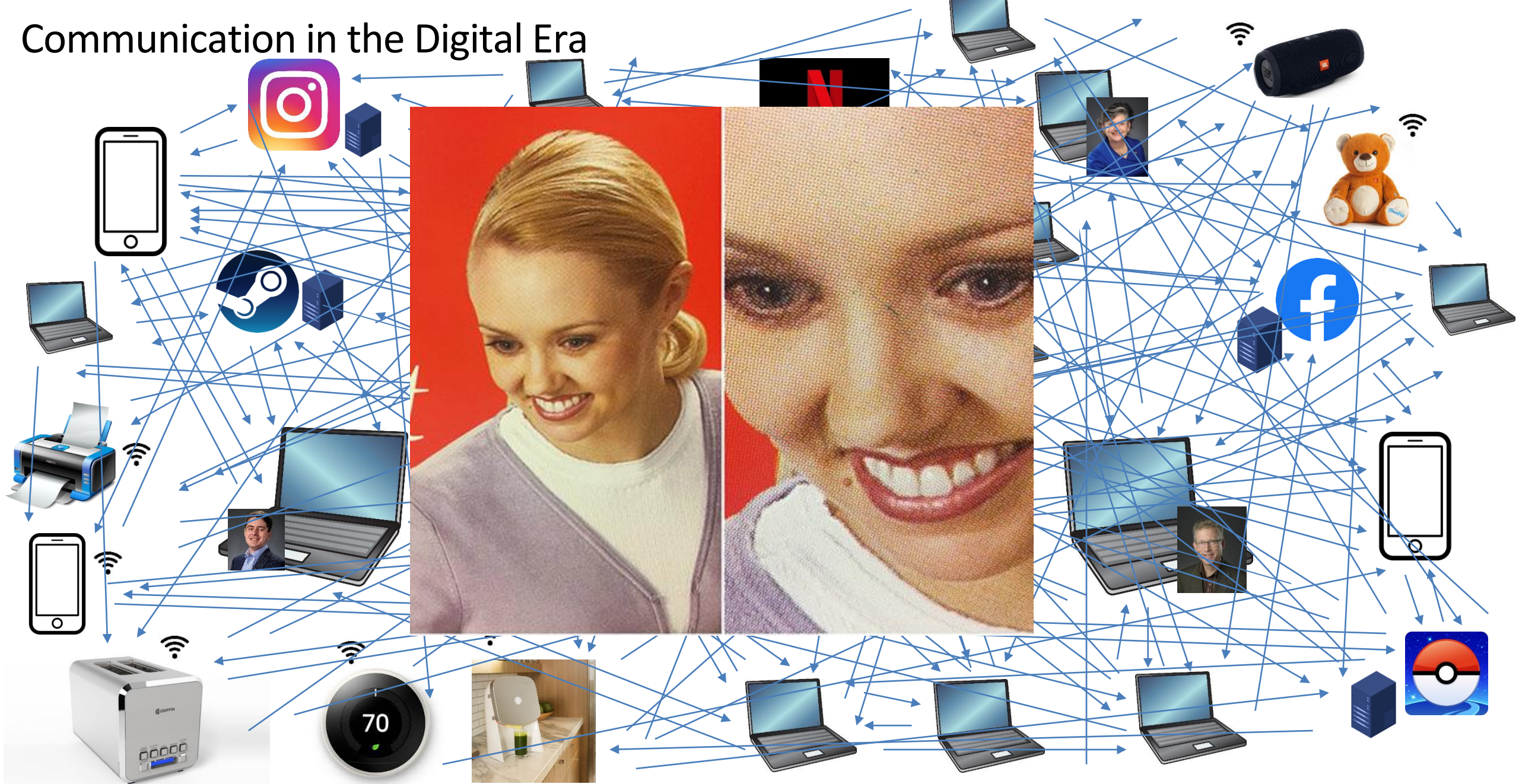
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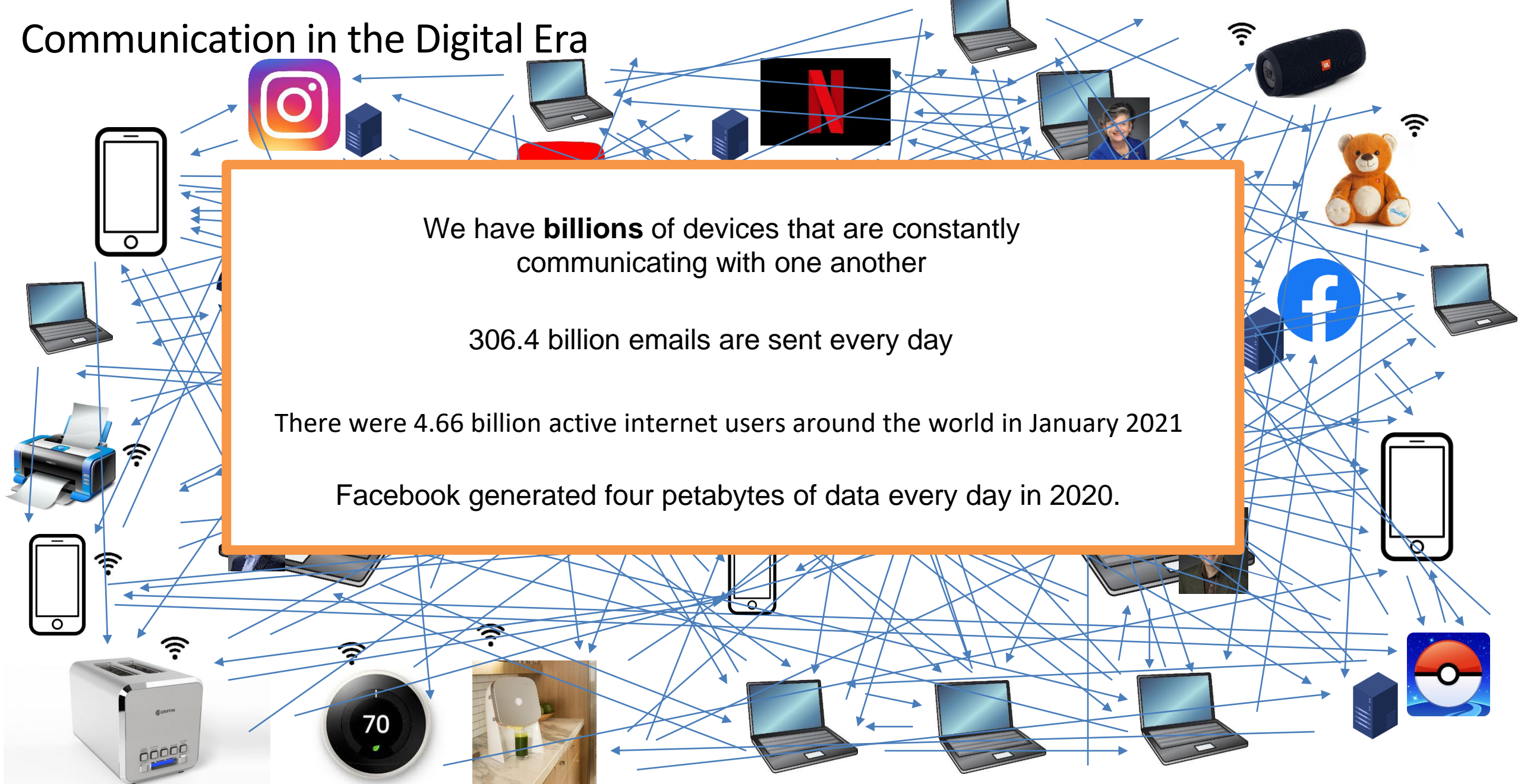
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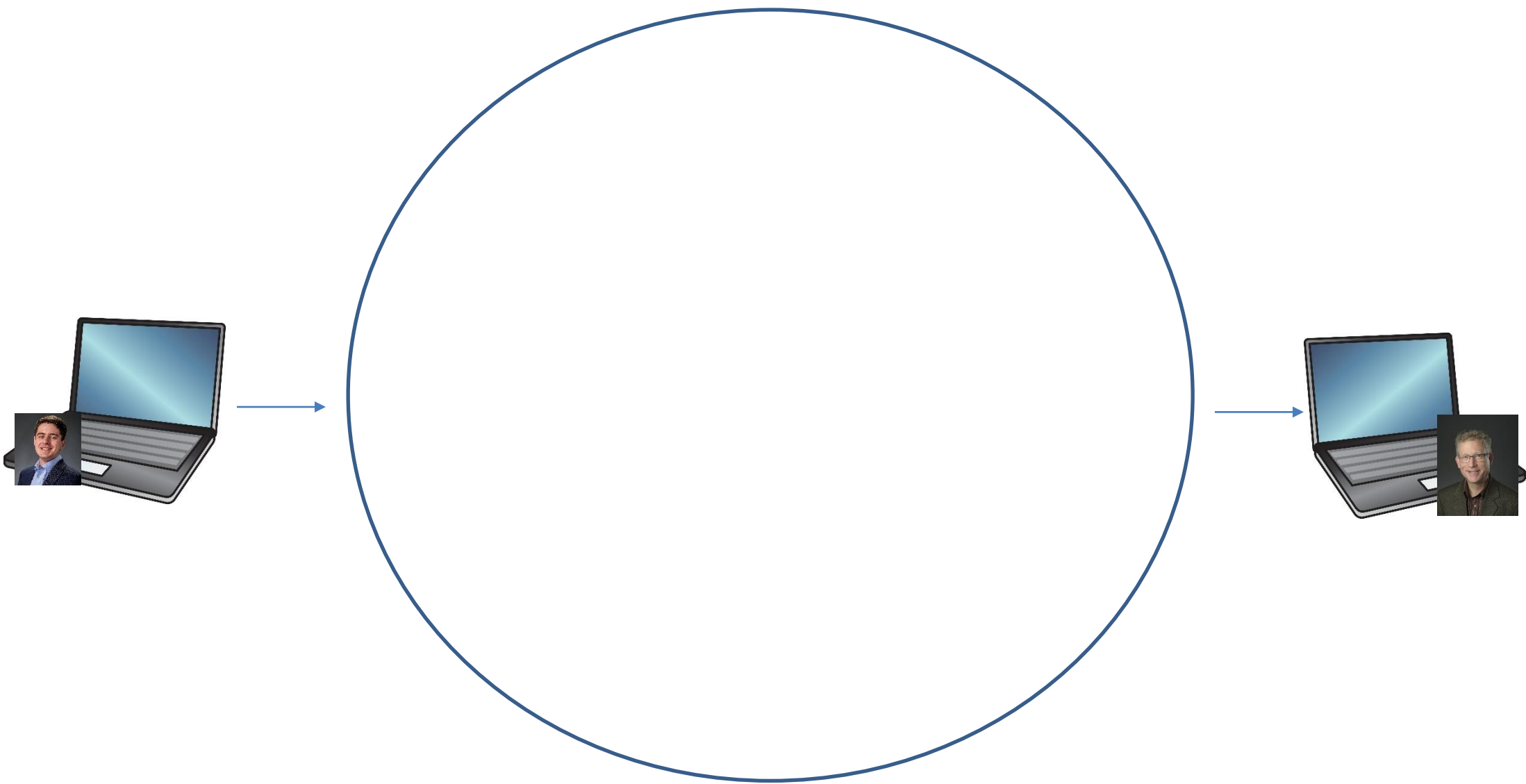
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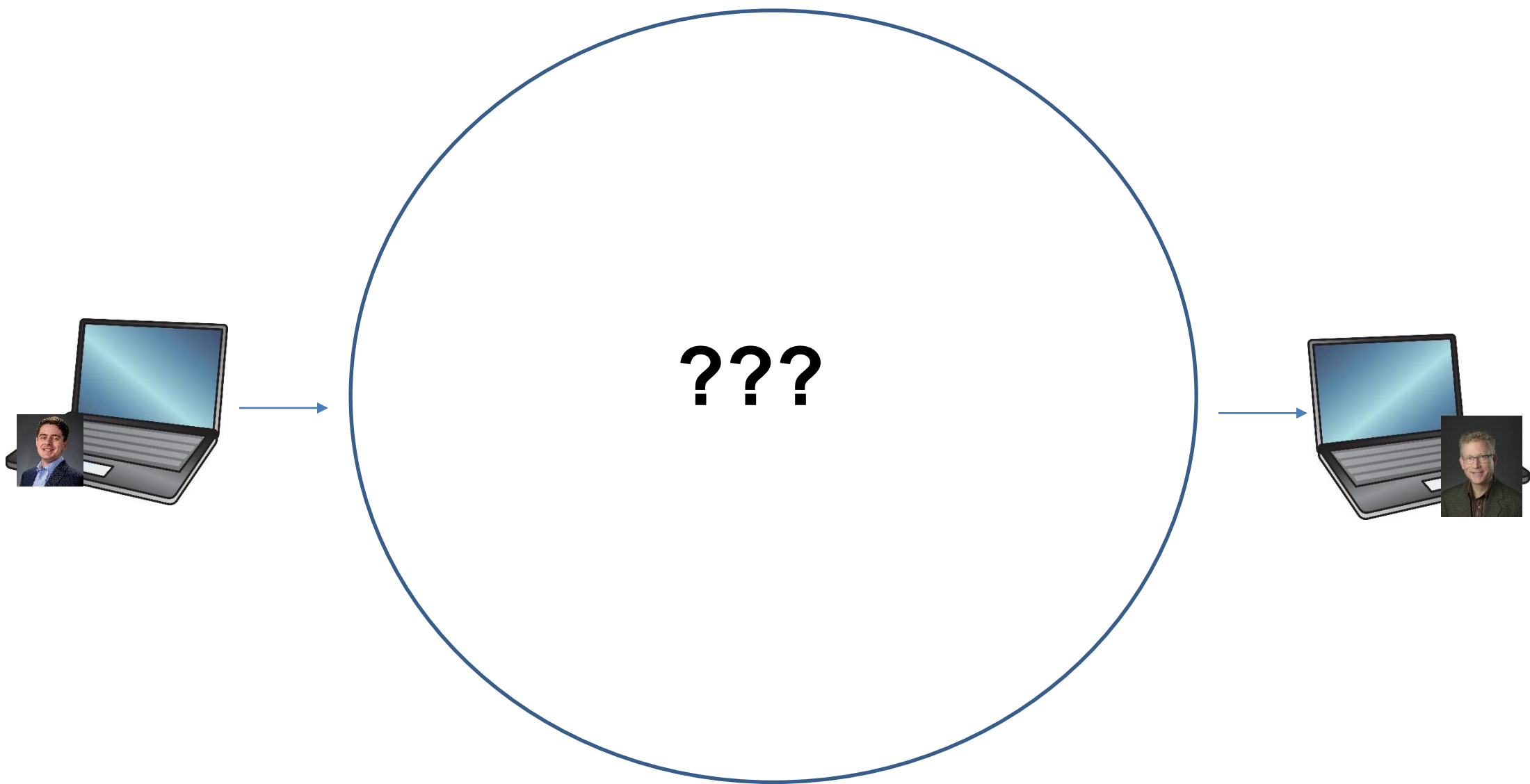
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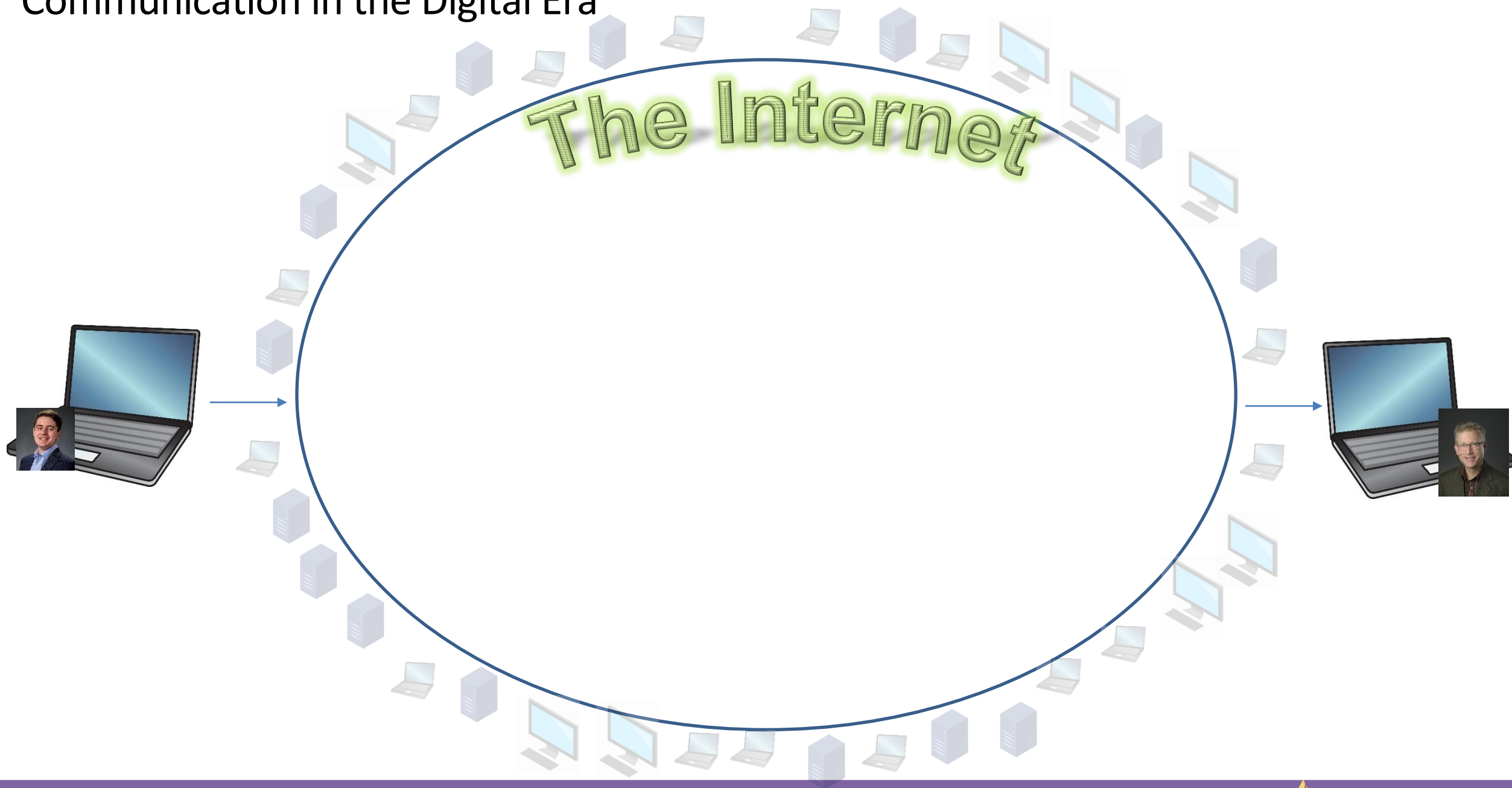
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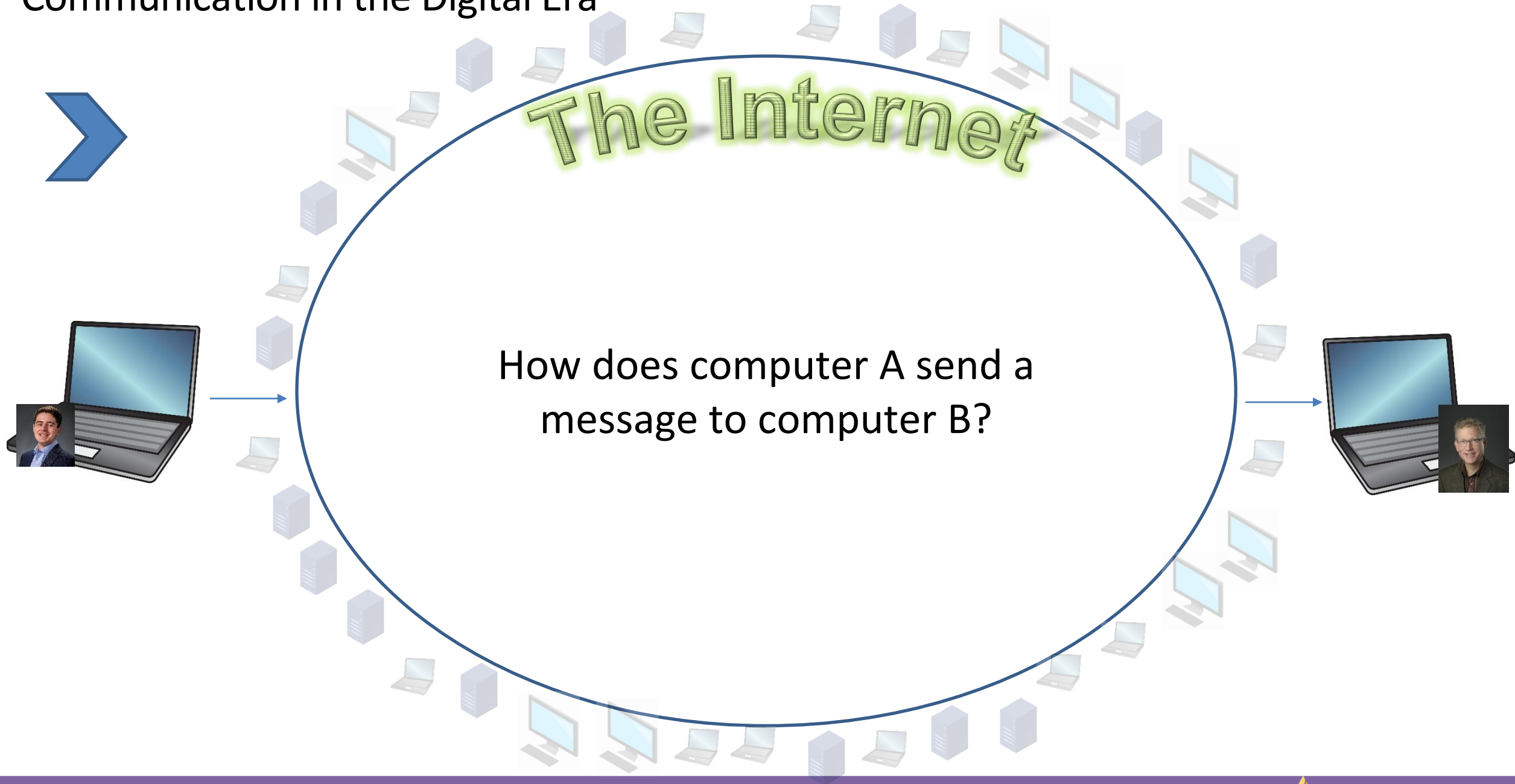
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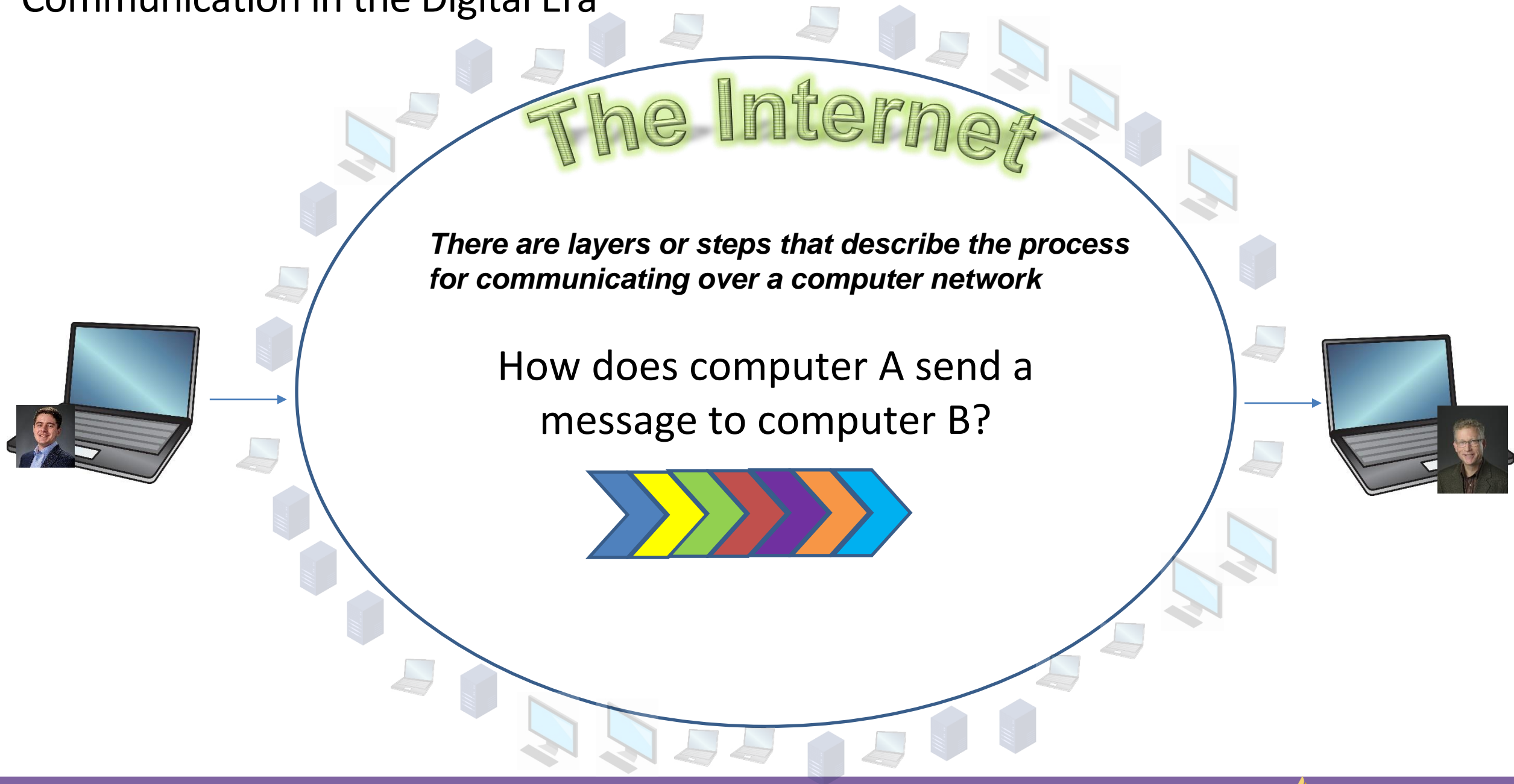
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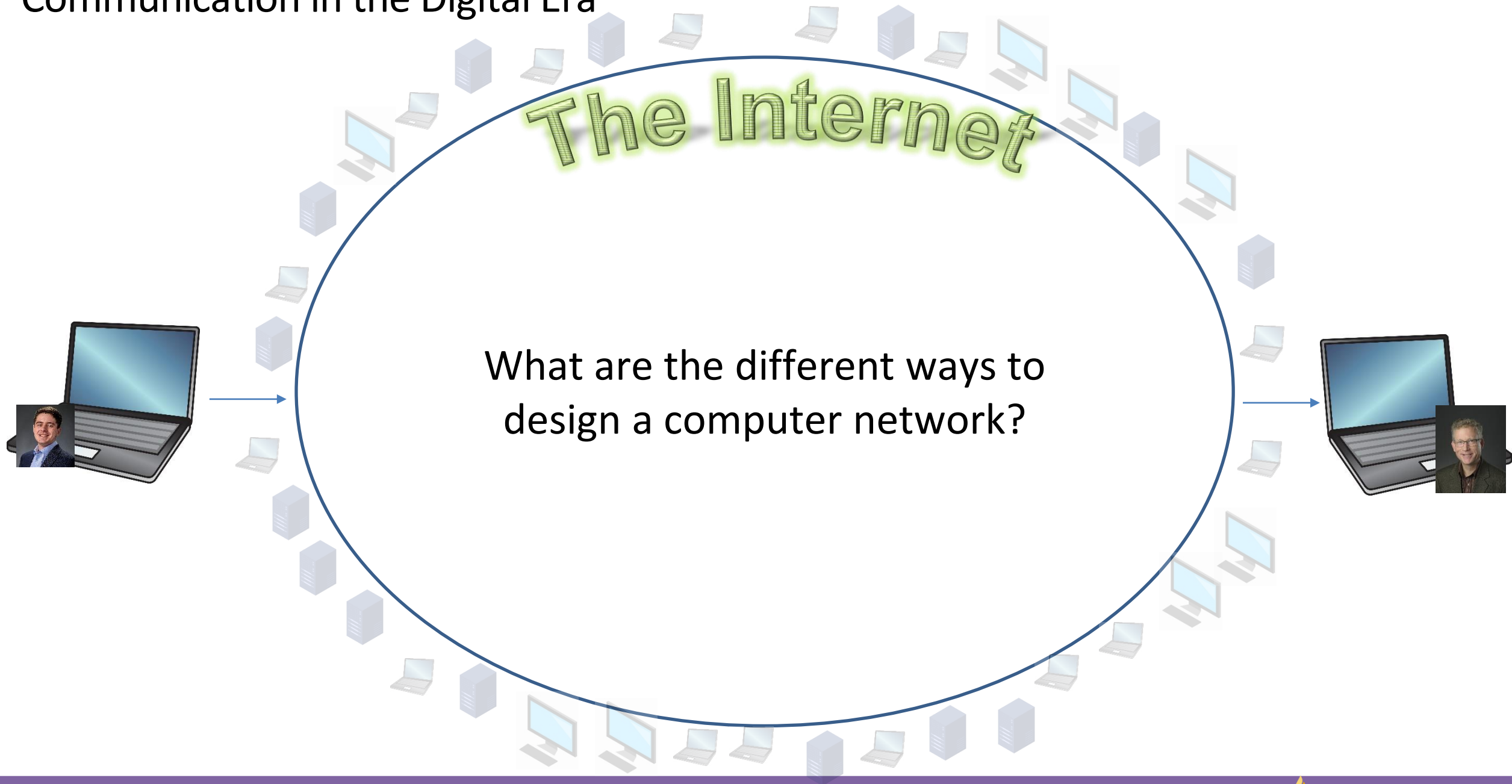


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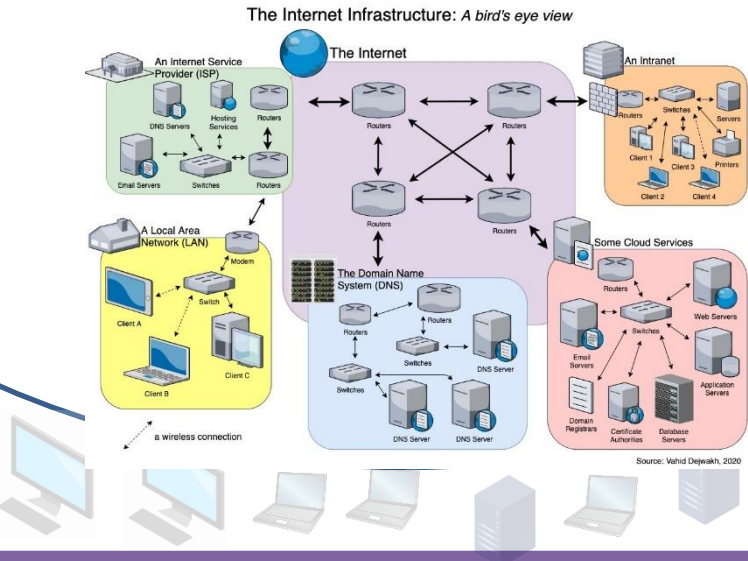
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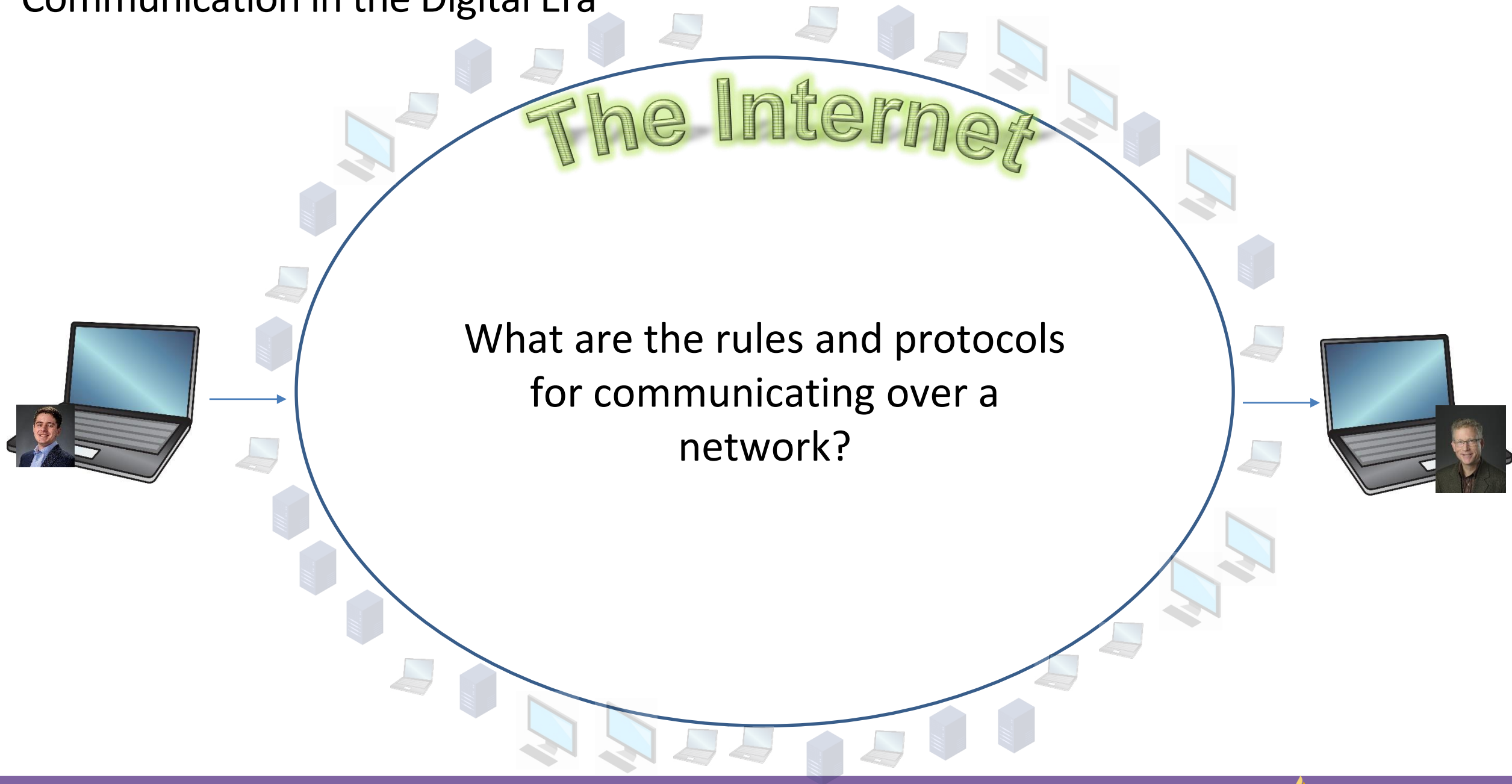


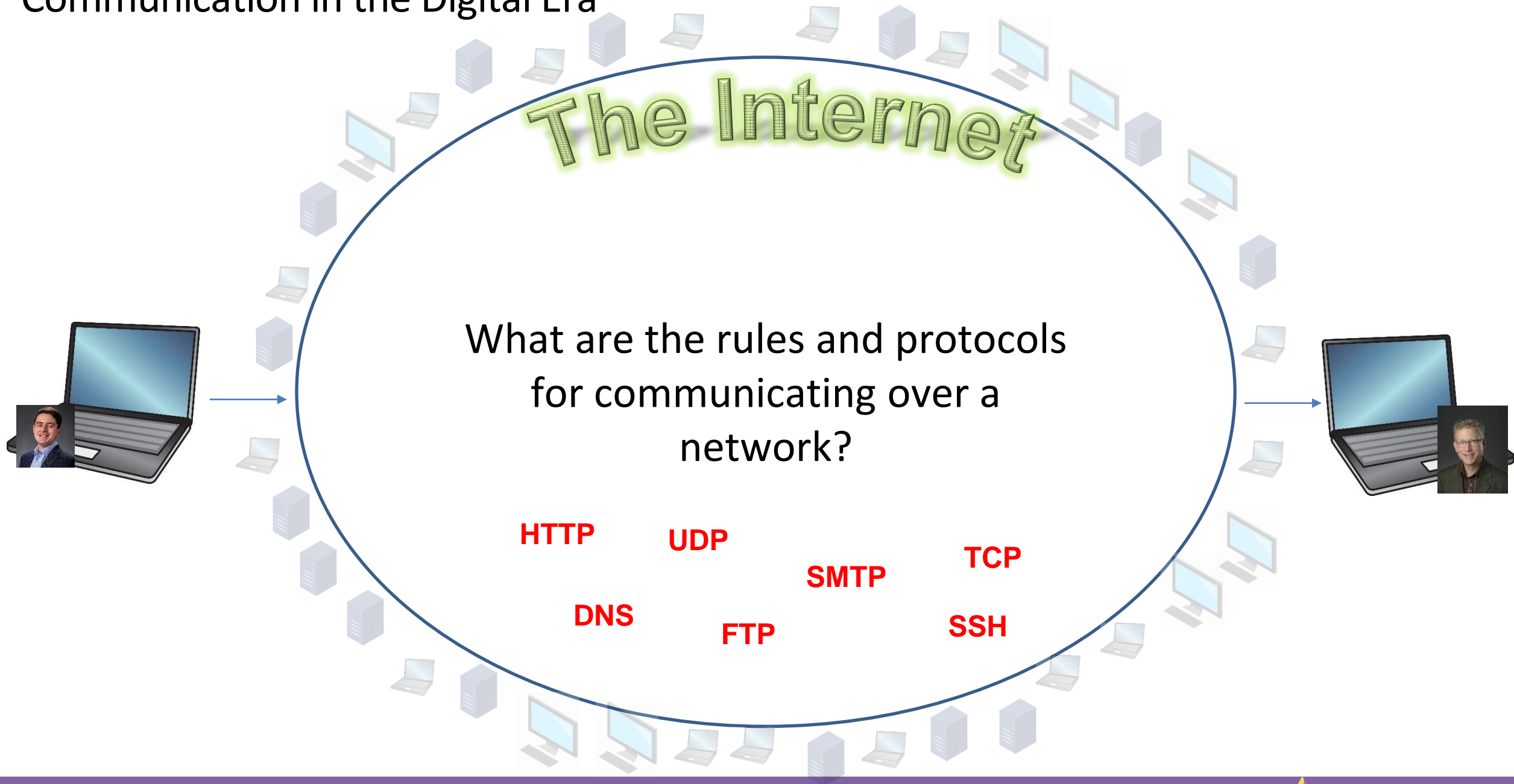


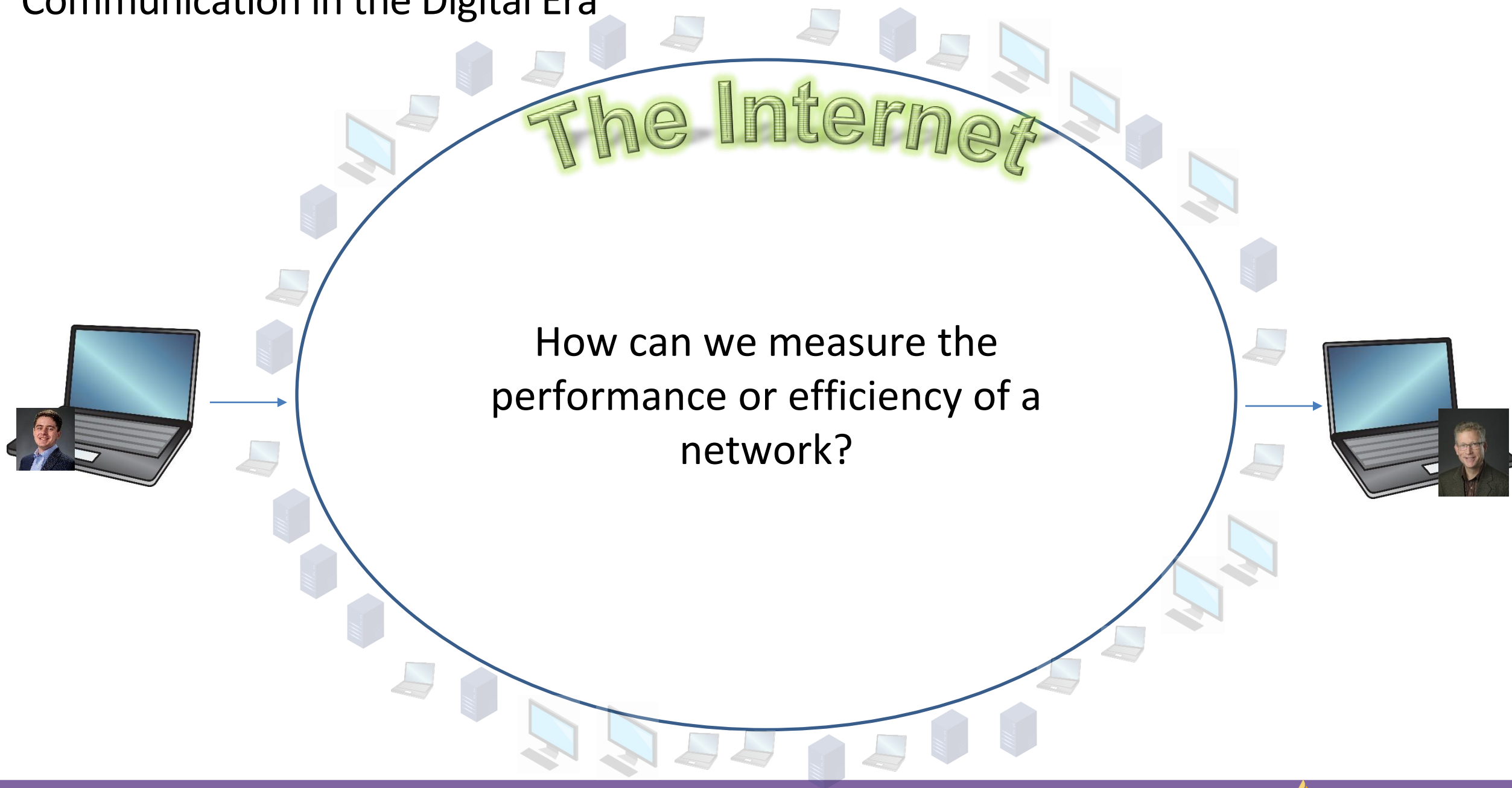
The Internet

What are the different ways to design a computer network?









The Internet

How can we measure the performance or efficiency of a network?

$$R = \frac{MSS}{RTT} \frac{1.2}{p^{0.5}}$$

R : Average Throughput

MSS : Packet Size

RTT : Round-Trip Time

p : Packet Loss

$$- \text{Loss} = 8/(3W^2) \Rightarrow W = \sqrt{\frac{8}{3 \cdot \text{Loss}}} \quad (4)$$

- Substituting (4) in (2), $S = 0.75 W MSS / RTT$,

$$\text{Throughput} \approx 1.22 \times \frac{MSS}{RTT \cdot \sqrt{\text{Loss}}}$$



CSCI 466- Course Outcomes

- List the network layers and explain their function in end-to-end communications
- Explain different network architectures and tradeoffs in the design decisions
- Explain the functions of various Network protocols (HTTP, DNS, TCP/IP, FTP, etc)
- Design and implement network application
- Analyze network traffic
- Measure network performance
- Explore security issues in networks and understand important defense mechanisms



About Me

My Experience

Contact

Logistics

Prerequisites

Schedule



Course Questionnaire

Textbook

Grading

Grading Breakdown

Late Assignment Policy

Grading Scale

Plagiarism and Academic Misconduct

MSU Resources

How to do well in this class

