MODELING THE INTERNET

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MODELING THE INTERNET

OUTLINE

WHAT SHOULD BE MODELED?

- overlays and aspects of overlays
- covering common functions across application, middleware, and network levels

HOW SHOULD IT BE MODELED?

- using "lightweight modeling" tools
- using the right language for each purpose

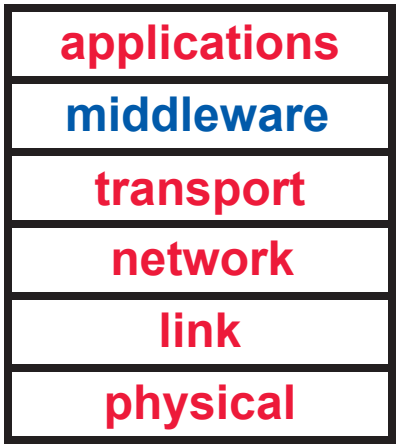
WHY SHOULD IT BE MODELED?

- because functional modeling (as opposed to performance modeling) is almost unknown in networking . . .
- . . . and is badly needed

THE STATE OF INTERNET ARCHITECTURE

THE "CLASSIC" INTERNET ARCHITECTURE

- defined in terms of layers with different functions



- designed to empower users and encourage innovation
- has succeeded beyond anyone's wildest dreams
- made obsolete by explosive growth in . . . users
  . . . traffic
  . . . applications
  . . . security threats

THE REAL INTERNET

- does not meet current or future needs for . . .
  . . . mobility,
  . . . security,
  . . . reliability,
  . . . quality of service,
  . . . scale,
  . . . network management,
  . . . balancing the interests of diverse stakeholders
- "classic" architecture is eroded badly by exceptions
- separation of concerns always loses to the desire for efficiency (or to tussles between stakeholders, or to anything else)
- as a result of all these factors, it is much too difficult to build, deploy, and maintain networked applications

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REFERENCES

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