RUTGERS

THE STATE UNIVERSITY
OF NEW JERSEY

Technology Infrastructure – Master Plan

Office of Information Technology

Enterprise Infrastructure

by

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Agenda

- Building a Network for the Future
- Technology
- Project and Plan Details
- Sustainable Funding Model – RU Keeping Up
- Network of Tomorrow
- A Strategic Approach
- Improved Service
- Wrap Up

Building a network for the Future

The new master plan for the Rutgers network charts a 10-year course toward a faster, more resilient Rutgers network, ubiquitous wireless connectivity, and a technology infrastructure designed to enable next-generation innovations in teaching, learning, research, and service.

Executive Sponsorship:

President Robert Barchi

CIO Michele Norin

Technology Today:
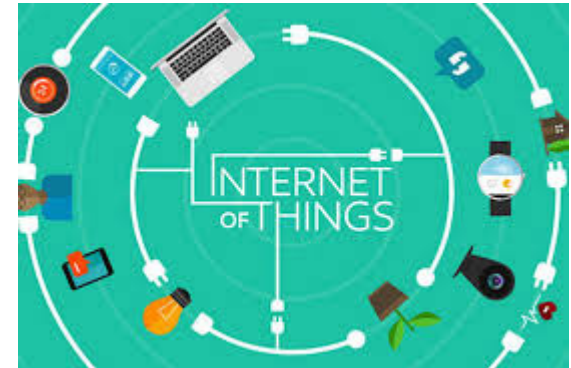# Analysis of Current Environment

Infrastructure

- Wired/wireless data
- Cable TV/Streaming
- Voice/Telephony
- Cellular

Connected Devices

- Computers and printers
- Telephones
- Clickers
- Microscopes
- Security access and cameras
- Student testing over wireless
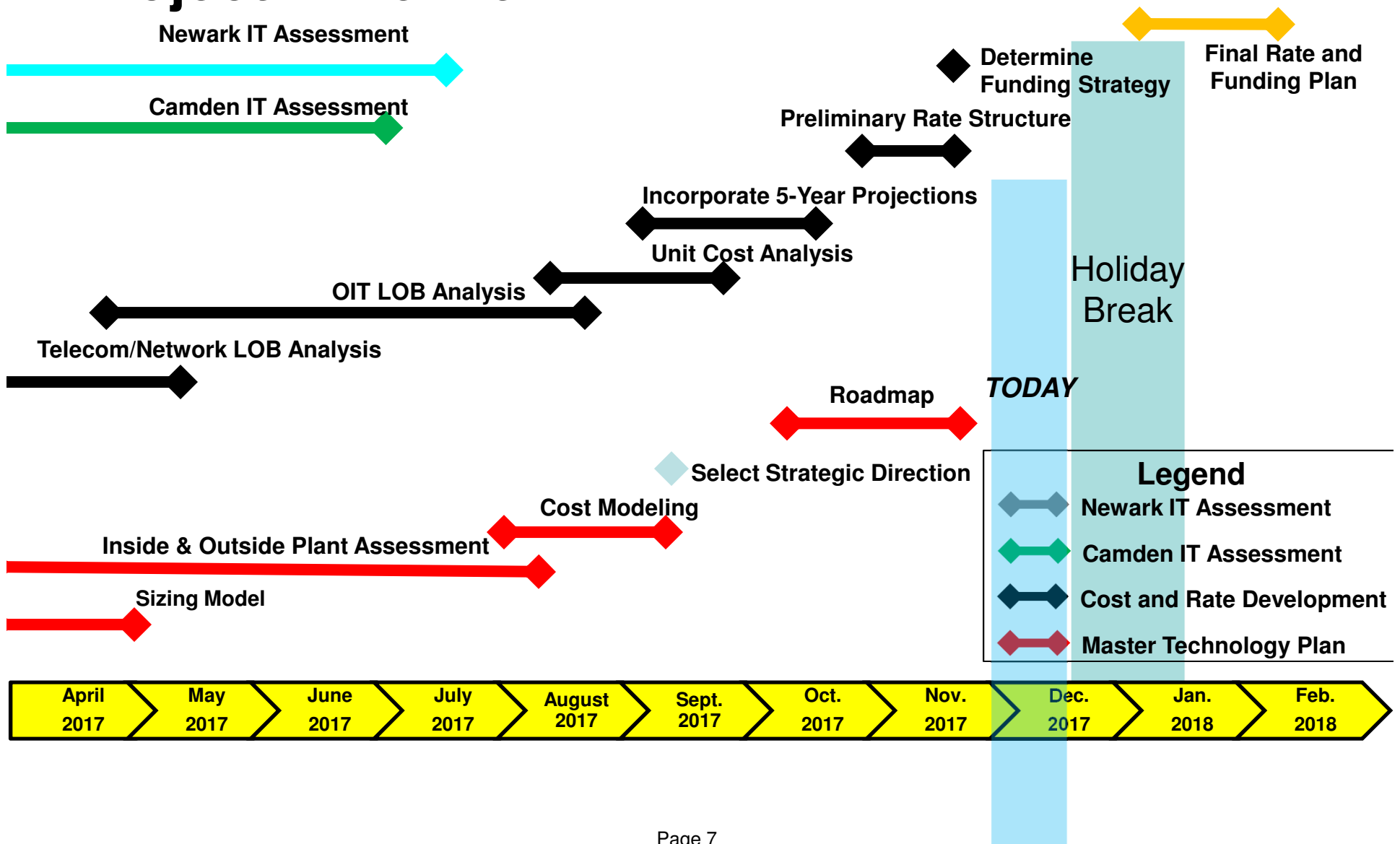- Vending machines

4

Technology of Tomorrow

The Project

- WTC consultants
- Multiple groups of stakeholders from across Rutgers system
  - steering committee (17 members)
  - main working group (32 members)
  - policy group (6 members)
  - subject matter expert groups
    - applications
    - capital planning and lifecycle
    - local area network (LAN) and wide area network (WAN)
    - cellular, telephony and Wi-Fi
    - inside and outside plant operations
- Rutgers community

Project Timeline

Newark IT Assessment

Camden IT Assessment

Determine Funding Strategy

Final Rate and Funding Plan

Preliminary Rate Structure

Incorporate 5-Year Projections

Unit Cost Analysis

OIT LOB Analysis

Holiday Break

Telecom/Network LOB Analysis

TODAY

Roadmap

Select Strategic Direction

Legend

◆	**Newark IT Assessment**
◆	**Camden IT Assessment**
◆	**Cost and Rate Development**
◆	**Master Technology Plan**

Cost Modeling

Inside & Outside Plant Assessment

Sizing Model

April 2017	May 2017	June 2017	July 2017	August 2017	Sept. 2017	Oct. 2017	Nov. 2017	Dec. 2017	Jan. 2018	Feb. 2018

The Plan

Building a Network infrastructure to take Rutgers into the next 10 years of technology

Scope

- ✅ Analysis of current network infrastructure
- ✅ Technology trends and needs
- ✅ Development of strategic plan for various network technologies
  - Wireless, cellular, etc.
- ✅ Assessment of resource requirements
  - Personnel, support, financial, etc.
- ✅ Creation of sustainable funding model

Analyze → Evaluate → Develop → Assess → Create

RU Keeping Up?

- Not enough recurring funding for strategic network upgrades

- Many upgrades "one time" grant or capital driven – without recurring operating funding

- Network not meeting all of today's requirements

- Wireless service is not everywhere

- Security threats are increasing

- Last all-inclusive network upgrade was 1999 - $100 million
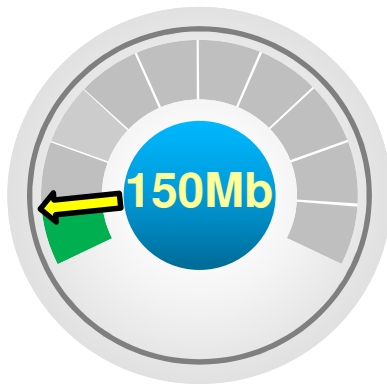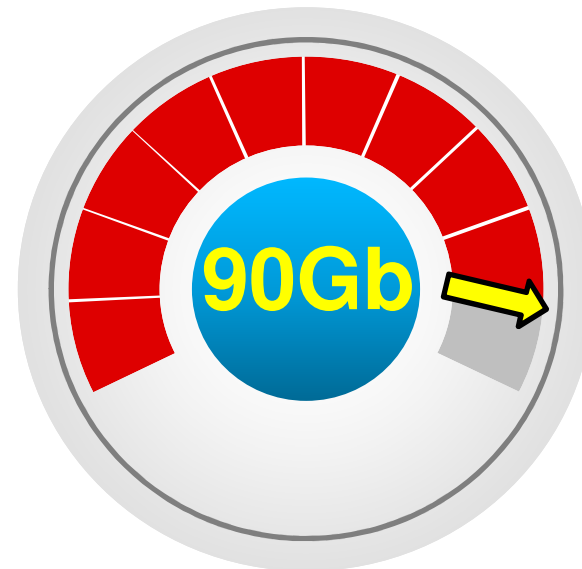
Then…
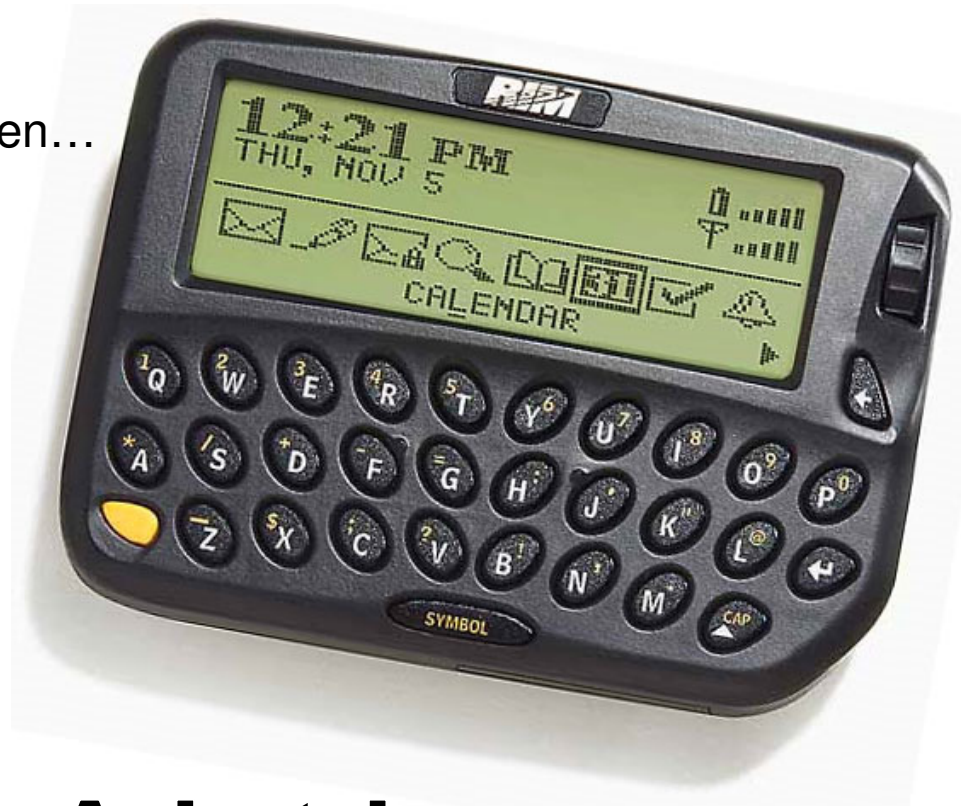
A lot has
changed
since 1999

Now…

Then…

Now…

Connectivity - Bandwidth

THEN

150Mb

1 Connection to
AT&T

NOW

90Gb

**7 Connections
De-Cix, FBConnect,
Google, Level3, I2,
NY-IIX and Verizon**

Partnerships and Initiatives

Rutgers by Numbers

1,433 buildings

Over 24,000,000 square feet

Network of Tomorrow

A More Mobile, Connected Campus

Wireless First   "Smart" Cities

Location Awareness

IoT HARDWARE
Technology Guide
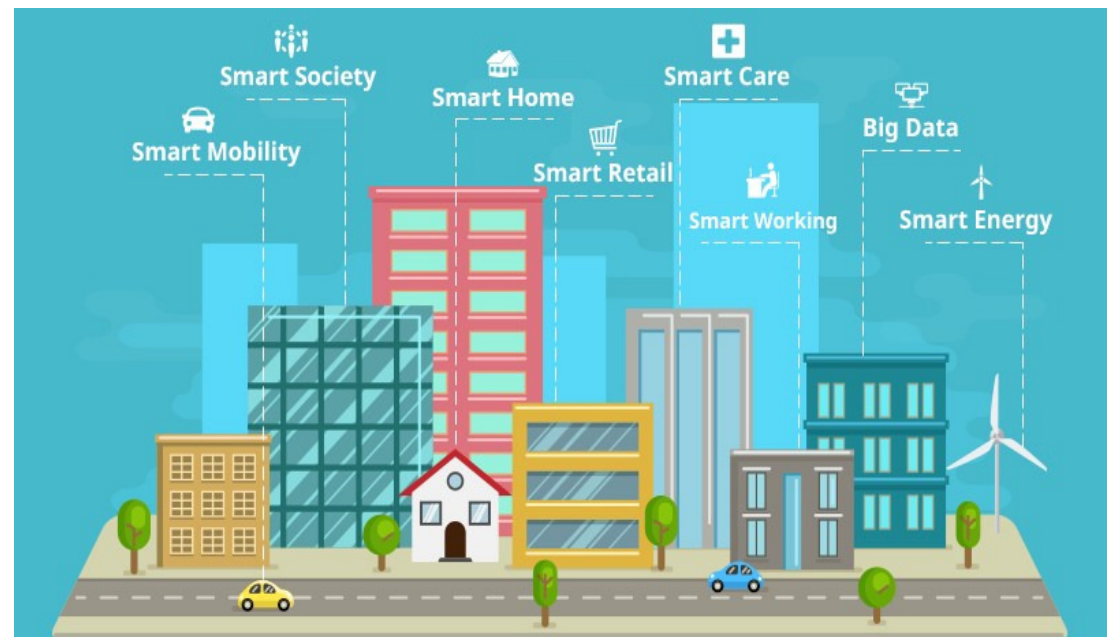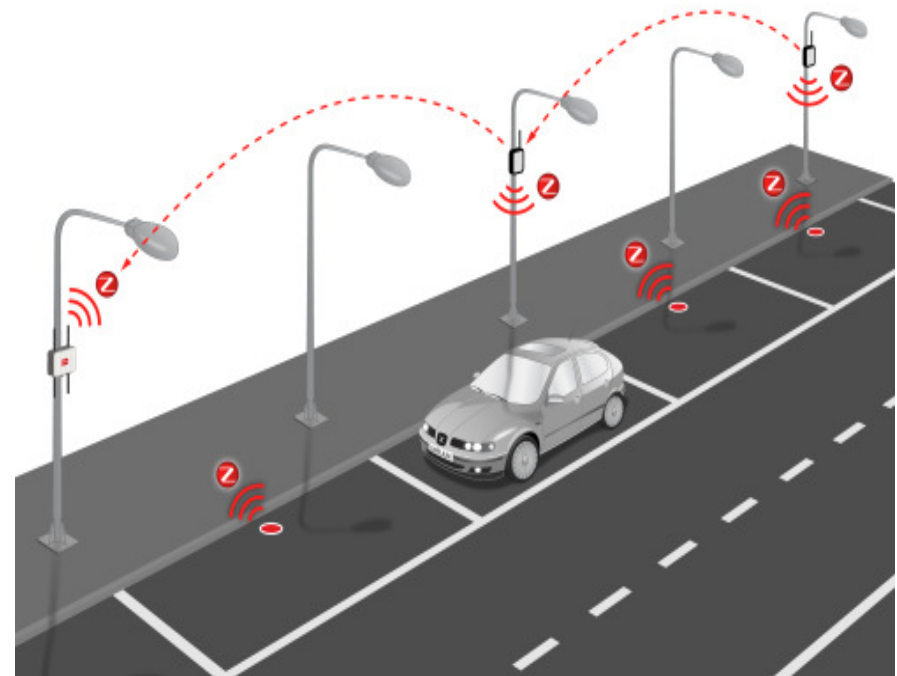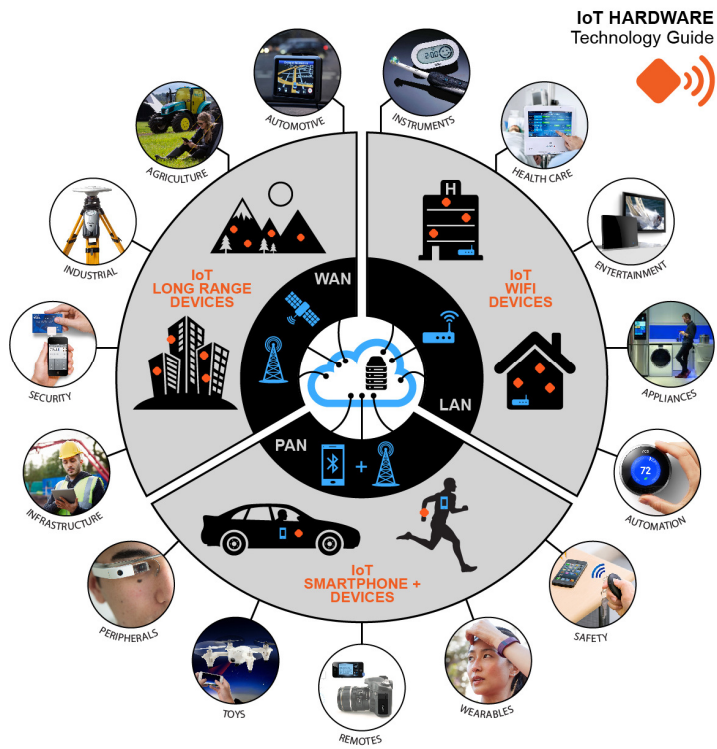
Learning with Peers

Flexible Location

Upskilling at Work

Flexible Schedule

http://tech.ed.gov

A Strategic Approach

- Lessons learned – Looking Back
  - 1999 Network Project
    - Not completed
    - Insufficient Operating Expenses
    - Insufficient Staffing
    - Did not address all locations

- Impact – Looking Ahead
  - Upgrades must be proactive – Not sporadic
  - Wireless must be ubiquitous – not just a convenience
  - Security must be a default – not a response

Improved Service

- Simple, resilient and robust connectivity
- True ubiquitous wireless coverage
- Sustainable Funding model – upgrades will "just happen" as part of the day-to-day operation
- 24x7 Network Support
- Ability to support all required services and applications

Next Steps

- Completing the Funding Model
- Refining the Strategic Direction
- Completing the Road Map
- Sharing the Journey

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Questions?

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