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"Planning Tools: A Planner's Perspective"

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Outline

1. The Optical Network
2. Tools: Planning, Capacity Management, & Transmission engineering
3. Where are we now
4. What will we need

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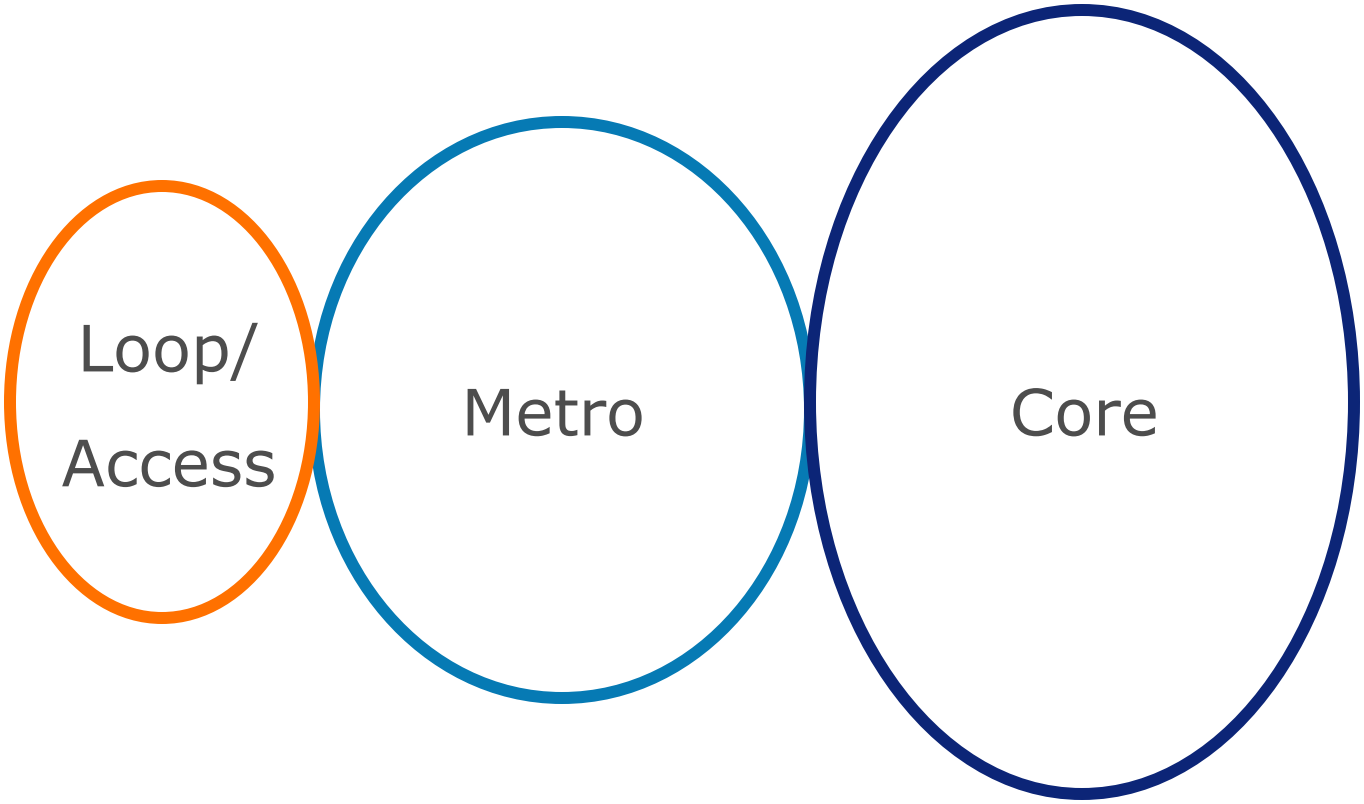
Optical Network

Optical Network



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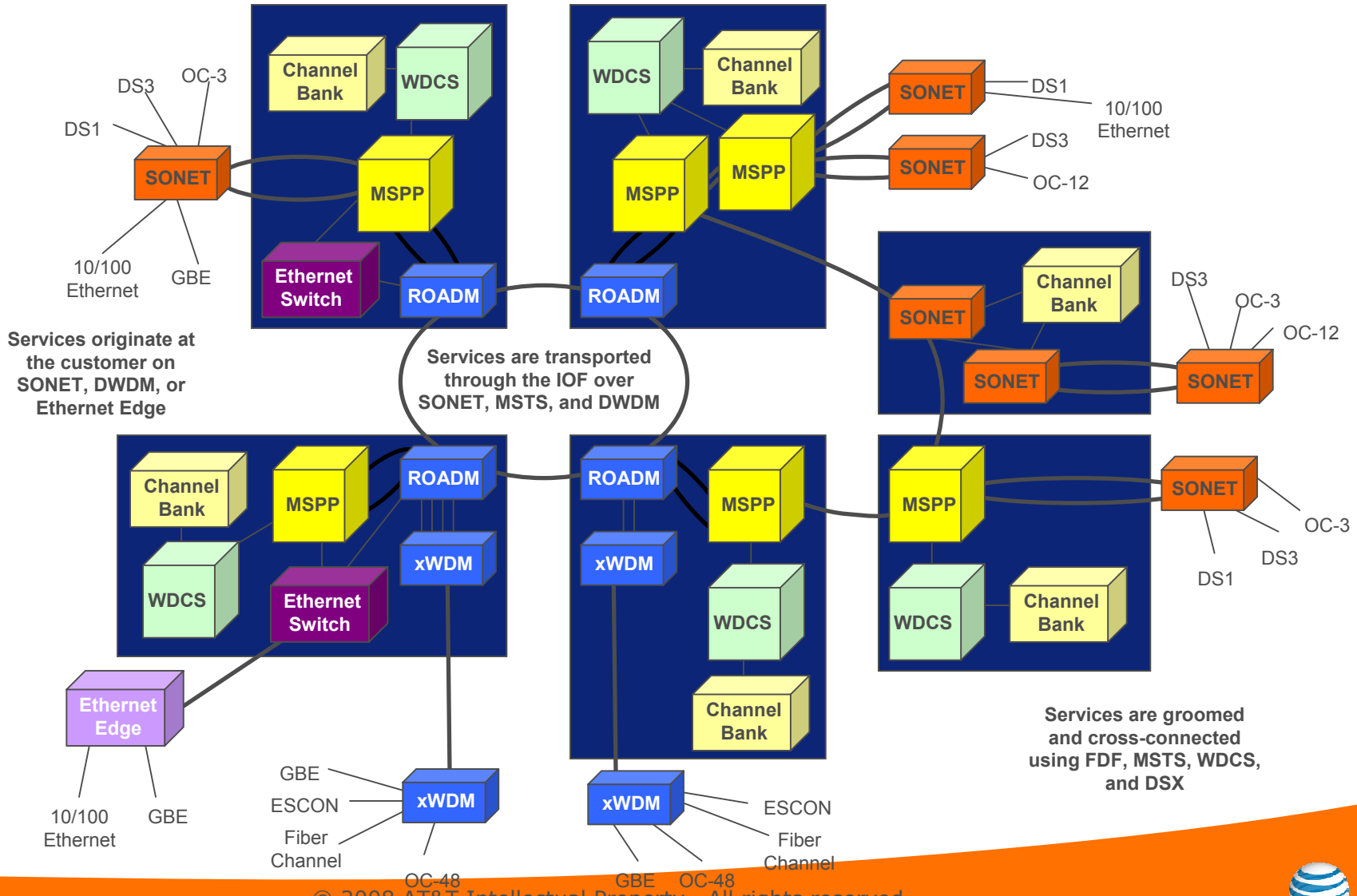
Architecture – Loop to Metro to Core



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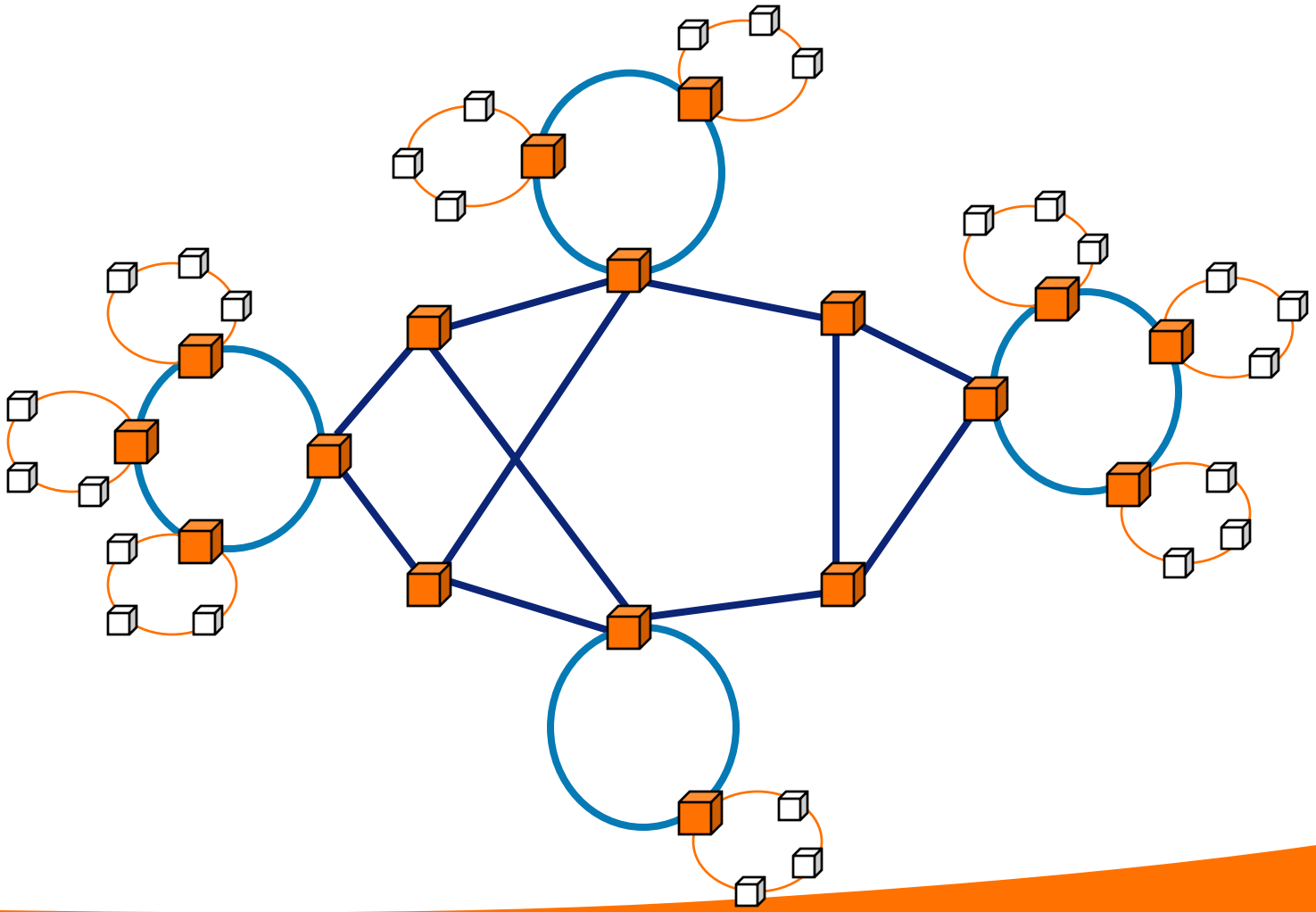
Metro to Core to Core to Metro



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Tools

Tools

- Planning
  - Where do I need the optical network?
  - How much will it cost?
  - How can I prove in the technology building it over time?
  - Where are my potential overbuilds in the coming years?
  - What technology is available for me to use and when?
  - **How do I get my information into the tool quickly and easily?**
- Capacity Management
  - Where do I have spare capacity?
  - Where can I find spare capacity?
  - Where am I blocked?
  - **How do I get my information into the tool quickly and easily?**
- Transmission
  - What does my fiber plant support?
  - **How do I get my information into the tool quickly and easily?**

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Where are we now?

Where are we now?

- Each Process requires a separate tool.
  - Planning
    - Stand Alone tool
    - Incremental designs
    - Inputs from OSSes
    - Internally developed or modified from a supplier
  - Capacity Management
    - Stand Alone tool
    - Internally & externally developed
  - Transmission
    - Stand Alone tool
    - Supplier Developed

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What do we need?

What do we need?

- Optical Mesh
  - As the network begins to move from linear systems and rings to optical hubs the ability to optically bypass becomes a necessary planning, capacity management and transmission function that is required
  - Algorithms focused on transmission for best path instead of distance
- OTN
  - The ability to manage within the wavelength is a critical path forward. OTN based planning tools are critical to move the network forward since most wavelengths are a series of aggregated circuits. Therefore OTUx & ODUx tracking capabilities are needed.
- GUI
  - No more tables
  - Make the tools more GUI based and feature rich instead of a series of input tables
- Did the equipment get installed correctly?
  - The ability to remotely check the equipment to make sure it is turned up correctly initially.

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Thank You