



Sagamore Systems

Enabling the Zero Touch Network



Enabling the Zero Touch Network

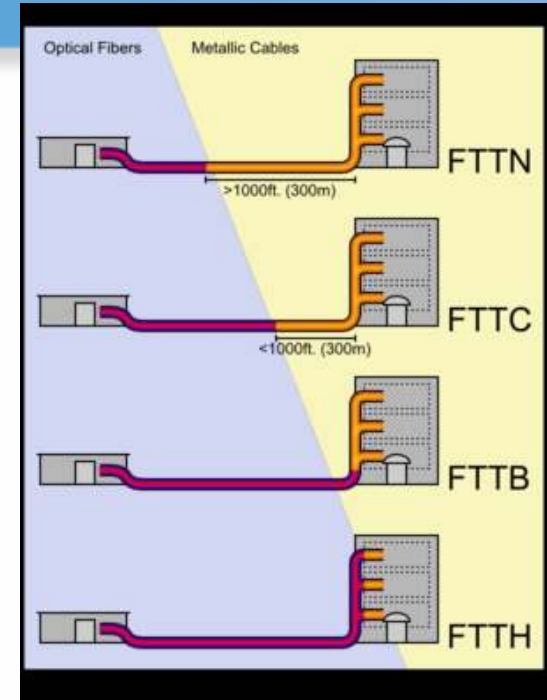
May 6, 2008



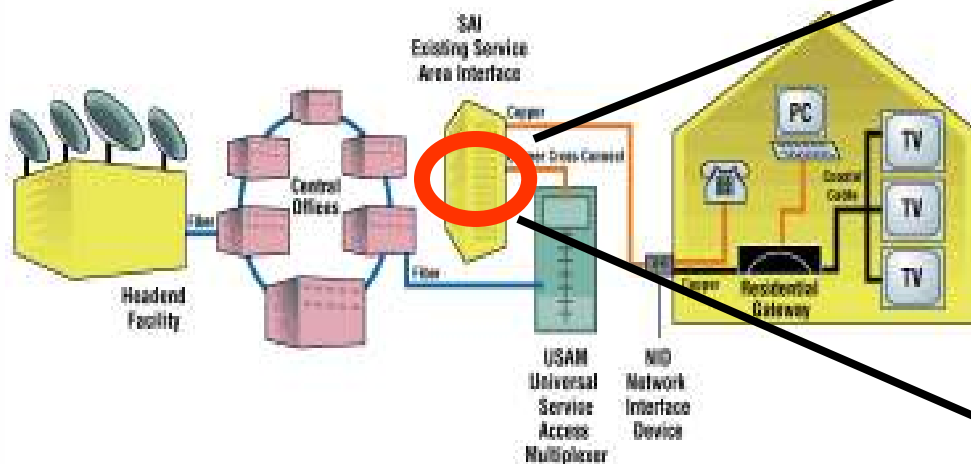
Next Generation Network



- Leverage Existing Copper Infrastructure for New Entertainment Services – IPTV, P2P, Gaming, etc
 - DSL Upgrades – ADSL2, ADSL2+, VDSL, VDSL2, Pair Bonding
 - Shorten Loop Lengths to Maximize DSL Bandwidth
- New Fiber Deployments



VDSL - Very High-Speed Digital Subscriber Line



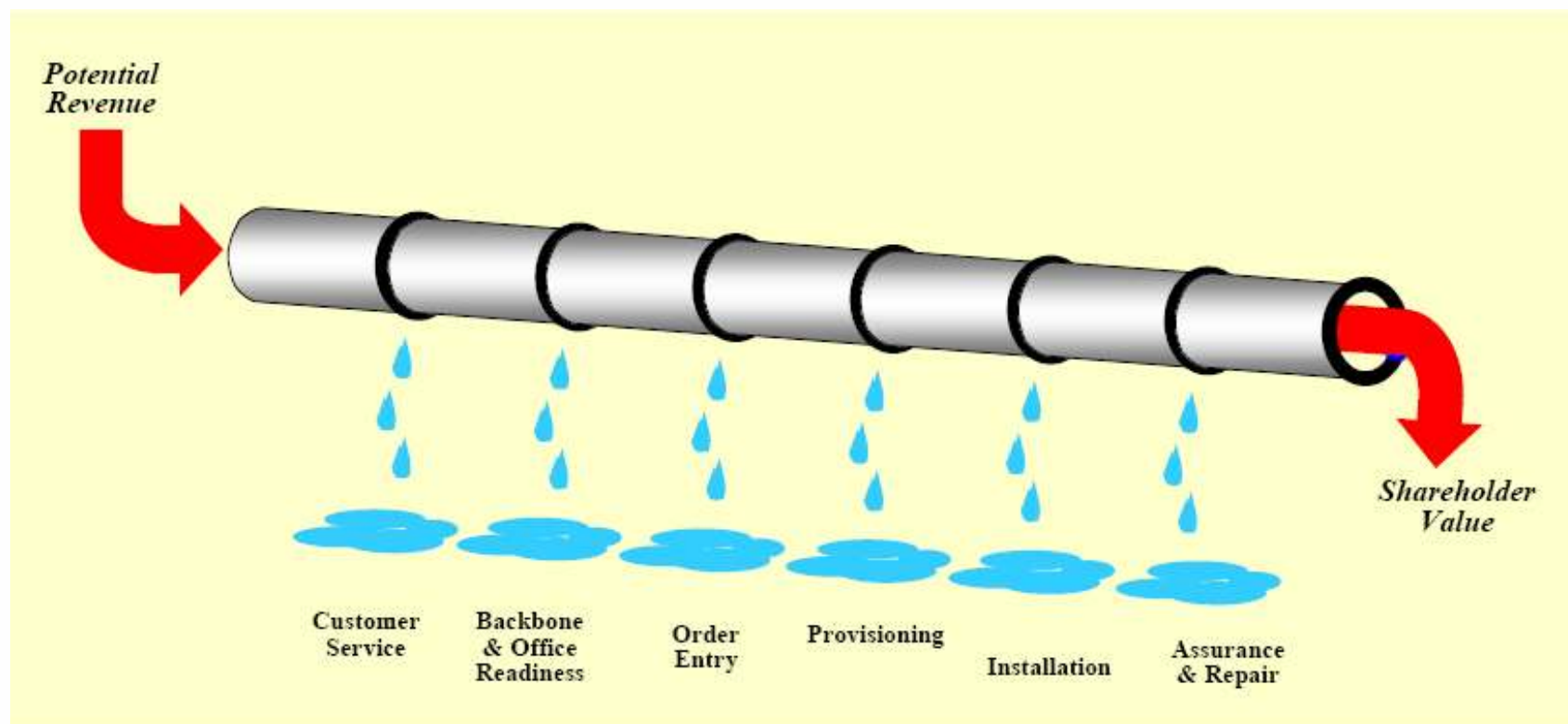
- Service Delivery Bottleneck
 - Manual Crossconnects
- Costly Manual Processes w/ Legacy Equipment
- Space and Power Limitations



Operations Opportunities for Savings



Reduce Physical Touch Points = Increased Revenue

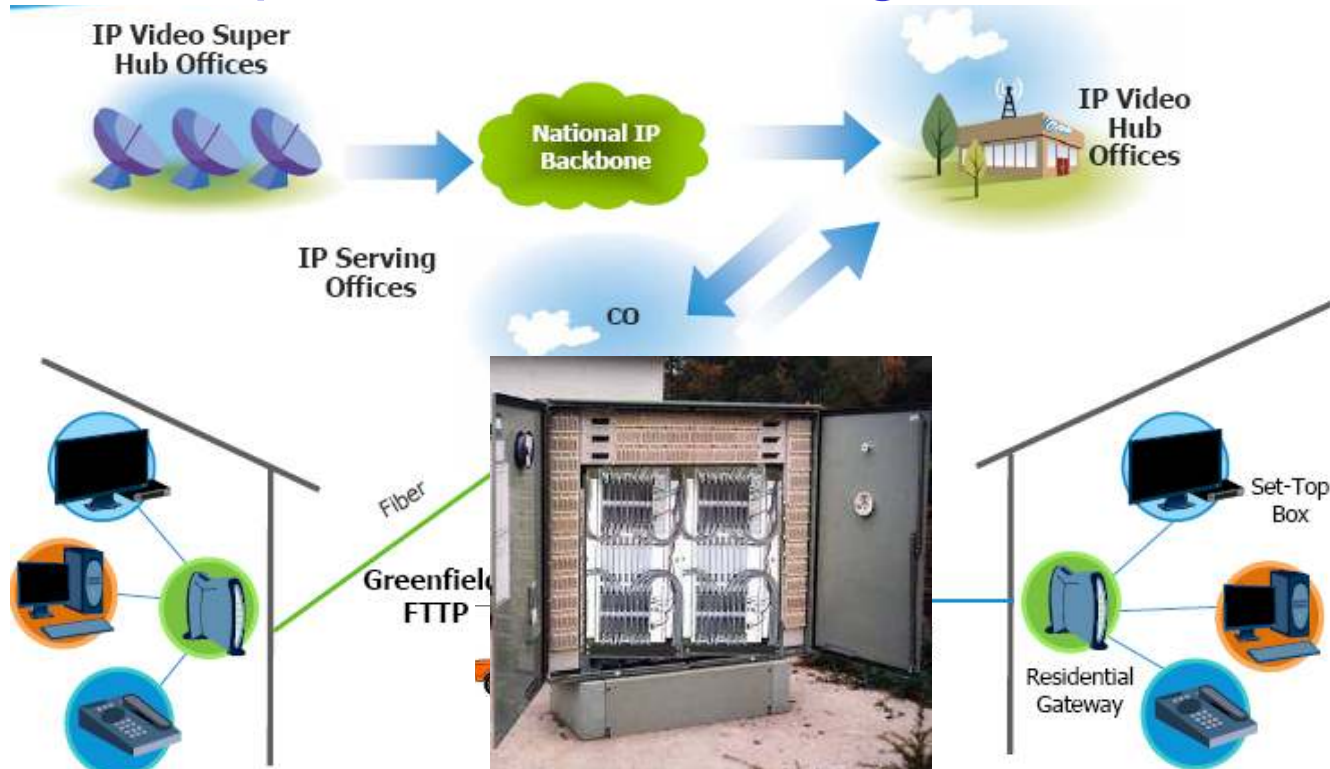




Next Gen Network – Next Gen Process



Rapid ROI Automating the Last Mile



Next Gen Process - Zero Touch Technology

- **Revenue Enhancements** - Instant ON -> Instant Revenue
- **OpEx Savings** – Elimination of Truck Rolls
- **Capital Efficiencies** – Reclaim & Assign Stranded Assets
- **Green Friendly Solution** – Reduce Carbon Footprint

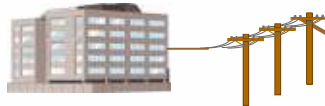


Carrier Impact

OSP

Guarantee Premium Services

- Protection Switching \ Sparing
- Service Level Agreements
- Instant Service Change



Cost Effective Bandwidth Allocation

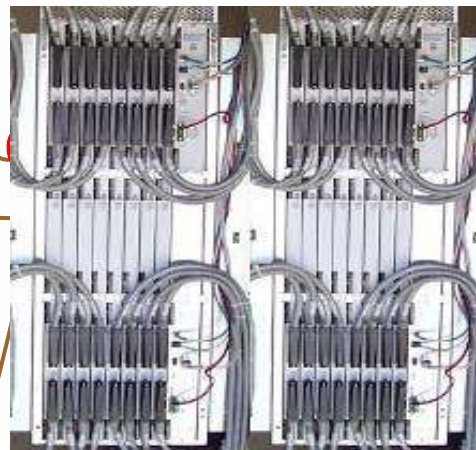
- Dynamic DSLAM Port \ Bandwidth Management
- Pair Bonding Management



Copper

“Zero Touch” Jumpers

- Flow-through Provisioning
- Installation \ Maintenance
- Service Assurance & Test Access



OSP Cabinet

Operational Efficiencies

- “Zero Touch” Jumper Management
- Accurate Loop Records
- Service Lifecycle Management
- Remote Fault Isolation
- **Capital Efficiencies**

NOC / CO / Customer

End-User



Databases



Fiber

Area Management \ Reporting

- Real Time Loop Record Updates
- Service Area Management
- Port Usage Reporting
- Target Marketing Functions
- Many more



Targets for AXC Zero Touch



- **Remote Terminal \ FTTN \ FTTC**
 - Flowthrough Provisioning for ALL MVA/C
 - Reallocation of Stranded \ Unused Assets
 - Dynamic Bandwidth Allocation
 - CALEA Access Points



- **Remote \ Dark Central Office or CEV**
 - Eliminate Costly Dispatches
 - Remote Monitoring & Test Access
 - Reallocation of Stranded \ Unused Assets

- **MDU Deployments**
 - No Need to Schedule Access
 - No Dispatches to Undesirable Locations
 - Dynamic Bandwidth Allocation

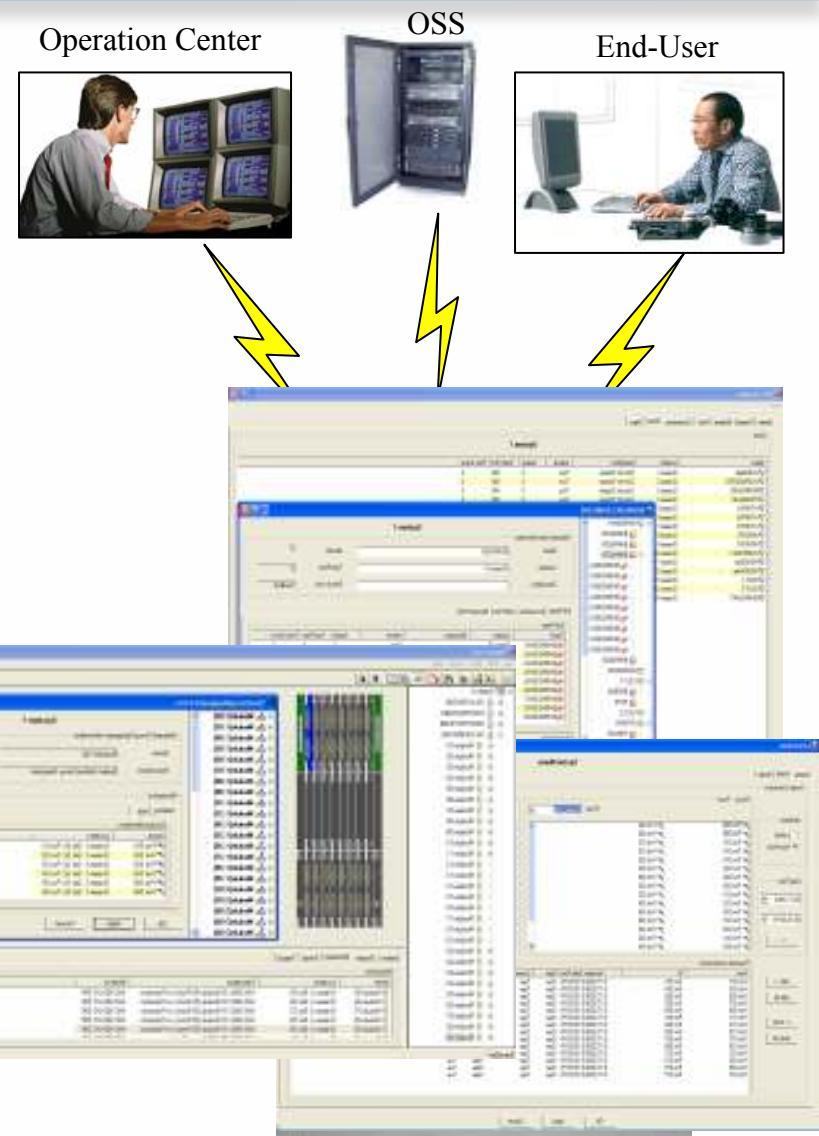




AXC Software Components



- **Automated XConnect Software**
 - Flow-through Control
 - Real Time Diagnostics & System Health
 - Fault Tolerant Copper Routing
 - Service Life Cycle Management
- **Additional AXC Software Components**
 - Dynamic Service \ Port Allocation
 - Automated Service & Resource Management
 - Connection Learning \ In-Service Installation
 - Service Redundancy \ Protection Switching
 - Loop Unbundling Point
 - CRM \ Marketing Functions
 - CALEA Access Point
- **OSS \ EMS Interface**
 - Real Time Loop Record Updates
 - Usage Statistics
 - Data Collection \ Report Generation
 - Trouble Shooting and Fault Isolation





Sampling of AXC Benefits



- Mechanizing Jumper Management for ALL Cu Based Services
- Flow through Software Control
- Capital Efficiencies in Space / Power Constrained Environments
- No Need for Overbuilding
- Reallocate Stranded or Unused Assets
- Dynamic Bandwidth Control
- Pair Bonding Management
- Real Time Loop Record Updates
- Monitoring \ Test Functionalities
- Green Friendly Solution – Fuel \ Power Reduction

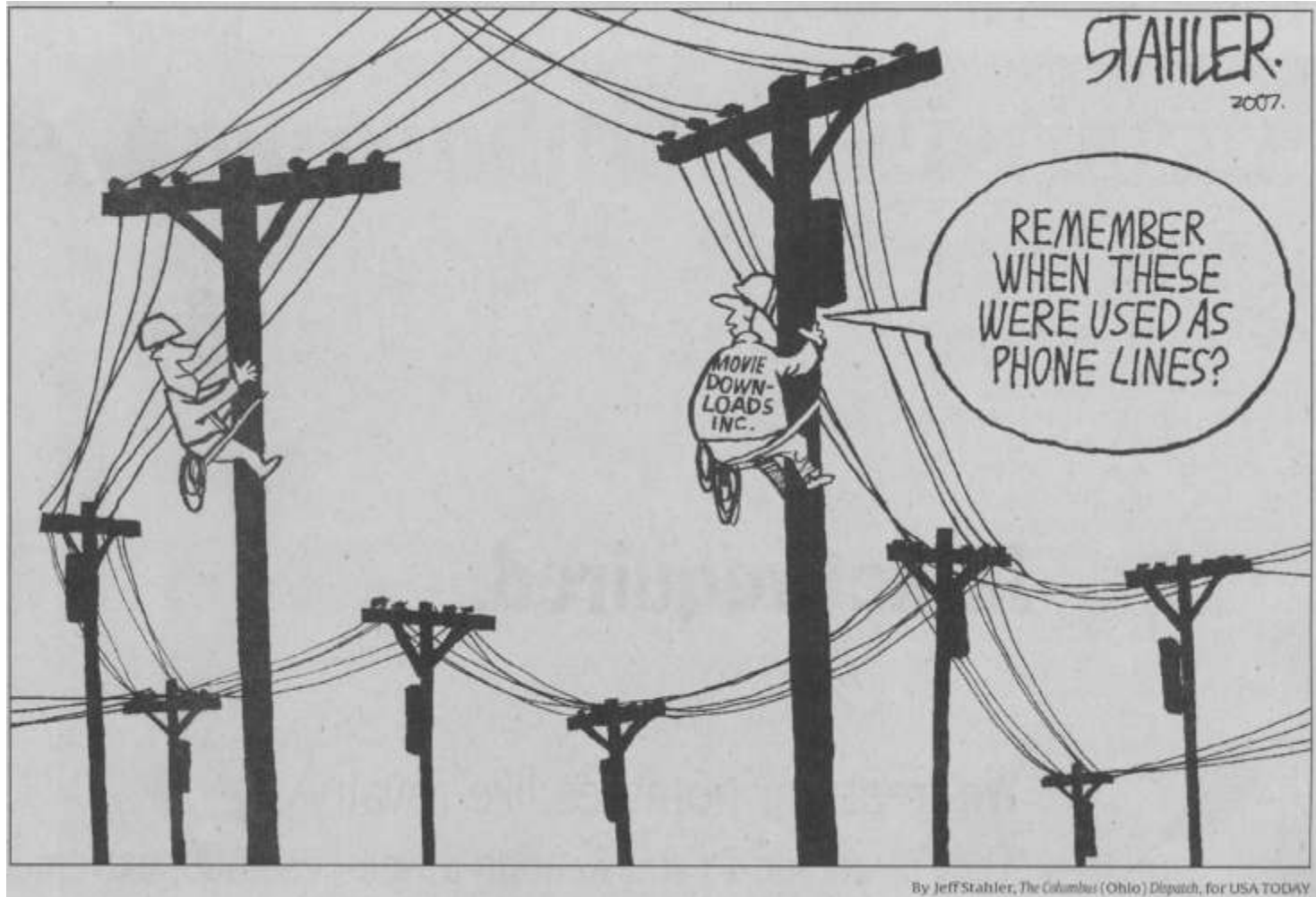


Why Zero Touch?

- Improved QOE (Quality of end user Experience)
 - Quicker time to Service = Quicker Time to Revenue
 - Guaranteed Quality of Service (Automatic Protection)
 - Positive references from satisfied customers
- Increase ARPU (Average Revenue Per User)
 - Earlier Billing Cycle
 - Increases monthly revenue for higher QOS
 - Reduction in Operational Expenses (no truck roll)
 - Capital Efficiencies Improvements
 - Higher take rate on home passed from references
- ***More Customers, Better QOE, Reduced OPEX = Improved Bottom & Top Line \$\$***



Solution – Sagamore Systems



USA Today February 7, 2007



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Thank You
Sagamore Systems, Inc.