



The Role of Network Management in Reviving the Telecom Industry

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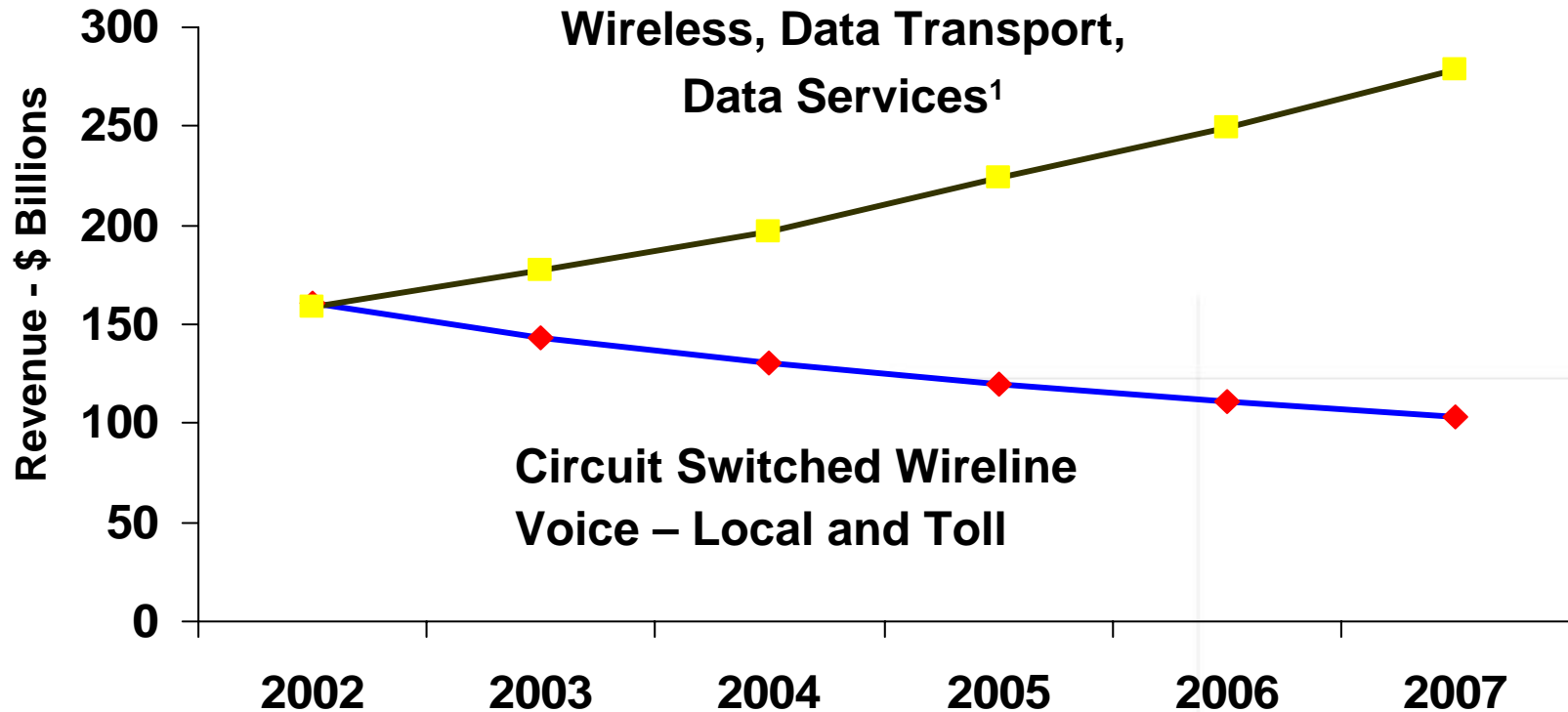
Agenda

- **US Industry Trends**
- **Economic Drivers for Change**
- **Process Benchmarking to Identify NMS opportunities**
- **NMS Requirements**
- **Summary**

Key Telecom Trends Pointing to *Need* for Industry Revival

- **Wall Street's outlook on Telecoms is for lower profits**
- **Decline of switched access lines is not temporary, but will continue** *Up to 15% of embedded retail base is at risk by 2008 – loss is to cable telephony*
- **Embedded operating costs in Wireline companies must be significantly and quickly reduced**
Loss of lines will not reduce operating expense to needed levels
- **New revenue is the *engine* of earnings growth**
Business model must leverage wireline and wireless network scale and scope for profitable delivery of converged, advanced services developed by 3rd parties that leverages IP networks
- **Capital funding will be constrained for most of planning period**
Need to be able to deliver services and connectivity with owned and non-owned facilities.

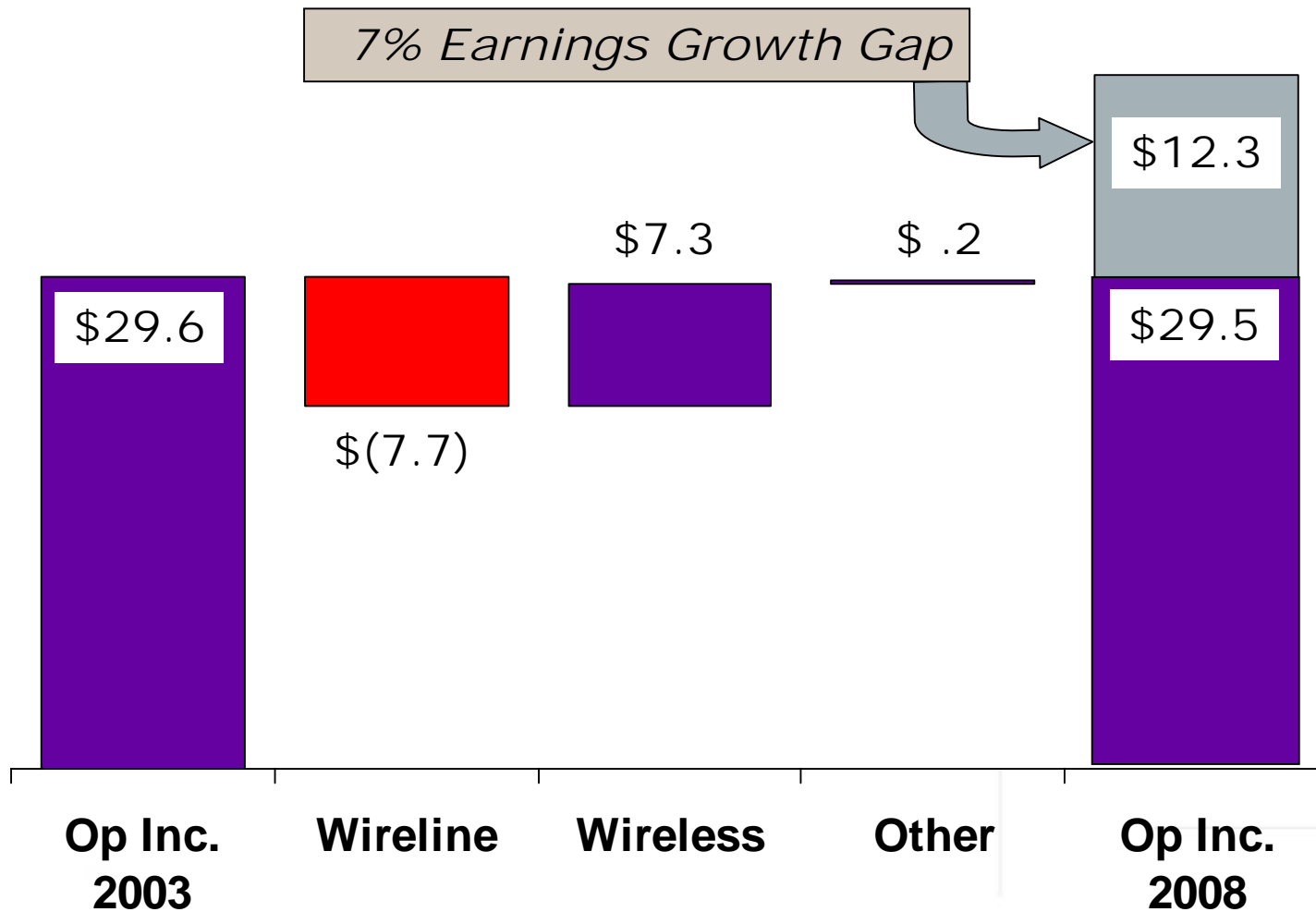
Sources of Revenues Are Changing Dramatically



¹Includes VoIP

Sources: Yankee Group, Sanford Bernstein, Bear Sterns, IDC

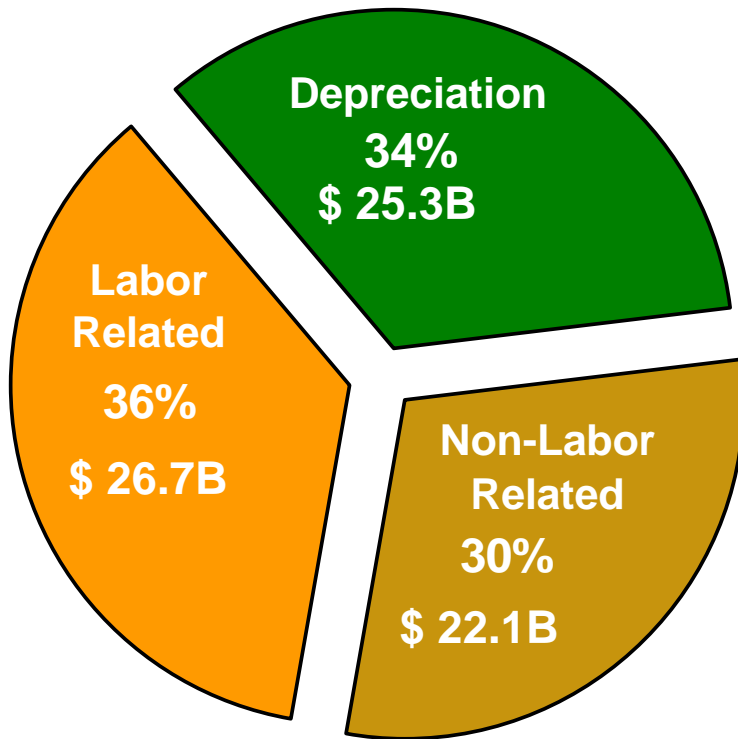
U.S. Major Carriers' Operating Income "Earnings Gap"



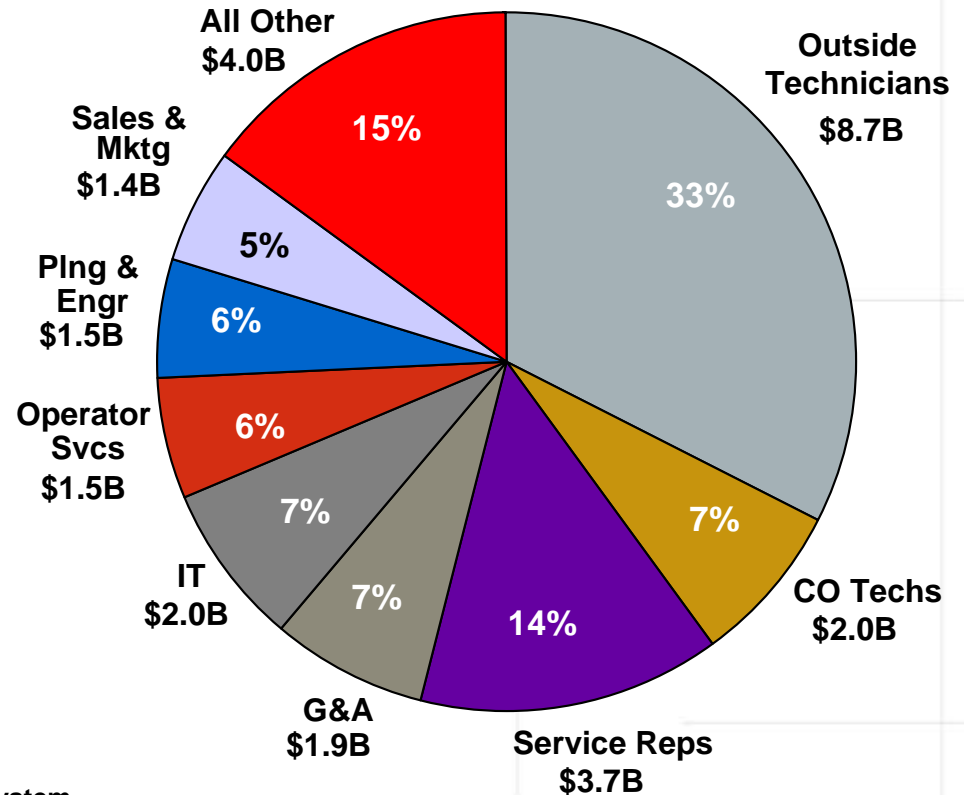
Source: Bernstein Research

U.S. Major Carriers' Total Wireline Operating Expense

Total Expense:
\$ 74.1 Billion (USD)



Technicians and Service Representatives Expense 54% of RBOC Labor



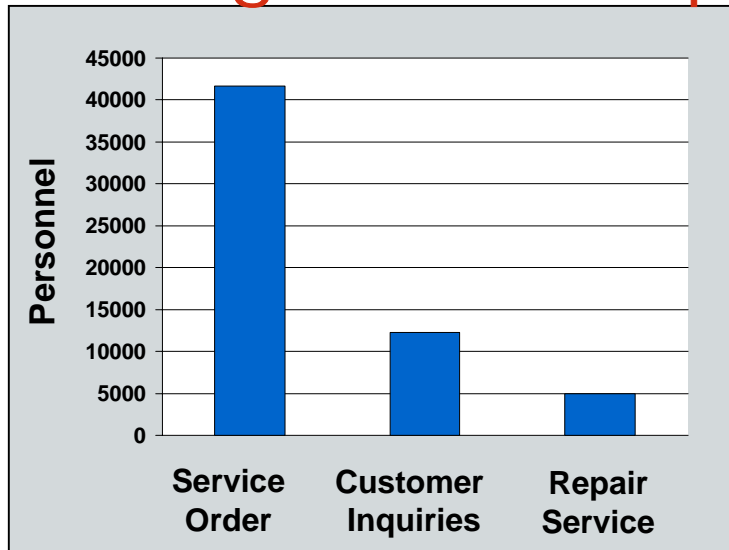
Sources:
2002 Automated Reporting Management Information System (ARMIS) and Telcordia studies

Service Provisioning Process Benchmarking

	European Operator 1	European Operator 2	U. S. Operator 1	U. S. Operator 2
Number of Customer Interactions	6	5	1	2
Number of Hand Offs	23	12	2	3
Number of Systems	15	14	14	12
Number of Personnel Processing an Order	7	13	1	5

Bottom Line: Too many customer contacts;
Too many handoffs;
Too much labor

Service Representatives – A Significant Expense

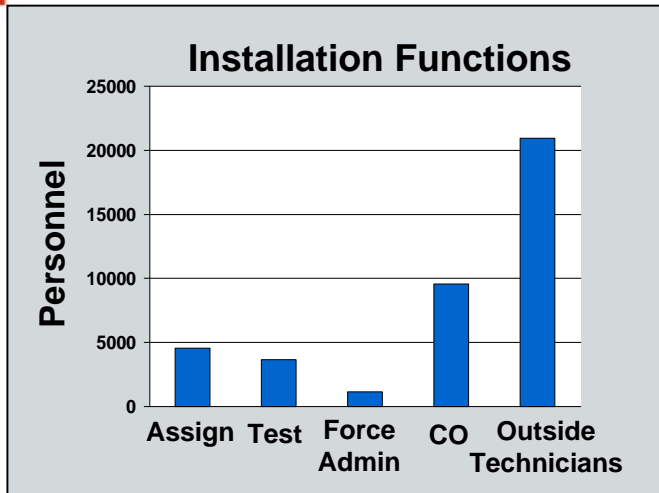


- *Almost \$4 billion in Labor Expense in 2002*
- *Over 150 million service orders*
- *Over 40 million trouble reports*

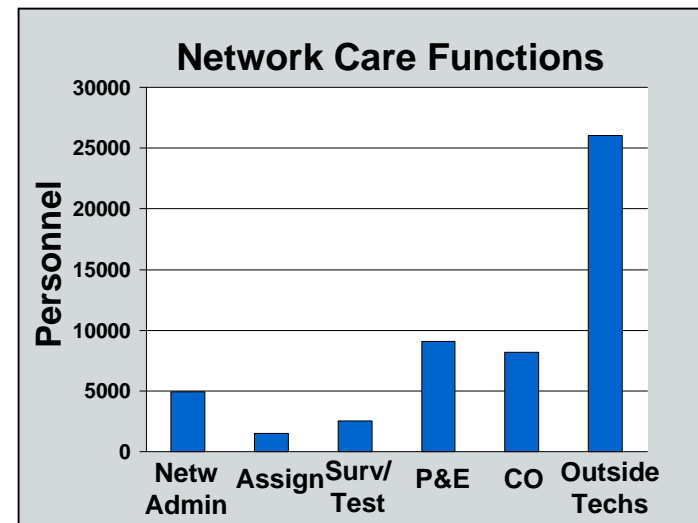
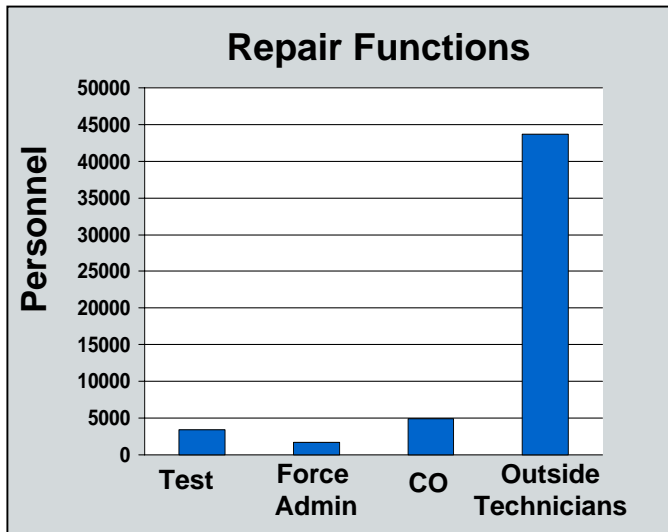
■ **Drivers of Service Representative activity:**

- **Inward movement represents 25% - 30% of total orders; residence POTS and ADSL represent 70% of inward movement**
- **Service changes (e.g., caller ID, voicemail) represent 35% - 40% of total orders**
- **Outward movement represents 30% - 35% of total orders**
- **Customer inquiries are predominantly related to billing**

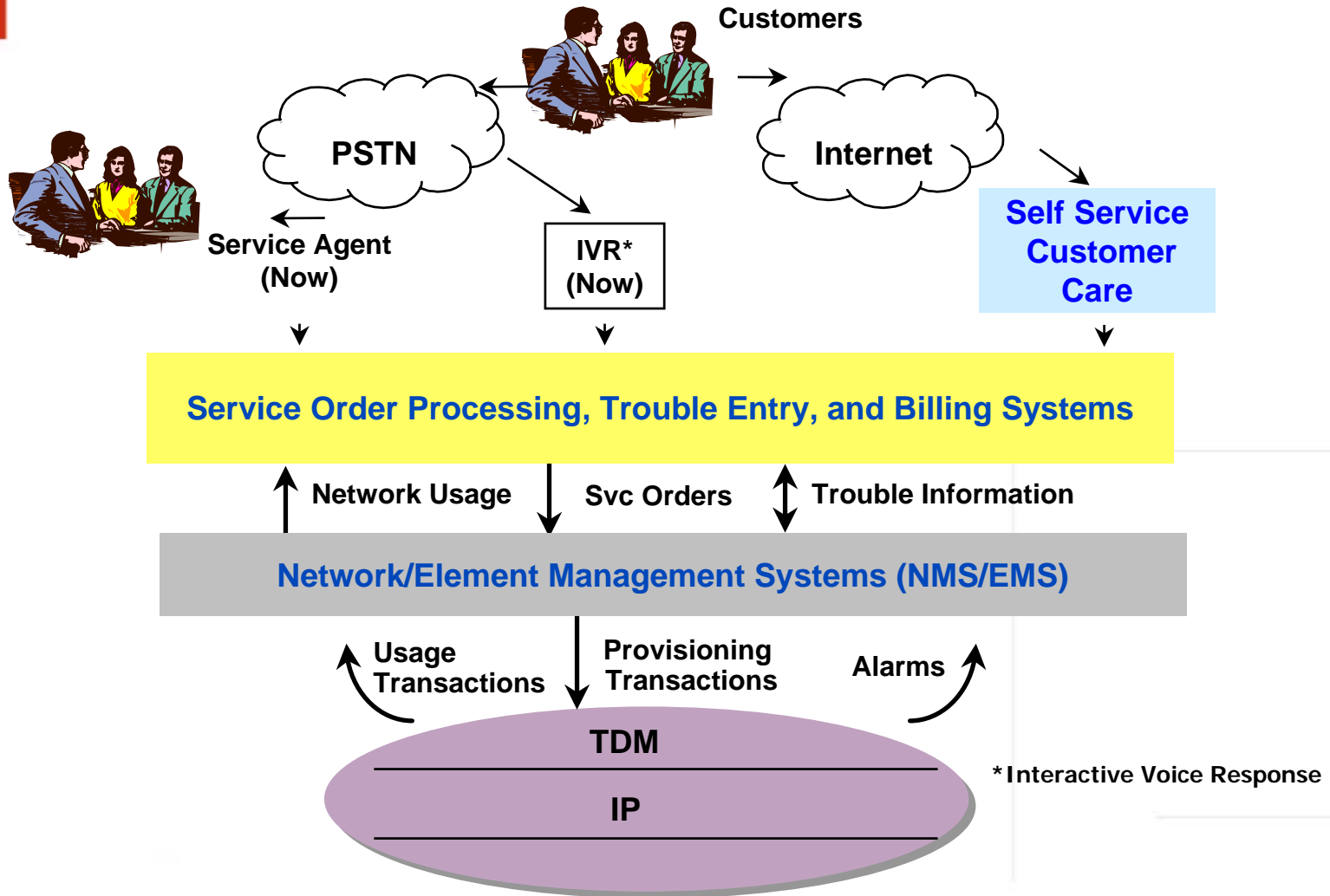
Outside Technicians – The Most Significant Operations Cost



- *Almost \$9 billion in Labor Expense in 2002*
- *Over 21 million installation dispatches*
- *Over 51 million repair/routine maintenance dispatches*

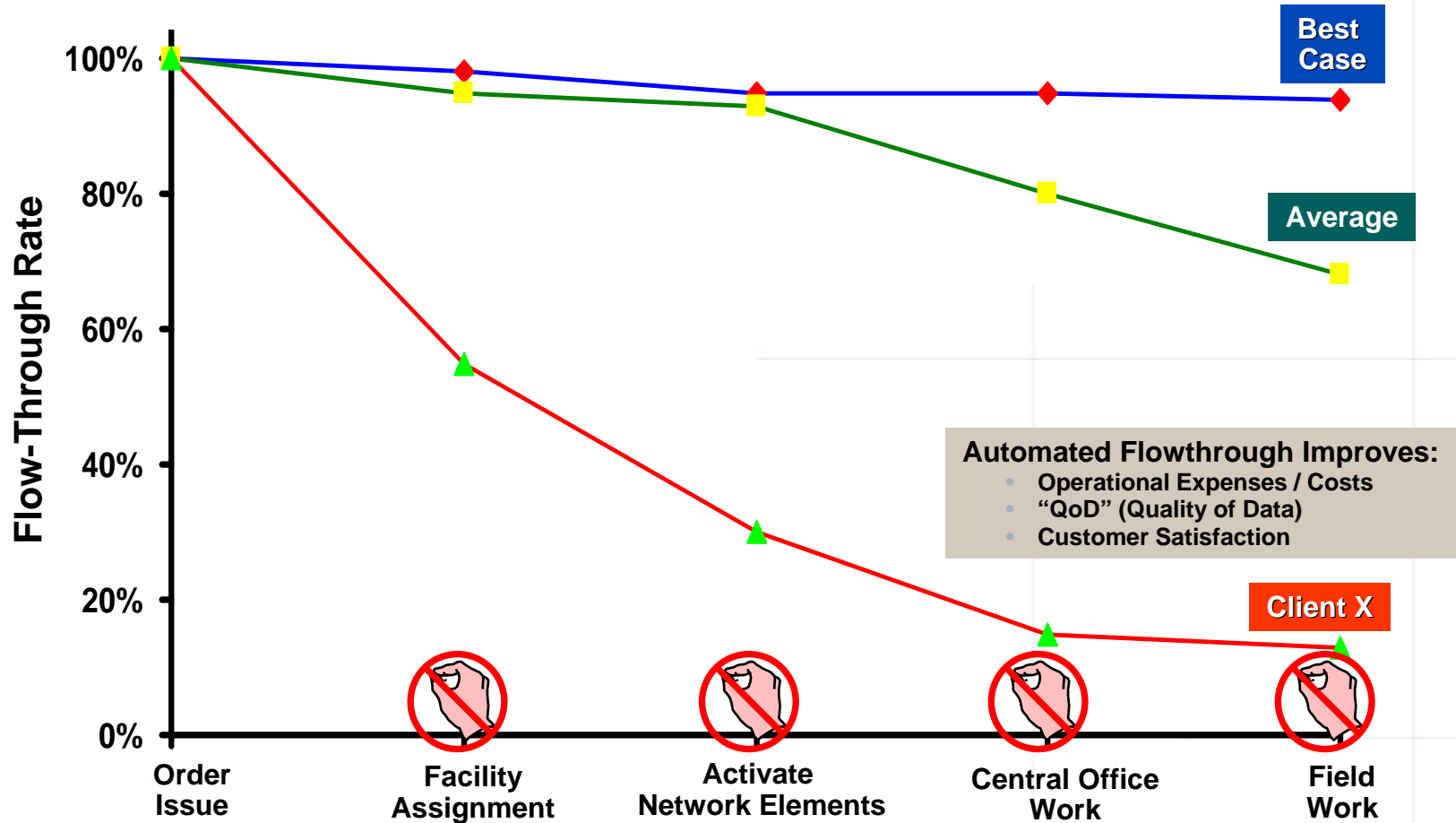


Customer Service Channels



Flowthrough Operations Yields Cost Savings

Residential Service Activation



NMS Functional Requirements to Realize Goal

- **Customer self-service real-time Web based interfaces for Provisioning, Assurance, Performance Management to support streamlined operations and reduced cost**
- **Real-time, open, defined interfaces for all modules from BSS to NMS to EMS to Network Elements that support “flow-through”**
 - Inventory qualification inquires
 - Inventory reservations
 - Design/Assign/Activation requests
 - Work force status inquires
 - Test requests
 - Fault management
 - QoS inquiries
- **Flexible Process and Interface Specification and Implementation**
- **Provisioning and Fault management integration with a FedEx type work and force tracking model to tightly manage labor costs, time, equipment, e.g., plug-ins**
- **Reporting capabilities that support asset “Yield Management” by tracking and managing service revenues vs. capital expense per facility (e.g., E1, OC3) to increase returns on capital assets**