



Cisco Expo
2009

Managed Services

Overview



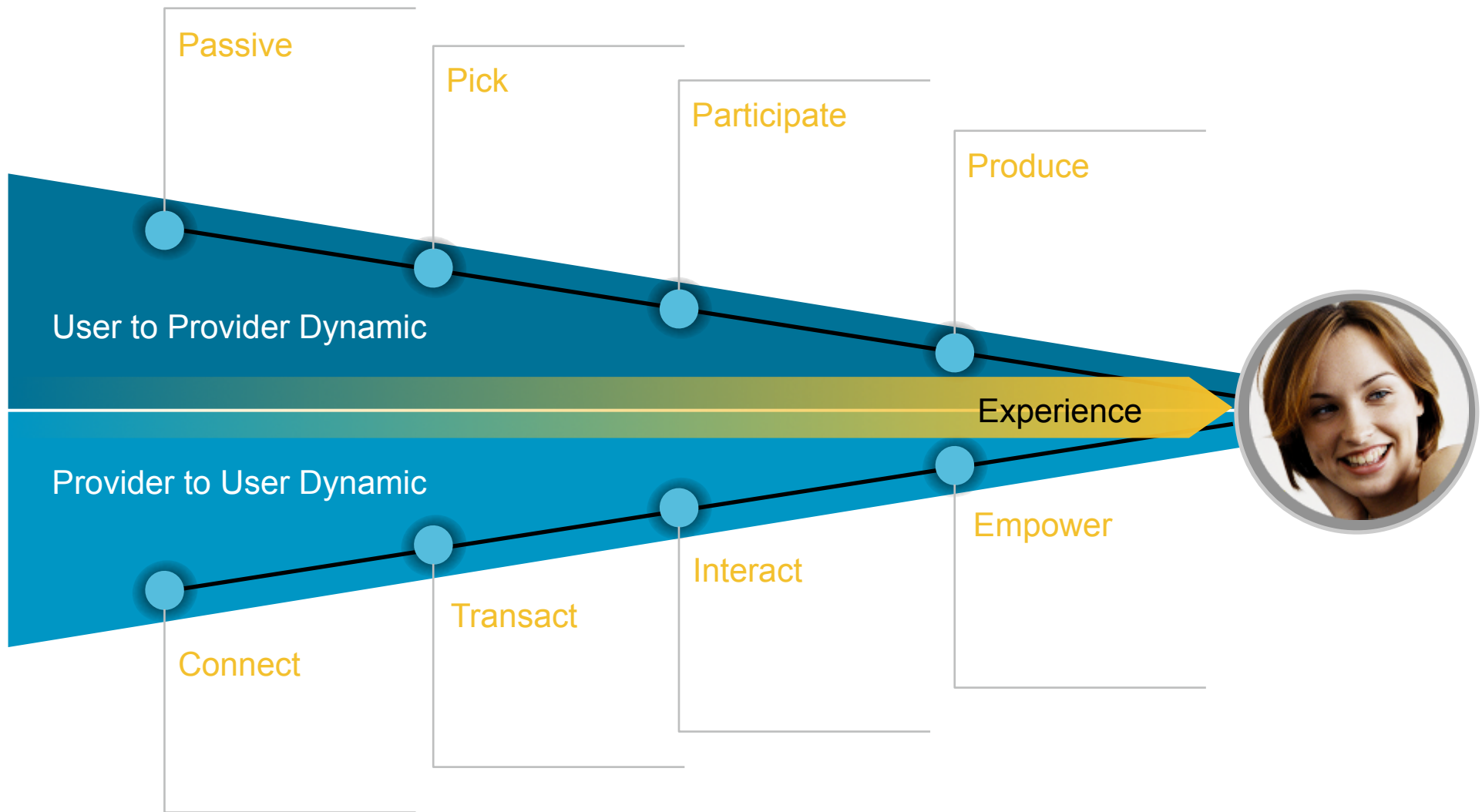
Nico de Louwere

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Cisco Expo Cairo

The Rise of the Empowered Consumer

Evolutionary Phases of Experience



New Experience Provider Offer

Enabling the Next Wave of Broadband

Add Services



Branded
VoD
(\$4.99/movie)

Add Value



Branded
TV
(\$29.99)

Add Subscribers



Branded
Phone
(\$15.99 + LD)

Parental-Control
(\$5.99)

Anti-Spam
(\$5.99)

Anti-DoS
(\$5.99)

Broadband
Light
\$19.99

Broadband
4 Kids
\$24.99

Broadband
Basic
\$29.99

Broadband
Advanced
\$39.99

Broadband
Business
\$49.99

“ The bad news is time flies. The good news is you are the pilot “

Michael Althsuler

Impact Of Operational Transformation

The Evolution of the Auto Industry

100 years ago



- 485 USA car manufacturers
- Vertical business model
- Ford Model T:

Assembly line

Interchangeable parts

Mass production

15M produced 1908-1927

Today

2003 Mustang

Model > Exterior Color & Interior Trim > Options > Next Steps...

2003 Mustang Convertible GT - Premium
Vehicle may vary from picture shown.

Your Built Vehicle:

Total MSRP:	\$30,525.00
Total Invoice:	\$27,914.00

click here for Total MSRP and Total Invoice explanation

Your Current Selections:

Model: Convertible
Series: Mustang GT
Feature Level: Premium
Engine: 4.6L, 16-Valve, SOHC SMPI V8
Transmission: 4-Speed Automatic Transmission

Exterior Color & Interior Trim

- Torch Red Clearcoat
- Parchment Roof (Sandalwood)
- Medium Parchment

Options

- Interior Upgrade Package
- 4-Speed Automatic Transmission

Special Packages

	MSRP
<input checked="" type="checkbox"/> Interior Upgrade Package	\$295.00
- Aluminum finish door lock posts	
- Center finish panel - grey metallic paint	
- Shifter bezel - grey metallic paint	
- Aluminum finish shift boot trim ring	
- Stainless steel foot rest assembly	
- Stainless steel pedals	
- GT leather shift knob (Mach 1 keeps aluminum shift knob)	
- 4-Way head restraint	

Options/Upgrades

<input type="checkbox"/> MACH 1000 Audio System w/ In-Dash 6-CD Changer	\$1,295.00
<input checked="" type="checkbox"/> 4-Speed Automatic Transmission	\$815.00
<input type="checkbox"/> 17" 6-Spoke Bright Wheels	\$395.00

Help On This Page < Back Next: Choose Your Next Steps... >

- 3 USA car manufacturers
- Horizontal business model
- Core competencies:

Assembly & Design

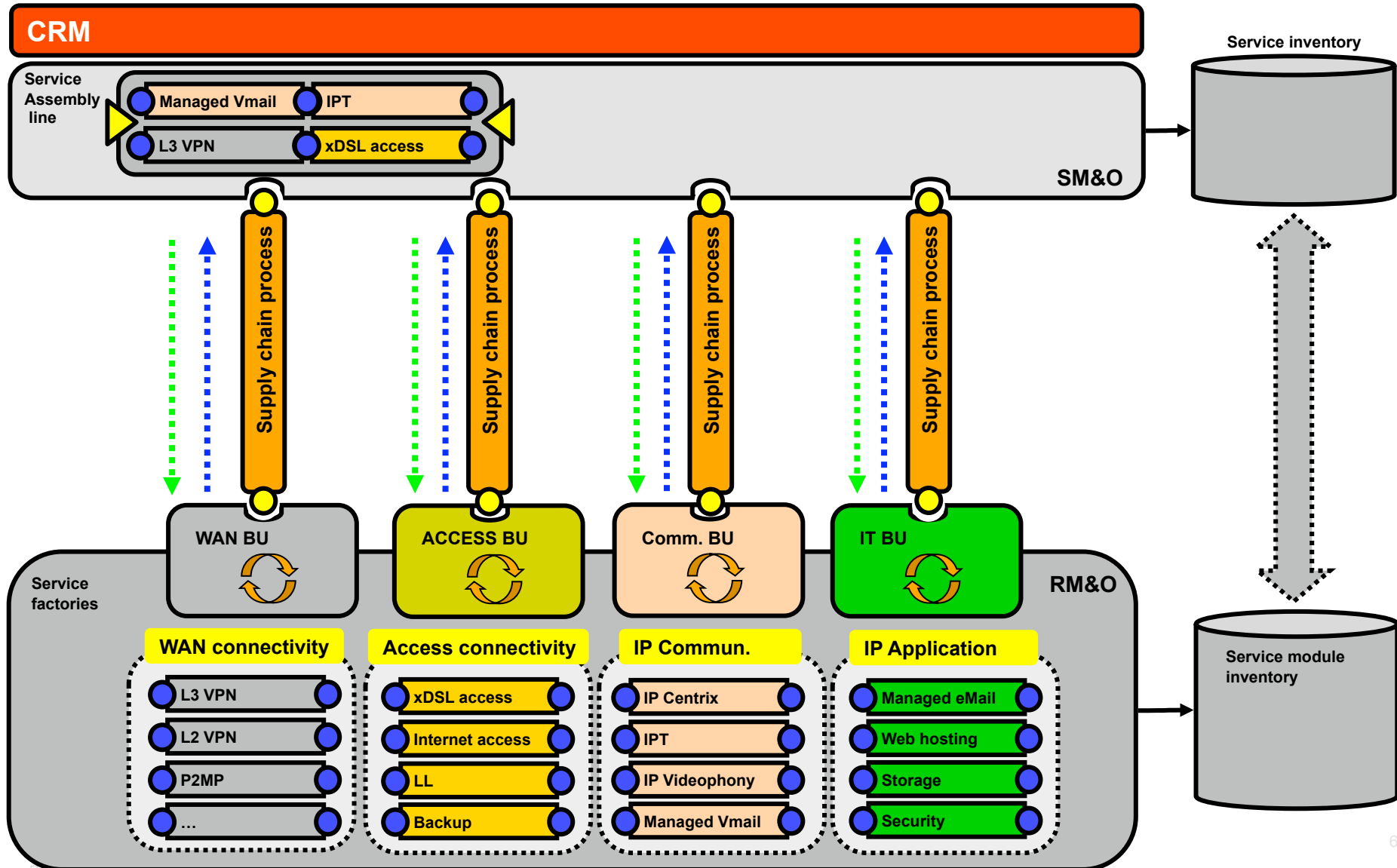
Supply chain orchestration

Mass customization

Modularization

Factory-Based Service Operation

Conceptual Overview of Service Factory



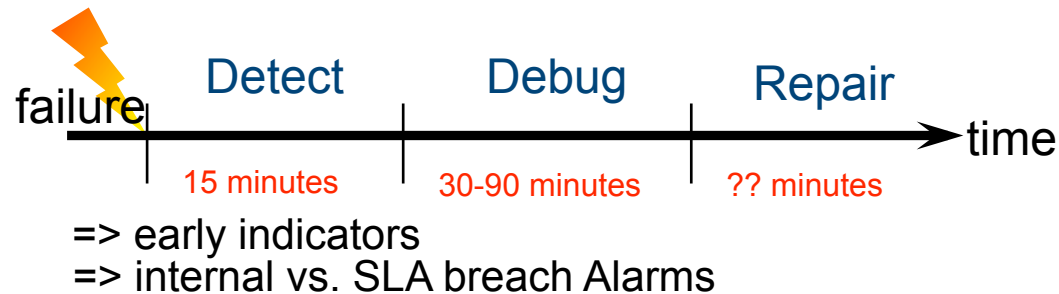
SLA Assurance Concepts

The Time Challenges ...

- **Availability**

99%	< 7hrs 12 mins down / month
99.9%	< 43 mins down / month
99.99%	< 4 mins down / month

- **MTTR / Intervention Times**



- **Delay / Jitter**

What to guarantee ?
Where to measure, how to measure ?



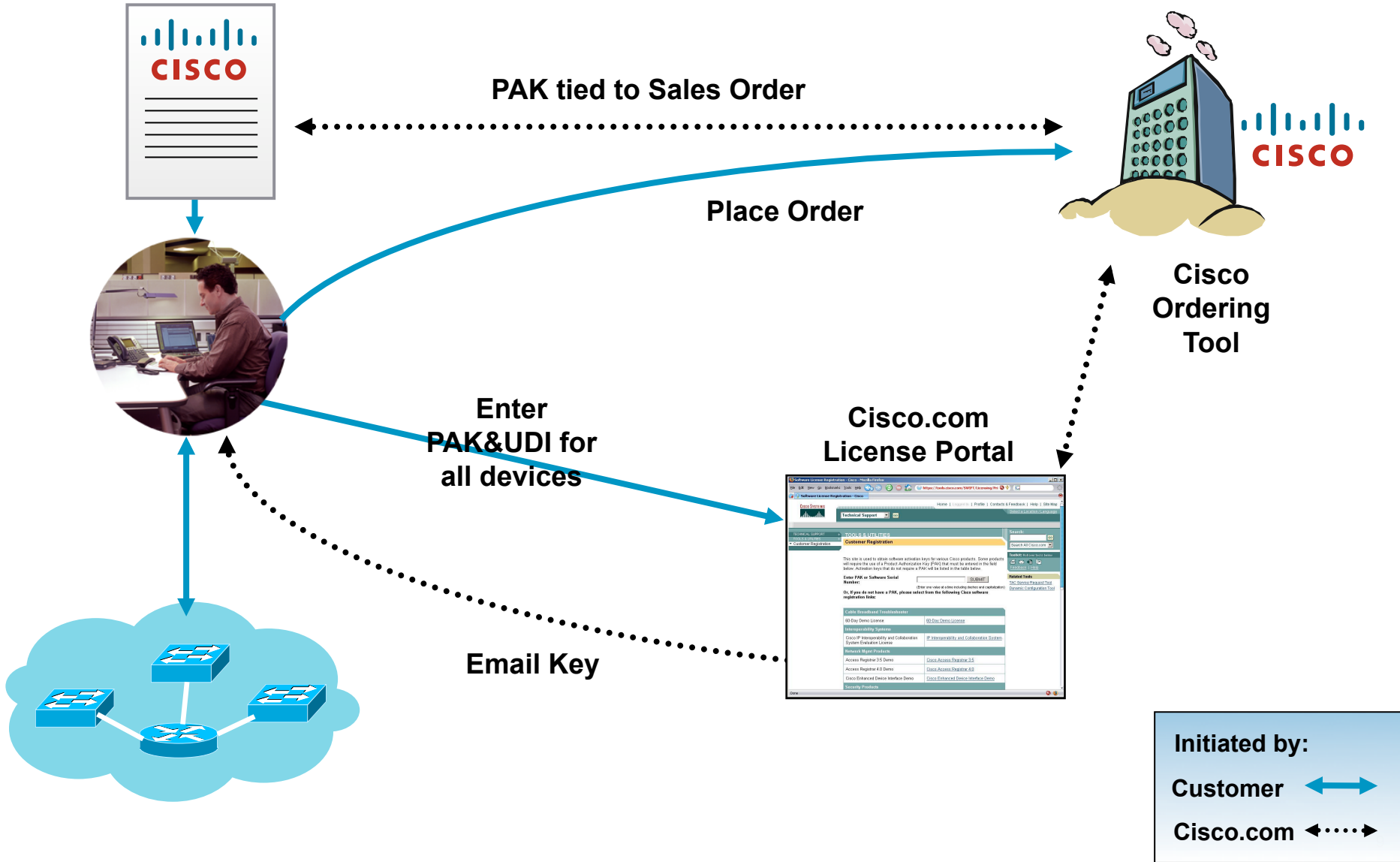


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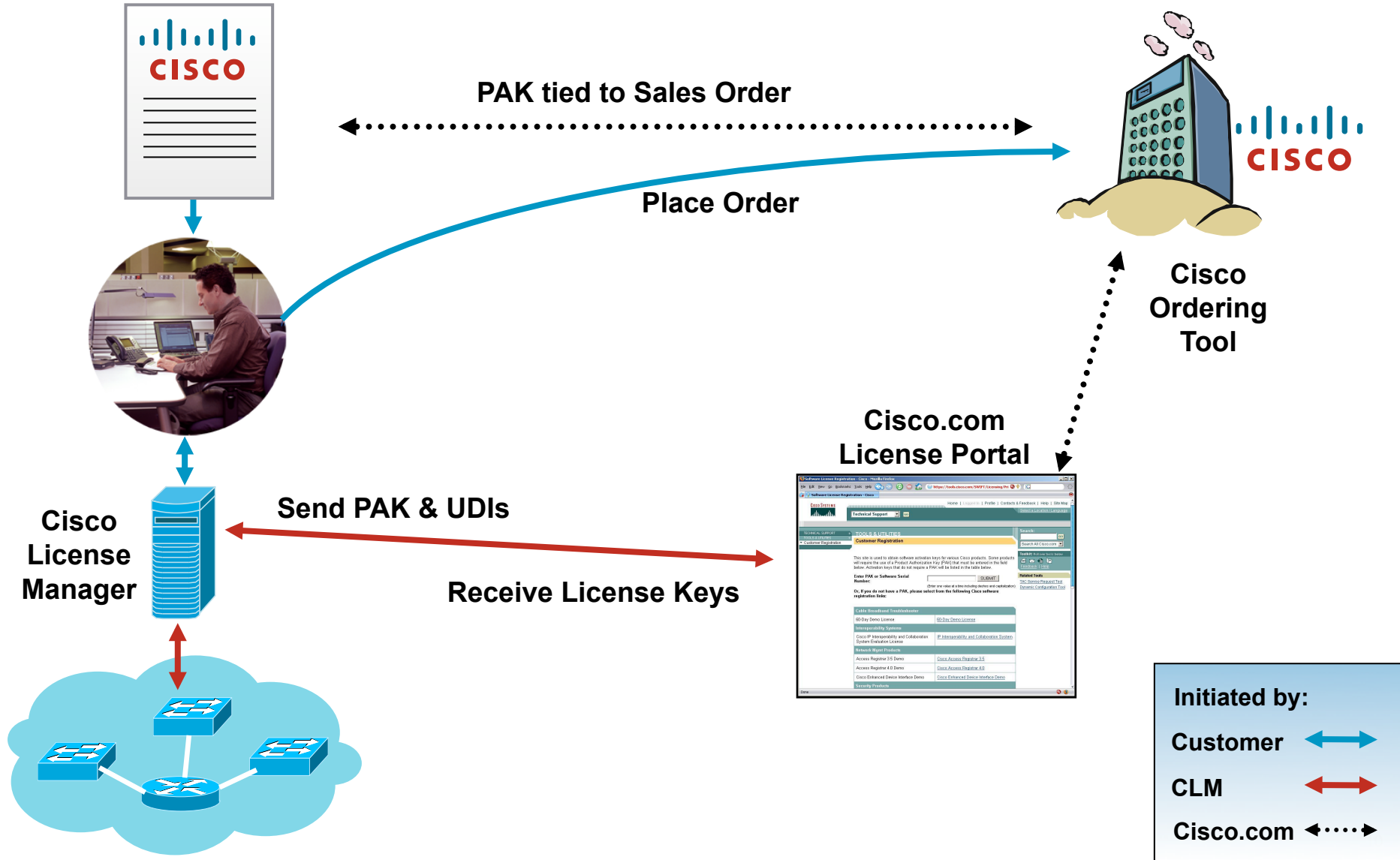
Cisco License Manager 2.1



Activation Workflow – Before CLM



Activation Workflow - After CLM



Supported Products

1. Cisco License Manager part numbers:

Cisco License Manager Client and Server Software is available **FREE** of cost

Only via [download](#) from Cisco.com

Optional products **sold** separately

CLM2.1-JAVA-SDK, CLM2.1-JAVA-SDK-U, CLM2.1-PERL-SDK, CLM2.1-PERL-SDK-U

2. Supports Software Activation and License Management for



Cisco Catalyst 3750-E and 3560-E Series Switches



Cisco Catalyst Blade Server (CBS) 3100 Series Switches



Cisco Modular ISRs – 2811, 2821, 2851, 3825, 3845



Cisco Universal Gateways - AS5350XM, AS5400XM



Cisco Fixed ISRs – C860, C880

Cisco Unified Communications 500 Series

Summary

1. Cisco License Manager automates Cisco software licensing workflows and scales to 30,000 devices
2. Detailed reporting capabilities aid in Audit compliance
3. Full functionality Java and Perl Software Development Kits (SDK) enable easy integration



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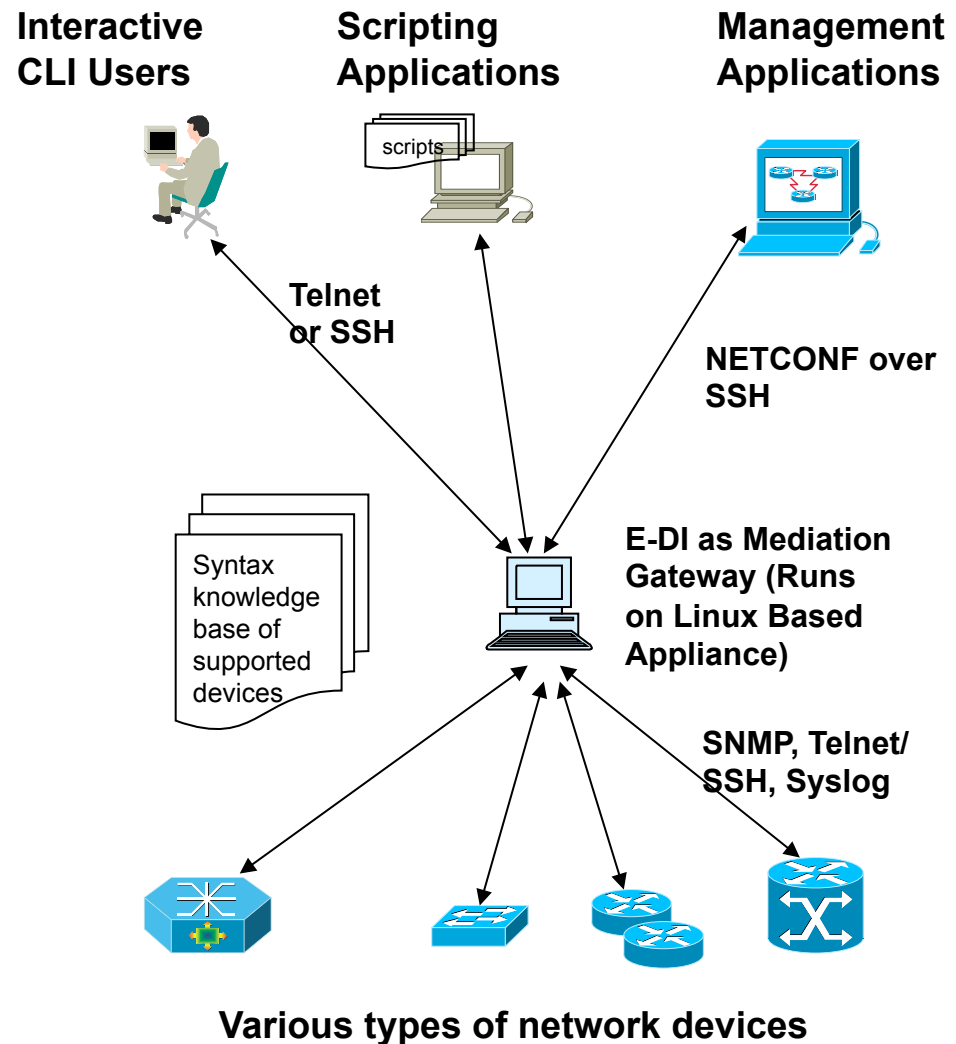
E-DI



Cisco Enhanced Device Interface – E-DI 2.1

What is E-DI ?

- What is E-DI?
 - Extension to the network device's interface
 - Provides Enhanced Command Line user Interface (CLI)
 - XML Programmatic Interface
- What is E-DI's main objective?
 -
 -
 -
 -



Main Features

- OS Parser Emulation
 - CLI syntax checking & command context validation
 - eliminates human errors
- Device Grouping
 - Definition of administrative domains
 - Access Control per administrative domain level
 - Simplifies Configuration and Administrative tasks.
- Group least common denominator CLI
 - Perform group operations without risk of generating unsupported command
- Context – Based CLI
 - Simultaneously apply changes to one or more devices by selecting the context
 - Single point for network configuration

Cisco Enhanced Device Interface – E-DI 2.1

IOS-like Command Line Interface

- Real-time syntax validation & visual feedback

```
192.168.2.50 - PuTTY
admin@jahi-es-50[MyGroup]# net 192.168.16.5 192.168.16.5
You are now in network view.
Your present working directory: /network/groups/

admin@jahi-es-50[MyGroup]# sh cdp neighbors

Local-Dev      Local-If Neighbor      Neig
-----      -
ID/IPAddress   If
-----      -
192.168.3.206 Fa0    192.168.3.5   Fa0
192.168.3.207 Fa0    192.168.3.5   Fa0
192.168.16.5   Fa0/1  192.168.3.1   Eth
192.168.16.5   Fa0/2  192.168.3.6   Fa0
192.168.16.5   Fa0/2  192.168.3.6   Fa0
192.168.16.5   Fa0/3  192.168.3.206 Fa0
192.168.16.5   Fa0/4  192.168.3.208 Fa0
192.168.16.5   Fa0/7  192.168.3.203 Fa0
192.168.16.5   Fa0/10 192.168.3.8   Fa0
192.168.16.5   Fa0/12 10.0.0.1      Fa0
192.168.16.5   Fa0/13 192.168.16.16 Fa0
192.168.16.5   Fa0/14 192.168.16.15 Fa0
192.168.16.5   Fa0/15 192.168.16.1  Fa0
192.168.16.5   Fa0/19 192.168.3.204 Fa0
192.168.16.5   Fa0/20 192.168.3.207 Fa0
192.168.16.5   Fa0/24 192.168.3.6   Fa0

admin@jahi-es-50[MyGroup]#
admin@jahi-es-50[MyGroup]#
```

```
192.168.2.50 - PuTTY
admin@jahi-es-50[network]# sh dev
admin@jahi-es-50[network]# sh devices
Number of devices in network: 21

IP Address      Name                Type                Vendor              Status
-----
192.168.1.5     accesssw_1_5       Cat355024           Cisco               P3-alarm
192.168.1.10   termaccessrtr_1_10 CiscoAS2511RJ       Cisco               normal
192.168.2.2     JahiTestRtr-1     Cisco2621           Cisco               P3-alarm
192.168.2.4     rtr_2_4            Cisco831            Cisco               P5-alarm
192.168.2.5     sw-2-5             Cat355024           Cisco               P3-alarm
192.168.2.173  Jahi-              CiscoAP1210         Cisco               P2-alarm
192.168.2.204  ap-lita            CiscoAP1100         Cisco               P3-alarm
192.168.3.1     accessrtr_1_1     Cisco2621           Cisco               normal
192.168.3.3     rtr-3-3           Cisco7505           Cisco               P3-alarm
192.168.3.6     sw_3_6            Cat2924XL           Cisco               P3-alarm
192.168.3.7     sw_3_7            Cat2924XL           Cisco               P3-alarm
192.168.3.8     sw-3-8            Cat37xxStack        Cisco               P2-alarm
192.168.3.20   rtr-3-20          Cisco3640           Cisco               P2-alarm
192.168.3.203  ap-3-203          CiscoAP350IOS       Cisco               offline
192.168.3.204  ap-3-204          CiscoAP350IOS       Cisco               offline
192.168.3.206  ap-3-206          CiscoAP350IOS       Cisco               normal
192.168.3.207  ap-3-207          CiscoAP1210         Cisco               normal
192.168.3.208  ap-3-208          CiscoAP1100         Cisco               normal
192.168.16.5   sw-3-5            Cat355024           Cisco               P2-alarm
192.168.16.15  ap-16-15          CiscoAP1100         Cisco               P5-alarm
192.168.16.16  ap-16-16          CiscoAP1100         Cisco               P5-alarm

admin@jahi-es-50[network]#
```

```
E-DI - 172.19.103.125
admin@EDI-server[GRP:~/Routers/# sh run | include sla
[172.19.103.67] running-config ----->
[172.19.103.68] running-config ----->
[172.19.103.69] running-config ----->
[172.19.103.85] running-config ----->
ip sla 7
ip sla schedule 7 life forever start-time now

admin@EDI-server[GRP:~/Routers/#
```


Cisco Enhanced Device Interface – E-DI 2.1

Benefits

For Customers

1. **Reduced** Network Operating **Costs**.
2. **Increased** Operational **Efficiency** and Productivity.
3. Reduced Training Costs – **No Additional Learning** for each new Technology or Platform.
4. Extendable and **Customizable**.
5. **Complementary** to Existing to Solutions.

Additionally, for Developers, Integrators, SPs

1. Fast and Robust way to speed-up PoC, Pilot Deployments, Rapid Integration, Services to Early-Adopter Markets

Mediation at Network Level - Configuration

Broadband Access Center (BAC)



Broadband Access Center – Overview

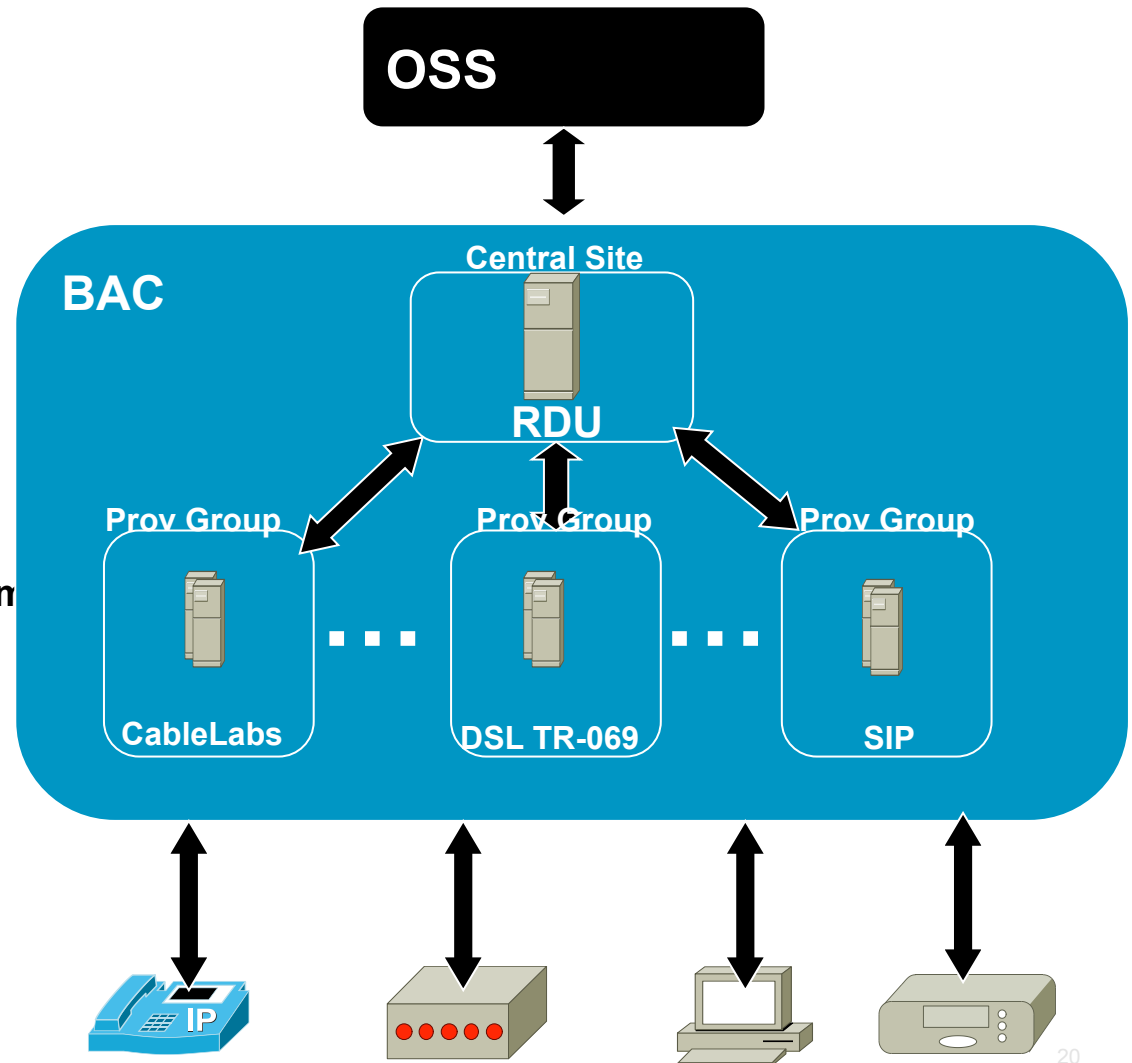
Executive Summary

- BAC provides a centralized and automated management system for service providers to control and configure home gateways and the IP devices behind the gateways
- Transport technology agnostic
- BAC strengths:
 - Platform offering support for multiple existing and new technologies and residential devices:
 - DOCSIS, PacketCable, CableHome, Satellite
 - TR-69 ACS
 - SIP
 - Automation, redundancy, performance, scalability, and high availability

Broadband Access Center – Overview

Key Characteristics

- Supports up to 35 million devices
- Scalable distributed architecture
- Multiple provisioning options
- Central management
- Performance
- Reliability (Failover)
- APIs & Extensibility
- Standards Based (authors)
 - DOCSIS, Packet Cable, CableHome
 - TR-069
 - SIP
- Technology Agnostic
 - Cable
 - DSL
 - Satellite
 - SIP





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Zero-Touch Deployment

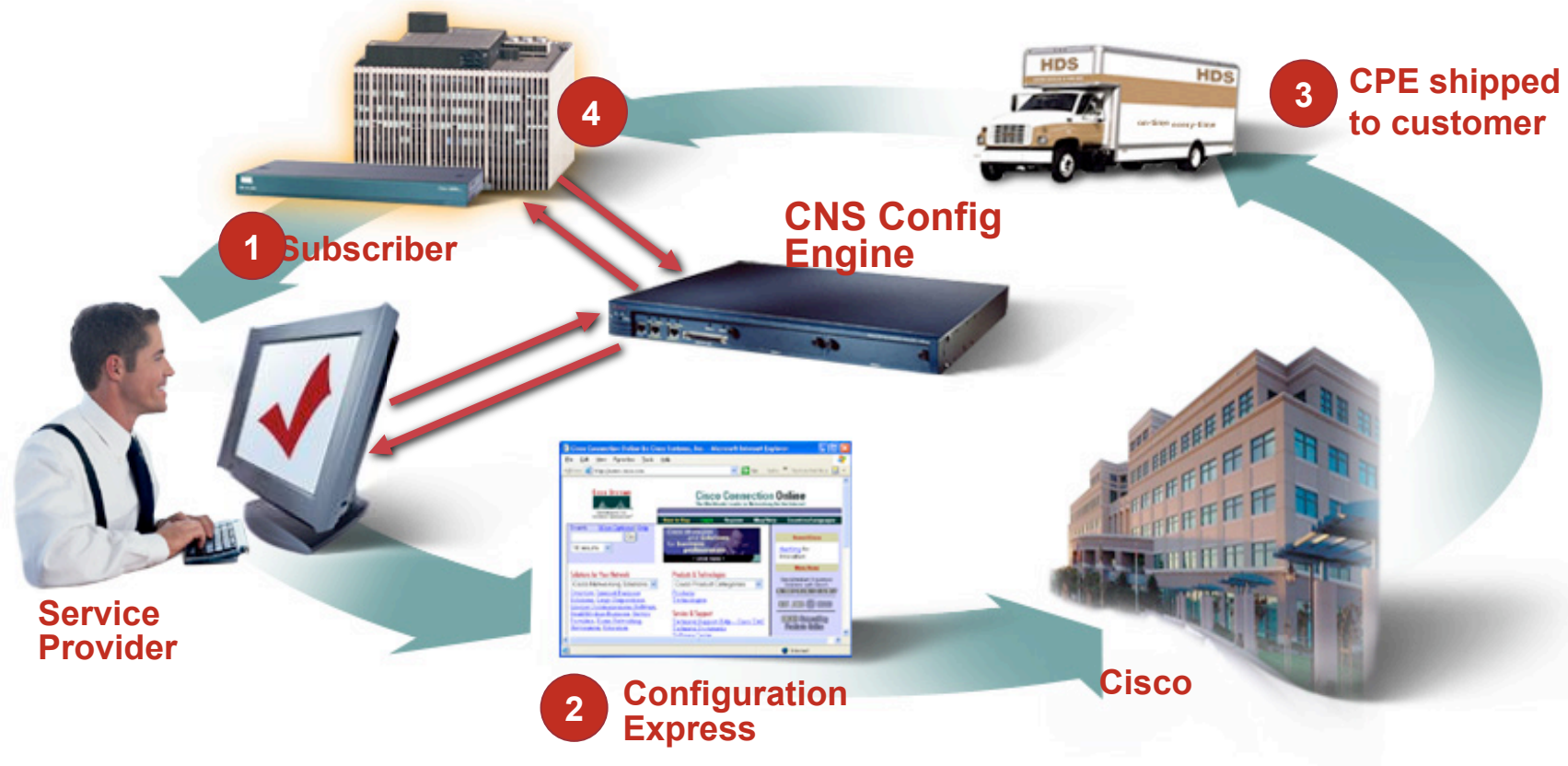


ZTD

What is Zero-Touch Deployment ?

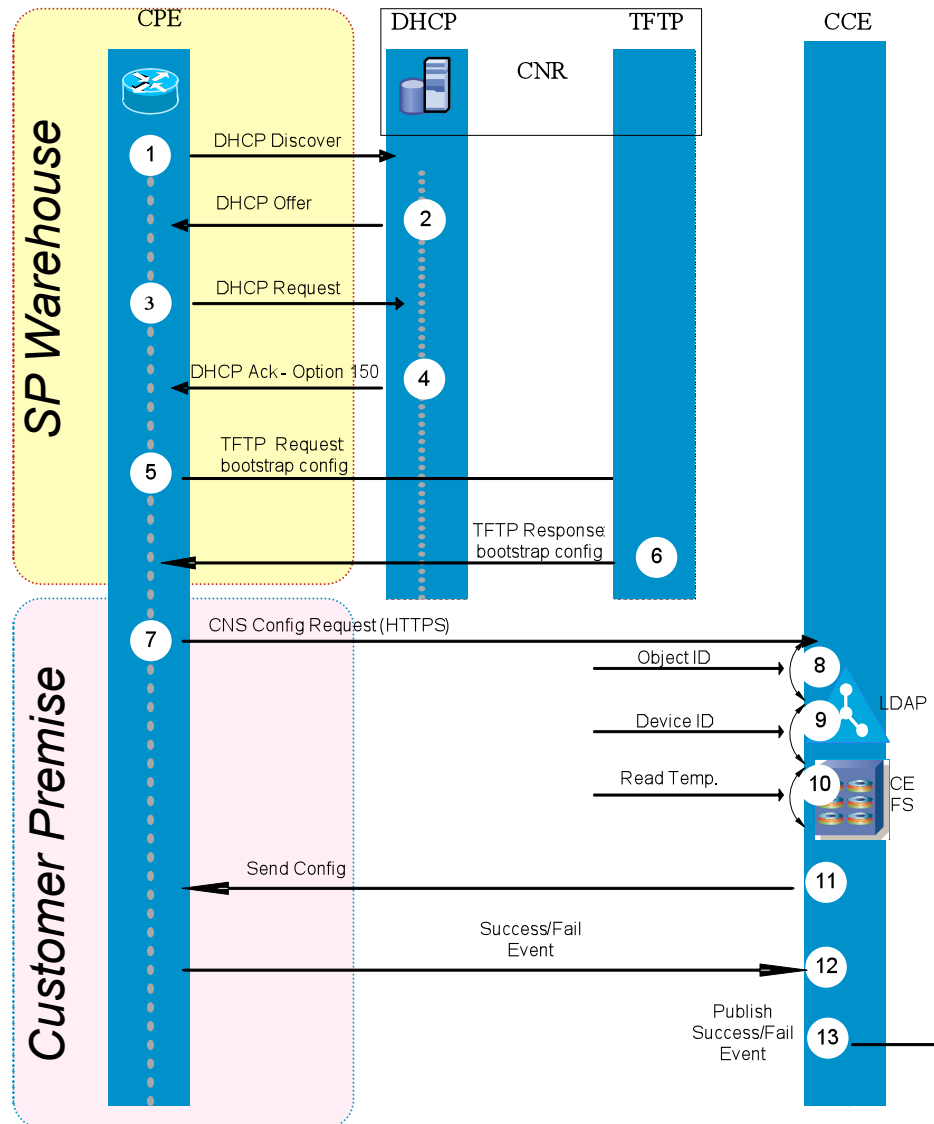
1. Zero Touch Deployment **automates ordering, configuration and deployment** of Cisco CPE in large scale environments.
2. Zero Touch Deployment enables the SP to
 - **reduce time to market**, thus increasing customer satisfaction and accelerate revenue streams
 - **reduce operational expenses** and being able to reallocate valuable IT resources
 - while **improving reliability, security** and **efficiency** of the deployment and life cycle management.

ZTD CNS Config Engine – 0-Touch Deployment



1. Subscriber orders managed service from Service Provider
2. Service Provider orders subscriber CPE online from Cisco
3. Cisco ships customer CPE with bootstrap config. SP can track shipment online
4. Subscriber plugs in CPE and device boots, pulls service configuration, and validates
5. Device publishes 'configuration success'—service is on!
6. SP OSS workflow engine monitors events and triggers next step

ZTD Zero-Touch Deployment



1. CPE sends DHCP Discover
2. DHCP Server replies with Offer
3. CPE sends DHCP Request
4. DHCP Server replies with option 150
5. CPE requests `network-config` file via TFTP
6. TFTP server sends CPE `network-config` file

=> CPE is shipped to Customer Site
=> Customer Order linked to CPE ID

7. CPE sends HTTP request to CNS-CE
8. CNS-CE verifies object ID
9. CNS-CE verifies Device ID
10. CNS-CE reads template from File System
11. CNS-CE sends Config (Config = template + parameters from LDAP)
12. Successful event
13. Publish success event

Solution Tested

ZTD

Typical Savings Areas

- **Generic ConfigExpress Template**
 - No customer-specific, service-specific, site-specific preconfig
 - No unpack → config → repack exercise
 - Logistics advantages of handling generic devices
- **Automated & Secured Bootstrap**
 - reduced field-force training & on-site time
 - improved provisioning quality
 - improved provisioning security / privacy
- **Monitored Bootstrap Process**
 - events can trigger higher layer OSS, no 'SMS-handshake'
 - fault monitored deployment process
 - allows for reporting on deployment lead times
- **Others**
 - fast deployment
 - addressing modular router challenges
 - up-/downgrade from unknown IOS image
 - works without knowing CPE IP address

ZTD

ROI Calculation – Examples 1/2

- Key Input Figures

CPE Deployment Schedule (5 year)	Year 1	Year 2	Year 3	Year 4	Year 5
#VPN CE Deployed/yr	1000	3000	6000	12000	24000

Manual Cost Drivers:	Default Value	Low Value	High Value
Truck Roll Cost/Device	\$ 175	\$ 150	\$ 300
Labor Rate for Manual Config	\$ 75	\$ 45	\$ 70
Error Rate, Manual Config	15%	15%	35%
Time to Install & Config (min)	60	45	90
Time Lag: Order to First Day Billing (days)	15	12	20

Automated Cost Drivers:	Default Value	Low Value	High Value
% Reduction in Truck Rolls Expected	80%	60%	95%
Labor Rate Shipping & Powerup	\$ 50	\$ 25	\$ 35
Time to Install Config Stub/CPE (min)	20	5	15
Time Lag: Order to First Day Billing (days)	6	3	7

ZTD

ROI Calculation – Examples 2/2

- Sample Results Summary

CPE Deployment Schedule (5 year)		Year 1	Year 2	Year 3	Year 4	Year 5
#VPN CE Deployed/yr		1000	3000	6000	12000	24000

	Year 1	Year 2	Year 3	Year 4	Year 5
Manual CPE Deployment Cost	\$ 261'250	\$ 783'750	\$ 1'567'500	\$ 3'135'000	\$ 6'270'000
Net Present Value (NPV), Manual Deployment	15% \$ (7774'233)				
Automated CPE Deployment Cost	\$ 51'667	\$ 155'000	\$ 310'000	\$ 620'000	\$ 1'240'000
Enabling Software Cost (ie2100)	\$ 42'000	\$ 112'000	\$ 224'000	\$ 441'000	\$ 875'000
Total Cost for Automated Solution	\$ 93'667	\$ 267'000	\$ 534'000	\$ 1'061'000	\$ 2'115'000
Accelerated Revenue	\$ 29'032	\$ 87'097	\$ 174'194	\$ 348'387	\$ 696'774
Annual Net Savings (Automated vs Manual)	\$ 196'616	\$ 603'847	\$ 1'207'694	\$ 2'422'387	\$ 4'851'774
NPV of Automated vs Manual Deployment	15% \$ 6'001'666				
Payback Period: 1st Year Deployment		63 days			
5-Year ROI		228%			

➔ Process Variations (phase 1, 2, 3) to be taken into account

➔ To be calculated based on your figures & projected optimisation





... thank you ...

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