Alcatel-Lucent
Digital Home Care Solution

Creating a Better Experience
for Your Customers

Alcatel·Lucent

You are eager to deploy triple-play services and generate revenues from innovative services such as IP television (IPTV). But to make triple-play deployment a success, you need to create a compelling customer experience while solving your own operational challenges and maintaining reasonable OPEX.

The Alcatel-Lucent Digital Home Care solution is a comprehensive solution that solves the challenge of managing home networks, triple-play services and customer-support interactions. It cares for all stages of services deployment and provides a high degree of automation, advanced troubleshooting and customer self-management. The solution is designed to help you maintain reasonable OPEX while delivering a better experience for both you and your end users.

The Customer Challenge

When setting up triple-play services, you are naturally concerned about the many operational challenges. The growing complexity of home networks and the lack of knowledge of end users to manage and solve problems by themselves almost inevitably increases your burden. Furthermore, real-time services, such as video and voice, are highly sensitive to disruptions and quality issues in the access or home environment.

The early stages of triple-play service deployments have revealed that the lack of appropriate management solutions have frustrated both you and your end users. End users often experience great difficulties in their attempts to configure and activate home devices by themselves. Now, with the growing complexity of the home environment, the potential sources of problems have increased, ranging from simple software bugs and connectivity disruptions to the trickier issues of configuration and setup compatibility.

Any of these problems could easily affect the conditions under which you deliver services to the consumer. Multiple service disruptions and poor service quality will frustrate your end users, resulting in a surge of help-desk calls, costly repair operations, dissatisfaction and churn. This translates into lost revenue and higher OPEX, diminishing the profitability of your triple-play service offering. Figure 1 illustrates the challenges in home management.
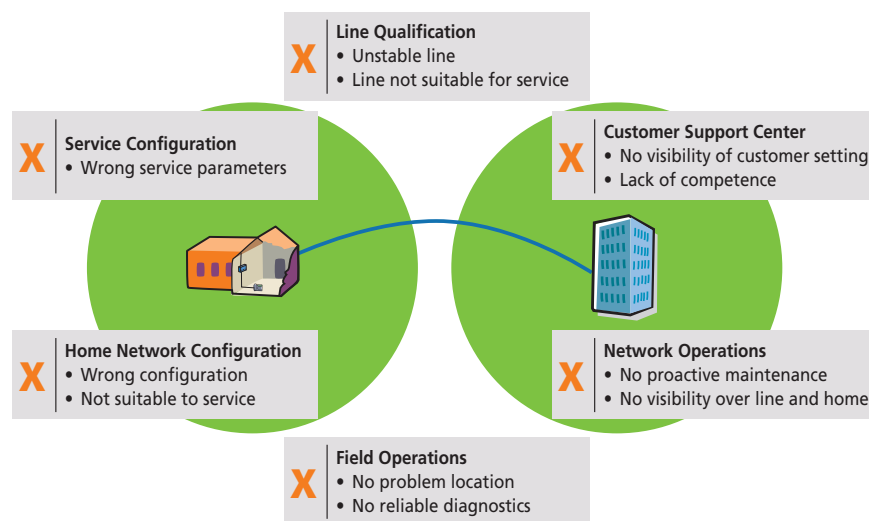
WHAT DO CONSUMERS WANT?

- Value-added services and content they can enjoy

- Services that work easily without requiring an understanding of complex technology issues

- Quality on par with, or even better than what they experienced before

- Services that work smoothly and providers who take care of making them work

WHAT REALITY DO YOU FACE?

- Accountability for service delivery, now highly dependent on the home environment

- Millions of home networks and home devices to support a broader range of services

- Customer expectation for the highest service quality – even for the most sensitive real-time services

- xDSL infrastructure, which is often stretched to its performance limits

Figure 1. A Broad View of Digital Home Management Challenges: Where Things Could Go Wrong

Line Qualification
- Unstable line
- Line not suitable for service

Service Configuration
- Wrong service parameters

Customer Support Center
- No visibility of customer setting
- Lack of competence

Home Network Configuration
- Wrong configuration
- Not suitable to service

Network Operations
- No proactive maintenance
- No visibility over line and home

Field Operations
- No problem location
- No reliable diagnostics

- 27 percent of users experienced home networking problems – 31 percent of those called the SP. (Parks Customer Survey)

- 30 percent of home networking devices are returned! (Wall Street Journal)

- 70 percent of returned devices have No Defect Found (NDF). (North American ILEC)

- Over 25 percent of consumers would like to connect their TV and stereo to their home network. (TDG, Consumer Survey)

- We received an average of one call per subscriber during installation! (European ILEC on IPTV service launch)

The Alcatel-Lucent Solution

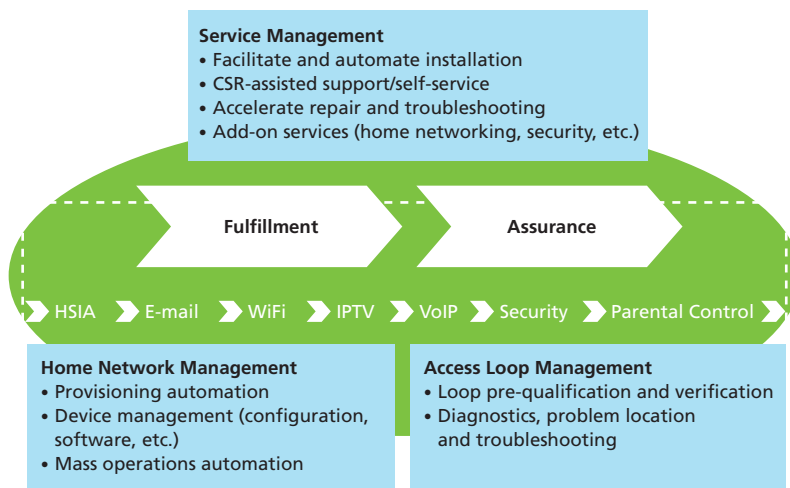The Alcatel-Lucent Digital Home Care solution is a comprehensive solution designed to solve your home networks management challenge and associated end-user support interactions. It cares for all fulfillment and assurance processes applied to home networks and triple-play services. The solution helps you deliver the service quality and experience your customers expect. It allows a comprehensive approach, spanning from the access loop to the home, enabling you to make more appropriate service-provisioning decisions and to diagnose problems faster and more accurately. Thanks to its high degree of automation and advanced troubleshooting, you can manage large networks while keeping the cost of operations at a reasonable level.

The Alcatel-Lucent Digital Home Care solution is built around products and expertise from Alcatel-Lucent and Motive. It benefits from both Alcatel-Lucent's expertise in end-to-end network solutions for triple-play and operations support systems (OSSs), and from Motive's position as a leading provider of management software for next-generation broadband services.

The Alcatel-Lucent Digital Home Care solution is a standards-based, vendor-agnostic solution. It manages new customer premises equipment (CPE) based on the DSL Forum's TR-069 management interface and is designed to easily cope with legacy devices deployed in the field. This makes Alcatel-Lucent Digital Home Care an open and multivendor management solution, ideal for a smooth transition from current to future generation home networks. Figure 2 provides an overview of Alcatel-Lucent's Digital Home Care solution.

Figure 2. Alcatel-Lucent Digital Home Care Solution Overview

Service Management
- Facilitate and automate installation
- CSR-assisted support/self-service
- Accelerate repair and troubleshooting
- Add-on services (home networking, security, etc.)

Fulfillment → **Assurance**

HSIA → E-mail → WiFi → IPTV → VoIP → Security → Parental Control

Home Network Management
- Provisioning automation
- Device management (configuration, software, etc.)
- Mass operations automation

Access Loop Management
- Loop pre-qualification and verification
- Diagnostics, problem location and troubleshooting

MOTIVE AT A GLANCE

Almost half the world's leading broadband providers rely on Motive software to install, configure, repair and update their voice, video and data services – driving the cost and complexity out of management processes and helping providers speed time-to-market with new services. Since 1997, Motive software has been used in connection with more than 45 million endpoints, including products and services from market leaders such as AT&T, BT, Bell Canada, Deutsche Telekom, Softbank, Swisscom, Telecom Italia, Verizon and many more.

Responding to Challenges

The Alcatel-Lucent Digital Home Care Solution provides all the tools for profitable deployment of triple-play services. It keeps your OPEX related to home-network management, services management and end-user support at a reasonable level with a high degree of automation and advanced customer-support capabilities (see Figure 3).

Less Costly Operations

The Alcatel-Lucent Digital Home Care makes your home-network management easier by allowing you to manage even large numbers of devices and customer homes with a reasonably sized team. It accelerates service deployment and time-to-revenue thanks to intelligent automation tools and embedded expertise, enabling you to download the right software add-ons, support new service features or adapt the home-network configuration automatically, when required by new service deployment.
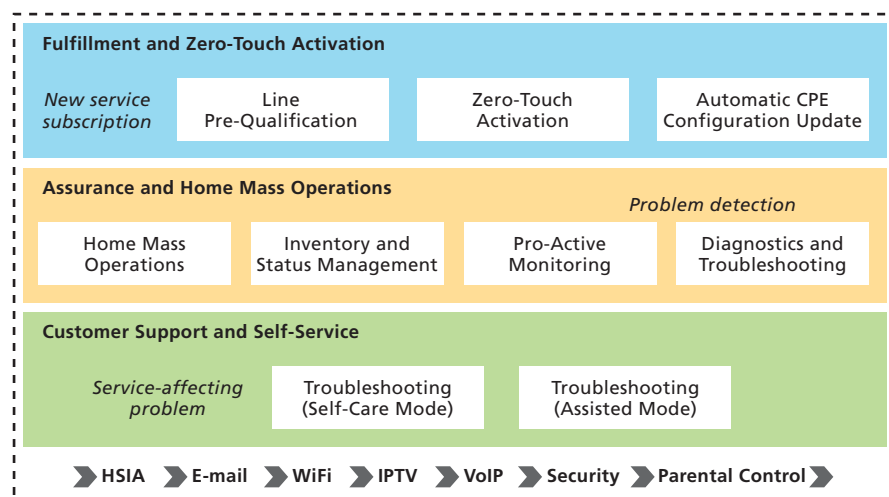
Fewer Problems, Faster Resolution

The solution enables flow-through, end-to-end processes for all fulfillment and activation tasks, including line pre-qualification, zero-touch provisioning and new activation. The solution also helps you increase service quality on a broad scale with advanced tools for service assurance, from proactive to reactive management capabilities. When problems occur, regardless of origin, network operators can diagnose and resolve them quickly from a remote management position, avoiding costly truck rolls.

Fewer Help Desk Calls

The ultimate objective of the Alcatel-Lucent Digital Home Care Solution is to create a better experience that results in more satisfied customers, as well as increased revenues. You can keep you customers' home networks and associated services up and running while shielding end users from technical complexity. Installation support and problem resolution are easy, intuitive and available 24x7 with advanced self-service capabilities that put the end user in control and remove your management burden.

Figure 3. Comprehensive Solution for All Digital Home Management Needs

Fulfillment and Zero-Touch Activation

| *New service subscription* | Line Pre-Qualification | Zero-Touch Activation | Automatic CPE Configuration Update |

Assurance and Home Mass Operations

Problem detection

| Home Mass Operations | Inventory and Status Management | Pro-Active Monitoring | Diagnostics and Troubleshooting |

Customer Support and Self-Service

| *Service-affecting problem* | Troubleshooting (Self-Care Mode) | Troubleshooting (Assisted Mode) |

HSIA ⟩ E-mail ⟩ WiFi ⟩ IPTV ⟩ VoIP ⟩ Security ⟩ Parental Control ⟩

Key Features and Benefits

The Alcatel-Lucent Digital Home Care solution, as illustrated in Table 1, helps you accelerate revenue generation from innovative triple-play and high-speed Internet access (HSIA) services, achieve important operational savings and keep customers satisfied, ensuring higher customer retention.

Table 1. Meeting Your Challenges

SERVICE PROVIDER NEED	ALCATEL-LUCENT SOLUTION	BENEFITS
1. Reduce costly, time-consuming customer support throughout service lifecycle.	• Zero-touch provisioning and self-installation enable automatic configuration as soon as the end user connects the device. • Diagnosis and problem resolution can be achieved quickly on both the home network and customer DSL access line. • Policy-based management for mass operations allows you to define rules that will trigger operations (e.g., firmware updates) on a specific set of devices.	• Control OPEX by keeping operational staff at reasonable levels. • Increase help-desk staff efficiency and avoid unmanageable workload. • Increase customer satisfaction through better service quality and better customer experience.
2. Increase service profitability and maximize customer service by reducing the number of support calls.	• Motive customer self-management modules allow end users to solve problems on their own by following simple, clear instructions.	• Slash customer support costs. • Increase ability to support even the largest customer base. • Enhance customer satisfaction by solving nearly any problem instantly with 24x7 on-line support and problem resolution capability.
3. Provide comprehensive triple-play management by handling both the home network and the access loop.	• Solution determines service eligibility of each line, avoiding further complex and costly support and repair operations. Troubleshooting operations can be handled quickly, easily and accurately.	• Resolve problems quickly and reduce operating costs throughout the triple-play service network.
4. Maintain open choice and strategic direction for CPE.	• DSL Forum TR-69 compliance enables management of any compliant CPE. • Broad interoperability tests are performed to guarantee networking with major CPE available on the market.	• Maintain independence from CPE vendors, increasing the freedom of selection and future service evolution. • Maintain negotiating power for lower CPE prices.

How Does the Solution Work?

Covers All Stages of Service Deployment

The Alcatel-Lucent Digital Home Care solution is brought to the market through a partnership between Alcatel-Lucent and Motive. The solution combines the Alcatel-Lucent 5580 Home Network Manager (HNM) for the management of home devices, the Alcatel-Lucent 5530 Network Analyzer (NA) for access-loop management and Motive's FAST™ (Fully Automated Service Technology) solutions for high-speed data, home networking and IPTV. This unique blend helps you handle all fulfillment and assurance processes, from the access loop to user homes through advanced customer-support capabilities.

The Alcatel-Lucent Digital Home Care solution manages all configuration and settings required at the network, service or application level.

The solution applies to the broad range of services delivered to customer homes through the broadband or triple-play infrastructure, including:

- Video (IPTV, video on demand [VoD])
- Voice (voice over IP [VoIP])
- Internet access (web browsing, e-mail)
- Security (firewall, parental control)
- On-line gaming

Provides a high degree of automation for home mass operations

The Alcatel-Lucent Digital Home Care solution has been engineered to meet the challenge of managing large numbers of customer homes. It enables your home-network management to be performed centrally and applied in a granular, or grouped, mode when mass operations are required. These options are especially useful for configuration updates, device-firmware updates, such as bug fixes or new service rollouts, or inventory purposes. A proactive management engine enables you to capture rules and conditions, triggering commands appropriately when conditions are met and ensuring that the right course of action is taken when problems occur.

Enables Effective Customer Support

With the Alcatel-Lucent Digital Home Care solution, you have the right set of tools to manage your customer support issues. Motive's FAST solutions provide assisted- and self-service support capabilities that simplify the processes of setting up, managing and troubleshooting next-generation service delivery, regardless of whether subscribers choose to interact with providers online or via the telephone. The benefit to your users is a more satisfying and convenient service experience. The benefits to you include decreased help-desk calls, higher productivity, and the capability to more profitably serve a greater number of customers.

Supports Advanced Customer Self-care

The self-care application guides your customers through the different steps required to activate new services or resolve problems. When customers encounter service problems, they can access the self-care application, which diagnoses the problem and assists them through all the steps required to resolve it in an easy and intuitive way. A wide array of problems affecting the home environment or service settings can be addressed, to return services to normal. This is achieved with intelligent automation that can handle problems ranging from configuration to parameter settings (for example, unsolicited change of e-mail parameter), to the many possible compatibility issues between services and devices in place (for example, changes to firewall settings required for specific online games). Table 2 outlines the applications provided by the Alcatel-Lucent Digital Home Care solution.

Table 2. Alcatel-Lucent Digital Home Care Solution Applications

	Home Network Management	Access Loop Management	Service Management
Service Fulfillment	• Zero-touch provisioning and activation • Automatic configuration and software updates	• Access-loop pre-qualification and verification	• Customer self-activation
Service Assurance	• Proactive state monitoring • Advanced problem diagnosis • Home-network troubleshooting	• Proactive-state monitoring • Advanced problem diagnosis • Access-loop troubleshooting	• Problem diagnosis (home network, services, access loop) • Problem resolution (home network, services, access loop)
Home Operations	• Granular or mass (policy-based) home-network operations • Configuration management and automatic updates • Inventory management and queries • Software management (mass downloads, service-support updates, bug fixes)		• In-Home service configuration (home-network discovery, file/print sharing, wireless-connection management
Customer Support	• Provisioning and activation (CPE, new services, etc.) • Problem diagnosis • Problem resolution (network configuration, parameter settings, software update, etc.)	• Access-loop problem diagnosis • Access-loop problem resolution	• CSR-assisted mode • Customer self-care mode

Standards-Based and Vendor-Agnostic Solution

Interoperability and multivendor management are the key requirements set by service providers like you in the field of home-network management. Alcatel-Lucent is a significant contributor to the DSL Forum's work in this field and has been proactive in defining and promoting the DSL Forum's TR-069 CPE wide area network (WAN) management protocol. This protocol describes a standard management interface between the residential gateway and management systems.

As a solution for home-network management, the Alcatel-Lucent 5580 HNM fully complies with TR-069 and manages all CPE that complies with this standard. To cope with legacy devices deployed in the field, the Alcatel-Lucent 5580 HNM also implements a flexible object model, which makes it highly adaptable for the management of other proprietary CPE, making it the only truly vendor-agnostic home-management solution available today.

To accelerate availability of a carrier-grade home-network management solution, Alcatel-Lucent has established an interoperability lab to conduct TR-069 interoperability tests on a wide variety of CPE. To date, more than 25 of the leading CPE vendors have been certified for interoperability with Alcatel-Lucent's HNM solution.

Easily Integrates into Your OSS Environment

The Alcatel-Lucent Digital Home Care solution is available both as integrated out-of-the-box, and as independent modules, tailored to your specific needs. Each module has been engineered to integrate easily into your unique environment, supporting end-to-end flow-through processes. Northbound interfaces are based on WebServices' simple object access protocol (SOAP) and provide an easy means for OSS and business support system (BSS) integration (see Figure 4).

Figure 4. Building Blocks of the Alcatel-Lucent Digital Home Care Solution
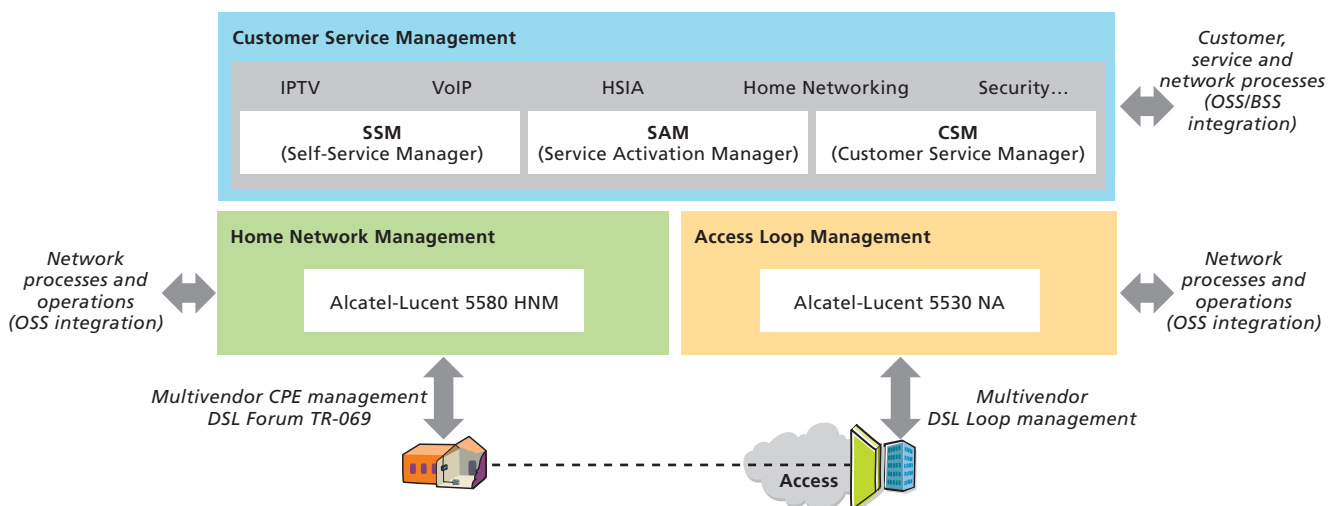
A World-Leading Partner

As your partner in delivering triple-play services, Alcatel-Lucent brings several advantages to the table.

Freedom of Choice

Alcatel-Lucent's approach is vendor agnostic, giving you the freedom to choose your CPE vendor. With more than 25 CPE vendors currently certified interoperable with HNM, you have greater flexibility and lower risk associated with deploying and supporting multiple types of CPE.

Built-in Knowledge and Experience

The solution leverages service management with built-in knowledge of customer-service management that has been deployed to more than 45 million endpoints worldwide. This expertise is extended to triple-play services, and in particular, to VoIP and video, creating a better customer experience.

Built-in DSL Expertise and Tools

Alcatel-Lucent is the DSL market leader. We are well equipped to help you build infrastructure and operational processes, guaranteeing better service quality for your customers. The Alcatel-Lucent Digital Home Care solution covers all service-affecting problems, including those that originate in the DSL access loop.

Fast Time-to-Market and Modularity

The solution is fully integrated, out-of- the-box, enabling fast deployment while remaining modular and flexible. It can be adapted to your unique conditions and needs.

Easy Integration

The solution has been engineered to allow easy integration into your customer environment and to support flow-through, end-to-end processes. Alcatel-Lucent has long-standing experience with your operational processes and large integration projects.

Efficiencies from Professional Services

Alcatel-Lucent provides extensive professional services to guarantee successful implementation in your service delivery environments. Our business-optimization service identifies detailed customer needs and drives required system and process changes. Additional offerings around solution design, integration, maintenance and operation outsourcing services help you achieve leaner processes and reduce time-to-market.

SELECTED REFERENCES

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Swisscom
Ya.com

ACCESS-LOOP MANAGEMENT

Swisscom
Iceland Telecom
Ventelo
N9UF Telecom
TeliaSonera
KPN

SERVICE MANAGEMENT

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