ClearView®

ASSIA® Software Solutions

Reliably Fast Broadband &
Wi-Fi for the Home

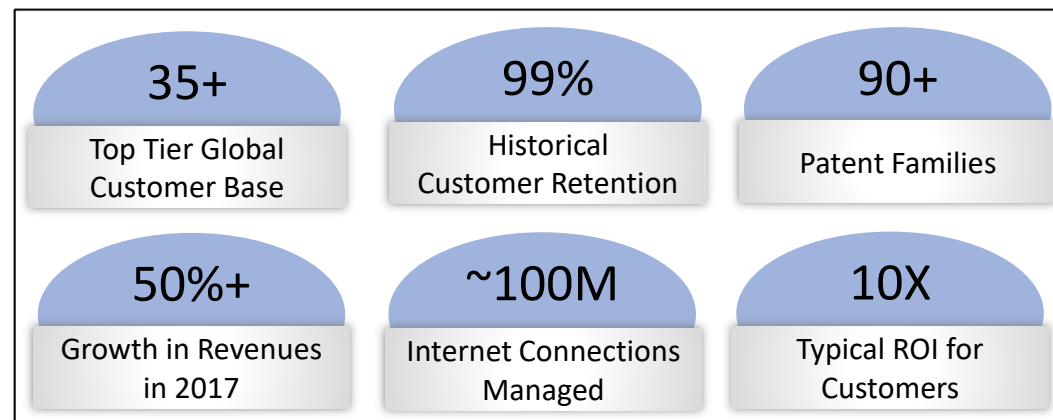# ASSIA Overview

Market Leader in Diagnostics and Optimization Software

DSL & Optical Broadband and Residential Wi-Fi

Machine Learning Cloud Technology

Improves Subscriber Internet Performance, Reliability, QoE

Reliably Fast Broadband & Wi-Fi for the Home

35+	99%	90+
Top Tier Global Customer Base	Historical Customer Retention	Patent Families
50%+	~100M	10X
Growth in Revenues in 2017	Internet Connections Managed	Typical ROI for Customers

Key Customers

at&t • bouygues • CenturyLink • orange • BT • China unicom中国联通 • Sunrise • 中国电信 CHINA TELECOM • telecomegypt • oi • Telefónica

Qwest • SFR • sky • TELUS • verizon • PLDT PHILCOM • T • true • TalkTalk • windstream • Telkom • Charter COMMUNICATIONS
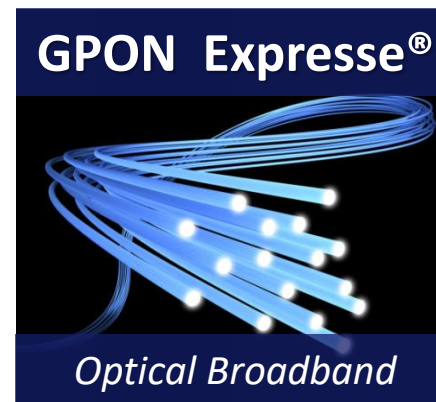
ASSIA

SOFTWARE SOLUTIONS

Driving Subscriber Satisfaction Up & Churn Down while Reducing Costs for over 30 Service Providers around the world

Reliably Fast Broadband & Wi-Fi for the Home

Market Leading Cloud Based Management, Diagnostics & Optimization serving over 100 Million Homes

ClearView®

Next Best Action for Customer Care

DSL Expresse®

Copper Broadband

GPON Expresse®

Optical Broadband

CloudCheck®

Wi-Fi Management

Professional Services
Training, Analysis, Best Practice, More

IP & Technology Licensing
Fixed Line Broadband, Wireless, Wi-Fi

3

ASSIA® has patents and pending patents that cover all the products it sells into the marketplace and represented in this presentation

ASSIA

ASSIA ClearView®

- Supports efficient customer service response
- Sophisticated recommendation engine
- Designed to improve the productivity of call-center agents and field technicians
- Provides them with an accurate and concise analysis of the problem faced by the caller and suggesting appropriate next steps to resolve the issue.
- This is used in conjunction with the other ASSIA products

ClearView®

Next Best Action for Customer Care

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Access and In-home Network Coverage

- ClearView® covers the access and the in-home network parts of the Broadband connection. It interfaces with
  - DSL Expresse®
  - GPON Expresse®
  - CloudCheck®

- Analysis provided by each product is then combined for the most accurate diagnostics and recommendations
  - Can identify the bottleneck or the source of problems in the Broadband connection, e.g., Wi-Fi or DSL/GPON
  - Broadband measurements (speed test results, PPP disconnections, DNS issues) from CloudCheck® can be combined with DSL/GPON link diagnostics to distinguish between core network and last-mile access issues (see the following examples)

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Before ClearView® - Call-Center Agents Respond to Problem

Customer Care Agent
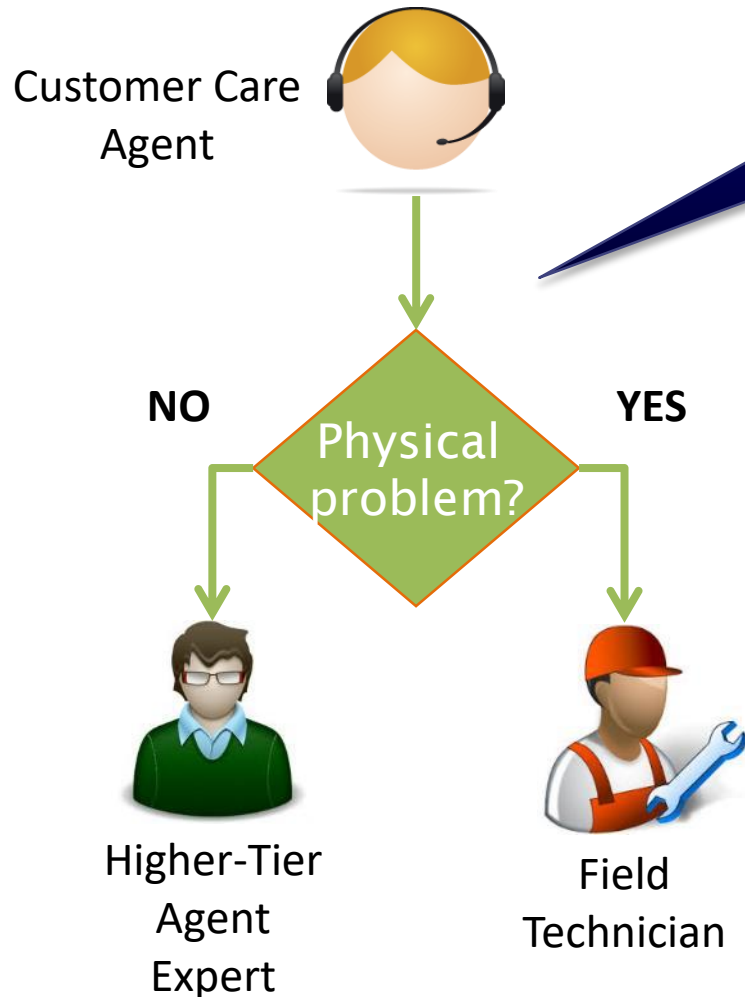
Simple, static set of rules
Is fault detected?
Is broadband link stable?
Is speed too low?

Physical problem?

NO   **YES**

Higher-Tier Agent Expert

Field Technician

How good is this?

Are simple rules sufficient for all broadband services?

Does the logic need to change over time?

Is the rule effectiveness checked periodically?

What if the customer is just missing a micro-filter?

What if the line is over-provisioned?

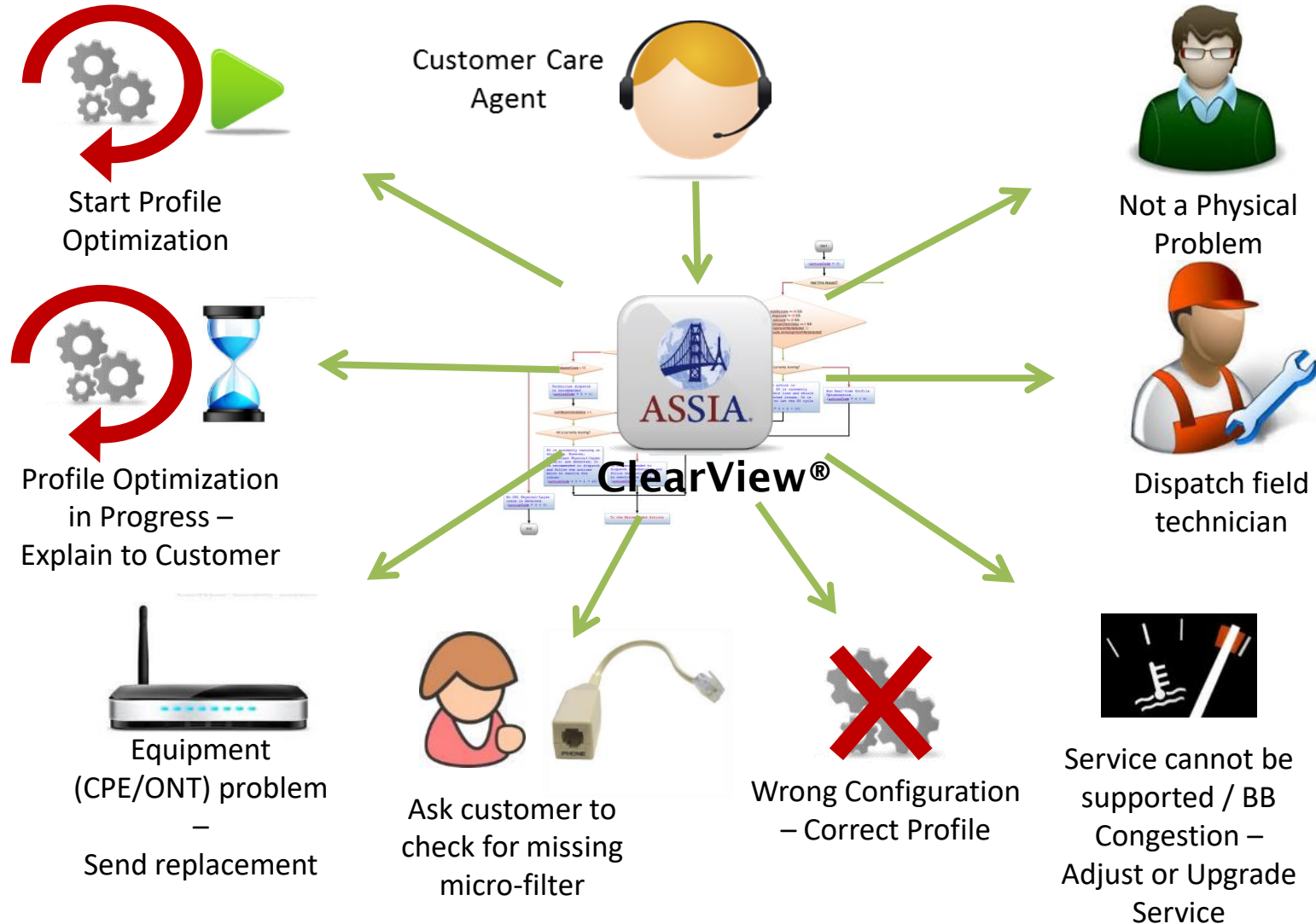What if profile optimization can fix the line without a dispatch?

What if the line has the wrong configuration?

What if the user requires a higher speed service

What if the CPE needs replacement?
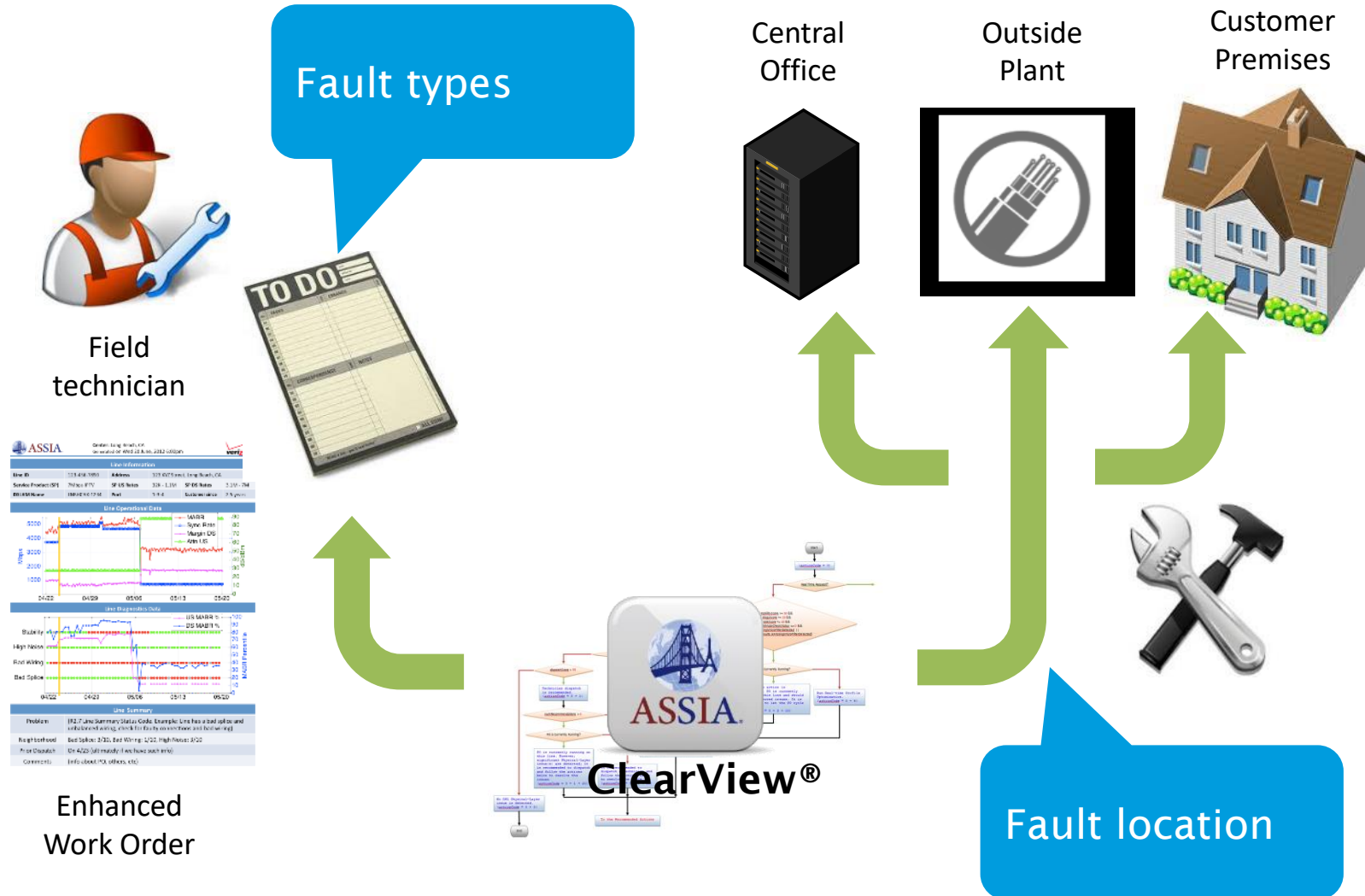
Are simple rules the way forward in the age of Big Data?

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Fault types
Likely location

Customer
Premises

Field
technician

Smart-phone
App/SMS

Enhanced
Work Order

ClearView®

Check all faults fixed

ASSIA

More Accurate Fault Localization for DSL Using SELT/MELT*

Field technician

Fault types

Enhanced Work Order

ClearView®

Central Office

Outside Plant

Customer Premises

Fault location

* Fault Localization for GPON using OTDR is on Roadmap 9

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Examples

Reliably Fast Broadband & Wi-Fi for the Home

Example 1

- **The customer is complaining about Internet interruptions and slow speed**

- **There is no problem detected with Wi-Fi network**
  - No connectivity issue with the stations
  - No coverage issue
  - Throughput measurements to all stations are normal
  - Broadband speed test results indicate very slow broadband speed

- **BIP8 (physical-layer) errors are observed on the GPON link; the offered service is degraded because some ODN faults**
  - There is a loose connector detected causing the degradation
  - The issue is approximately located on the first splitter, or between the first and the second splitter

- **A technician dispatch is recommended to fix the issue with the fiber**
  - Moreover, the cause of the problem is also provided for the field technicians

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John Smith ▼   Admin   Help

ClearView | DSL | PON | Wi-Fi

2024561111   🔍

Search Options

⛔ GPON line

CO ——————————————— GW

✅ Wi-Fi

GW ——————————————— STA

🔴 GPON

History Check   2015-08-01 13:55 ▼

Link provisioning info

Backhaul Link ID	CA-RedwoodCity-1
Chassis	GPON-1
OLT Port / ONT ID	1-1-4/1

⚙️ Real-Time Analysis

⛔ **Technician dispatch is recommended**

It is recommended to dispatch a technician and follow further instructions to resolve the issue
1.   Fix the loose/bad connector
Check the connections on the first splitter, or between the first and the second splitter

🟢 Wi-Fi   ➕

Menu 1 | Menu 2

Example 2

- The customer is complaining about slow Internet speed and disconnections

- There is no problem detected with GPON backhaul of G.fast/Vectored VDSL DSLAM
  - No fiber/equipment issue
  - Normal link quality (no Physical-layer errors, no alarms, no disconnections)
  - Throughput measurements on the OLT and ONT sides show no indications of saturation

- DSL link is suffering from high number of retrains and slow speed because a wiring fault at the customer premises
  - The DSL DS synch rate is very low verifying the customer's complain
  - High number of retrains on DSL link are confirmed
  - In house wiring issues are causing the degradation

- A technician dispatch is recommended to fix the issue with the copper
  - Moreover, the cause of the problem is also provided for the field technicians

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ClearView   DSL   PON

6502644000   🔍   Search Options

✓ GPON link   ⬣ DSL line

CO ———————— RT ———————— CPE

🟢 GPON   ➕

🔴 DSL

History Check   2015-08-01 13:55 ▼

Line ID	2024561111
DSLAM	DSLAM-1369
Port	1-1-4
Service Product	ASSIA®_MAX
Provisioning Status	Active

⬣ **Technician dispatch is recommended**

It is recommended to dispatch a technician and follow further instructions to resolve the issue
1. Fix in-house wiring issues

Real-Time Analysis   Real-Time Optimization

Thank You
End of Presentation

Essential to Reliably Fast Connectivity

www.assia-com.com