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powering global telecom

Attract and retain customers with enhanced broadband service coverage

*Leverage a unified serviceability framework to improve the service qualification*

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Broadband Service Qualification has Become Cumbersome and Time-consuming
Leads to Customer Disqualification and Poor Serviceability

Most DSPs are challenged with ineffective service qualification process which impacts Customer Experience (CX)
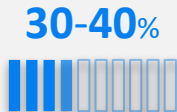
30-40%
New customers
experience unserviceability

20-30%
Existing subscribers
face poor customer experience due to reduced service offering (e.g.) under-qualified bandwidth

5-10%
Unrealized **service opportunities**

Contributing factors

Non-standardized address and service repositories

Lack of support for multi-technologies (e.g.) Copper, Fiber, IPTV, Cable, Fixed Wireless

Lack of agility to accommodate real-time customer needs static qualification & feasibility check

Inaccurate measurement of loop length

Ineffective service qualification directly impacts DSPs day-to-day operations
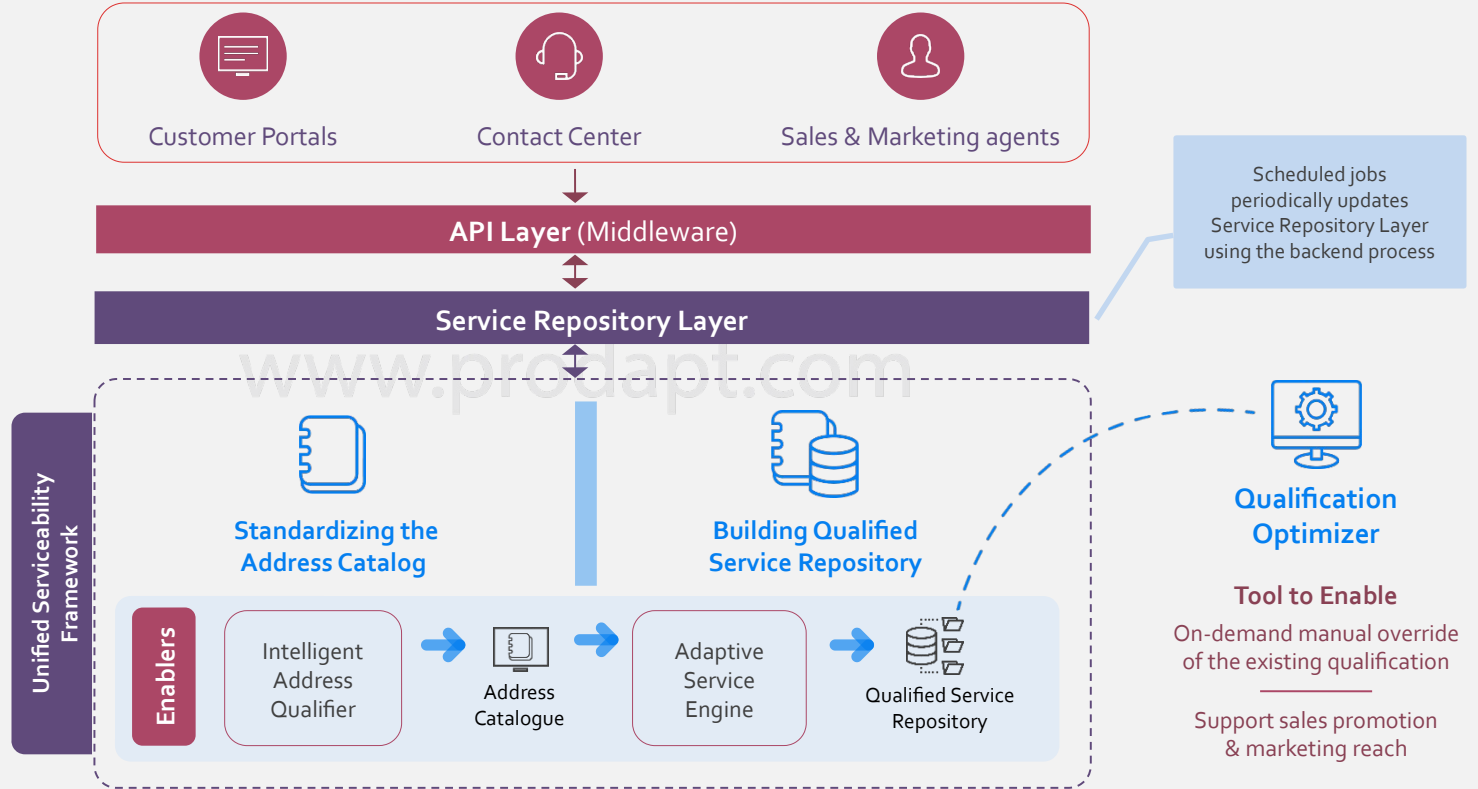
Reduced Customer Acquisition

Customer Churn

Opportunity Loss

DSPs need to focus on *improving service qualification* to provide the **better services for retaining and enlarging the customer base**

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Recommended Approach to Achieve Improved Serviceability Using Unified Serviceability Framework

Improved customer engagements and real-time responses for service qualification inquiries are achieved by using this framework

Customer Portals

Contact Center

Sales & Marketing agents

API Layer (Middleware)

Service Repository Layer

Scheduled jobs periodically updates Service Repository Layer using the backend process

Unified Serviceability Framework

Standardizing the Address Catalog

Building Qualified Service Repository

Enablers

Intelligent Address Qualifier

Address Catalogue

Adaptive Service Engine

Qualified Service Repository

Qualification Optimizer

Tool to Enable

On-demand manual override of the existing qualification

Support sales promotion & marketing reach

This insight elaborates on the *unified serviceability framework* and the key enablers for improving service qualification process

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Standardizing the Address Catalog using Intelligent Address Qualifier
Data Integration and Extraction

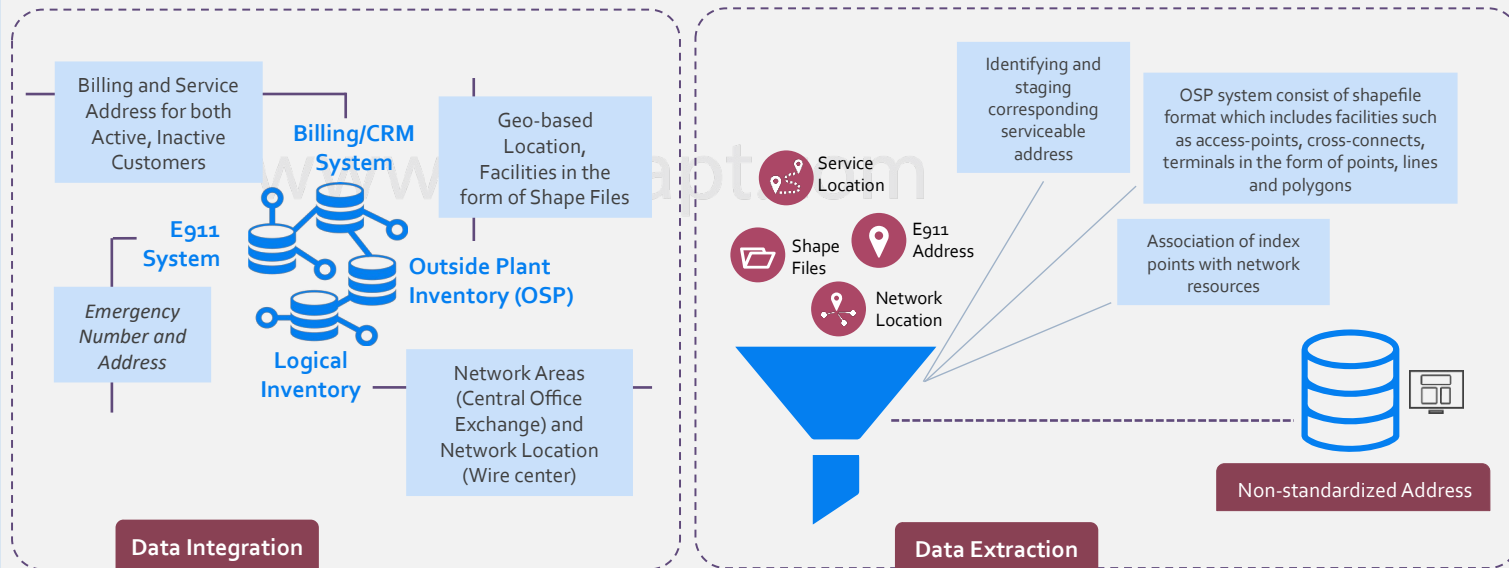**Process Workflow**

Data Integration & Extraction	→	Adding Data Intelligence (Geographic & Geometric)	→	Local Loop Evaluation	→	Standardized Address Catalogue

Static Survey data in the traditional approach is **replaced by Geo-based Outside Plant Inventory** in the new approach (*consisting of the line equipment, cross-connect, and terminals*)

Data Integration

Billing and Service Address for both Active, Inactive Customers

Billing/CRM System

Geo-based Location, Facilities in the form of Shape Files

E911 System

Emergency Number and Address

Outside Plant Inventory (OSP)

Logical Inventory

Network Areas (Central Office Exchange) and Network Location (Wire center)

Data Extraction

Service Location

Shape Files

E911 Address

Network Location

Identifying and staging corresponding serviceable address

OSP system consist of shapefile format which includes facilities such as access-points, cross-connects, terminals in the form of points, lines and polygons

Association of index points with network resources

Non-standardized Address

Extracted addresses are in a non-standardized format and it needs to be standardized before adding further intelligence

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Standardizing the Address Catalog using Intelligent Address Qualifier
Adding Data Intelligence (Geographic & Geometric)

Process Workflow

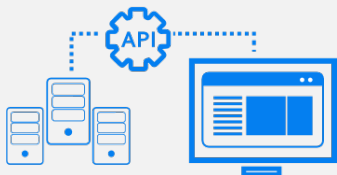| Data Integration & Extraction	→	Adding Data Intelligence (Geographic & Geometric)	→	Local Loop Evaluation	→	Standardized Address Catalogue

Address Normalization Using API Integration

Validate different address formats from multiple sources and map into one standard universal format (United States Postal Service) using API integration

Address Enrichment Using Geo-data

Discover the network sources for specific customer location

Pin the specified Geographic & Geometric location with eligible resources

39.5989332°, 89.698227°

39.3789332°, 89.897227°

67.5989332°, 45.695427°
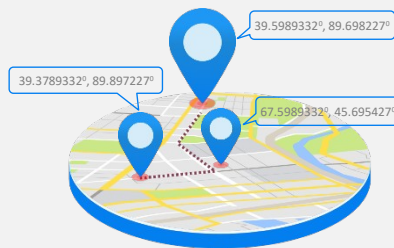
Correlating Location and Customer Address

Create Linkage between the network location and serviceable customer address

Build relationships such as one-to-one, many-to-one addresses.
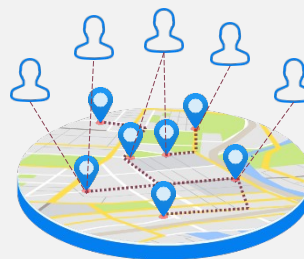
Adding Census Block to Address

Mapping Census Block is the final stage of the four-step process

Statistical Data comprises of plot numbers, blocks, street range, and boundaries.
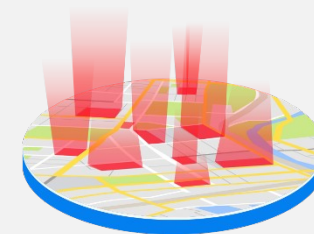
Adding data intelligence (Geographic, Geometric & linking network location) help in improving serviceability of customer address by **33%**

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Standardizing the Address Catalog using Intelligent Address Qualifier
Accurate Local Loop Evaluation

Process Workflow

Data Integration & Extraction → Adding Data Intelligence (Geographic & Geometric) → **Local Loop Evaluation** → Standardized Address Catalogue

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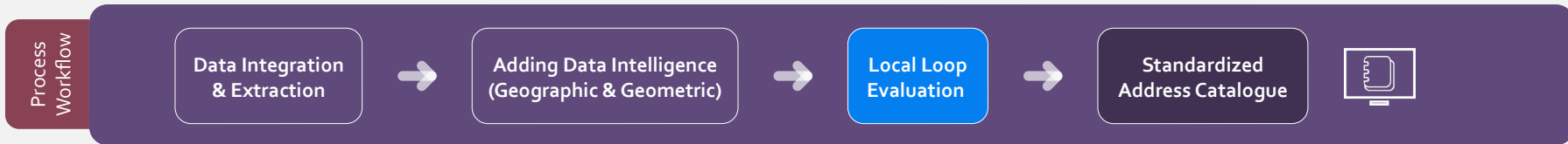
Traditional Approach | Calculating the local loop using the static outside plant inventory data gives inaccurate results, causing limited service offering.

Recommendations

Using the Intelligent Address Qualifier to compute the local loop between customer location & network terminal provides **accurate value.**

Local Loop Evaluation using Intelligent Address Qualifier

- Identify the nearest network terminal to provide service
- Select the shortest path to provide the service to the customer
- Find the available capacity (cable pair, MDF and XConn) from the terminal
- Calculate the accurate local loop

*MDF - Main Distribution Frame, XConn – Cross connect
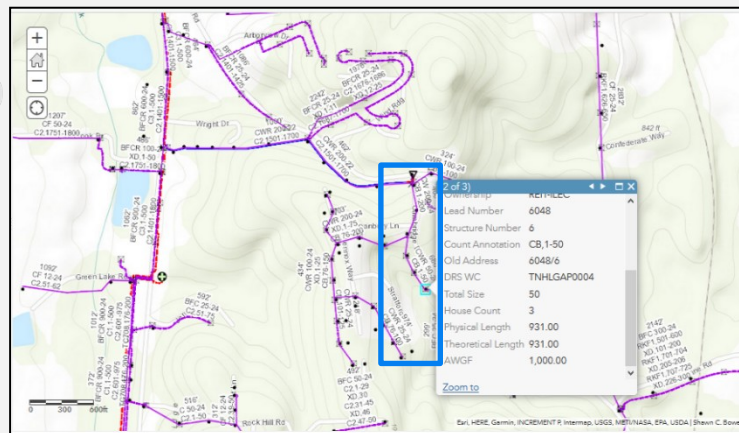
Fig: Sample image of accurate local loop calculation using Intelligent Address Qualifier

Copper CSA Map
- Aerial
- Underground
- Network Terminal

CO Buildings
- CO Building

Fiber By Placement
- Aerial
- Buried

After evaluating the loop length, the customer location gets qualified for providing the service. The standardized address value get stored as a catalogue and referred in the service qualification

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Building Qualified Service Repository using Adaptive Service Engine

Service availability inquiry from online portal

Enter your address to review products and pricing available in your area

77 Mcqueen St

Somerset | KY | 42503 | Check Availability

Chose the services you want

Internet | Voice | TV & entrainment

Get Started

Select Your Speed
The following speeds are available at your location

Promotional Offer
100 Mbps
Broadband Internet 100
$ 67.00/month

Promotional Price
After 12 months $70.00

Promotional Offer
25 Mbps
Broadband Internet 25
$ 47.00/month

Promotional Price
After 12 months $50.00

API Layer (Middleware)

Service Repository Layer

Standardized Address Catalogue

Adaptive Service Engine

Orchestrator

Qualification Controller

Qualified Service Repository

Workflow of Adaptive Service Engine is shown in the next slide

Physical Inventory - Elements for Network Qualification
- Collecting the maximum attainable bit rate
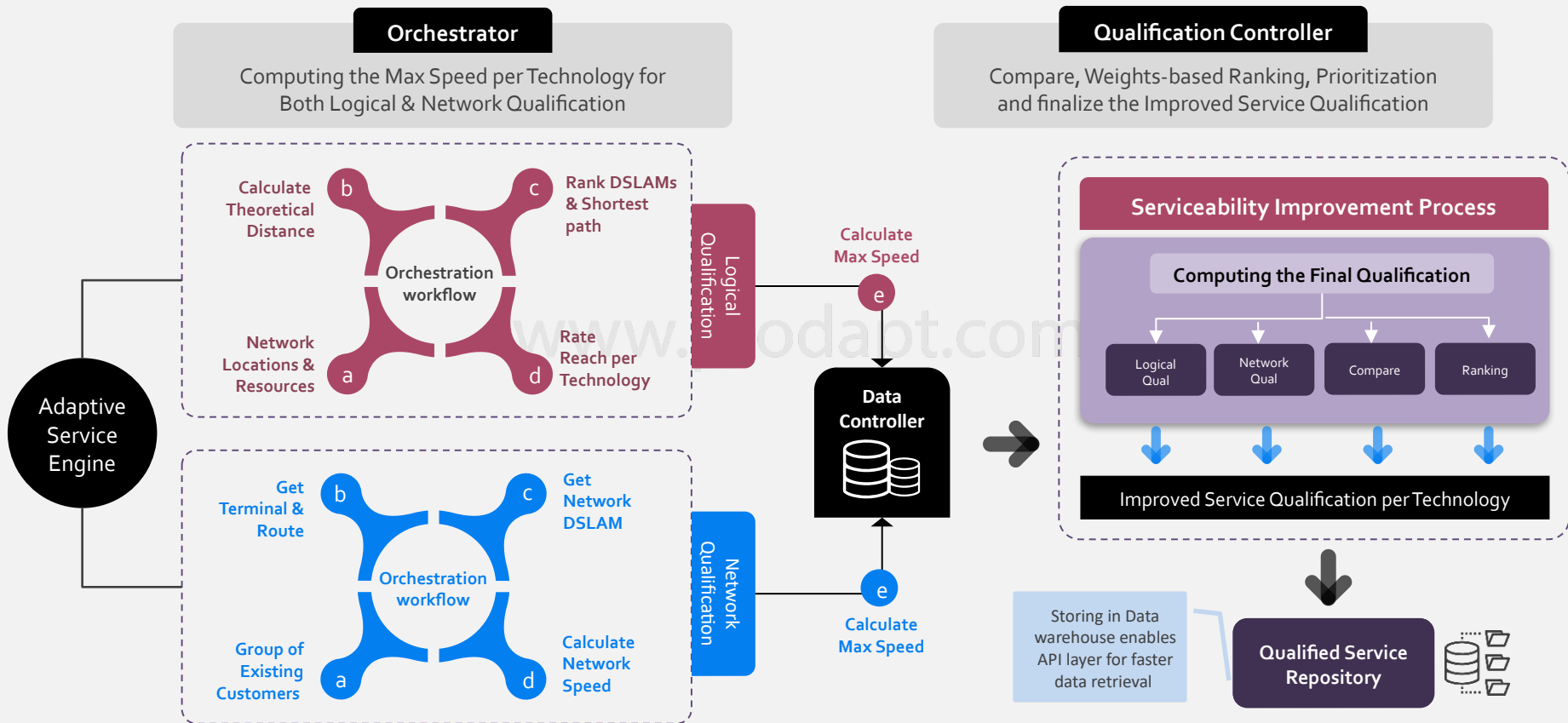- Performance metrics from various nodes

Logical Inventory - Elements for Logical Qualification
- Logical instances, Backhaul Bandwidth
- Product Catalogue and Rate Reach

Various limitations of static qualification using inventory data is greatly overcome by leveraging adaptive service engine. It enables DSPs to improve customer experience and customer retention

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Sample screenshots –
Traditional vs. Improved Service Qualification Using Adaptive Service Engine

Traditional service qualification

Street#	Pre Dir	Street Name	St Type	City/Community	State	ZIP	
3682	(Clear)	NIAGARA DR		LEXINGTON	Kentucky	40517	Search

Internet Speed Qualifications

DSL Qual	Qual up to 25Mb Range	Speed down	23.68 Mb
Cable Qual		Speed up	2.05 Mb

Improved Service Qualification
Copper, Fiber, Fixed Wireless and IPTV with respective Max Speeds

Street Address	Apt/Unit	City	State	Zip		
3682 NIAGARA DR		LEXINGTON	KY	40517	Search	Clear

Address Id : 8000000000000024566763   Copy

CoJack : N

New Construction : N

Geo Precision :

Serviceability UI

		Max Speed Up	Max Speed Down	VOIP	RDP
Max Qual	QUAL UP TO 1 GIG RANGE				
DSL Qual	QUAL UP TO 50 MB RANGE	1.966 MB	47.317 MB	N	N
Fiber Qual	QUAL UP TO 1 GIG RANGE	1000 MB	1000 MB	Y	N
Fixed Wireless Qual	QUAL UP TO 25 MB	2.048 MB	28.8 MB	N	N
Cable HSI Qual					
IPTV Qual	QUAL UP TO 15 MB IPTV	1.5 MB	15.2 MB	N	N
Future Qual					

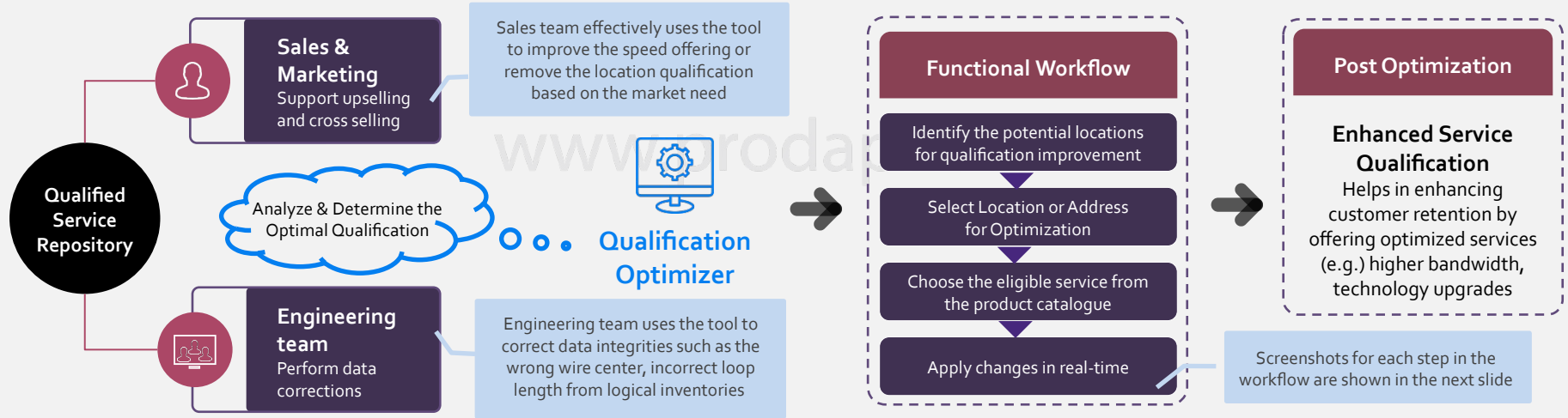**Prodapt**

Qualification Optimizer Tool
On-demand manual service qualification override for sales promotions and data corrections

Build a Qualification optimizer module to be integrated with Unified Serviceability Framework to enable :

Sales & marketing team to enhance service qualifications for target segment, for promotions, mass upgrades and achieve higher customer retention.

Engineering team to resolve configuration issues and perform data corrections.

Qualified Service Repository

Sales & Marketing
Support upselling and cross selling

Sales team effectively uses the tool to improve the speed offering or remove the location qualification based on the market need

Analyze & Determine the Optimal Qualification

Qualification Optimizer

Engineering team
Perform data corrections

Engineering team uses the tool to correct data integrities such as the wrong wire center, incorrect loop length from logical inventories

Functional Workflow

Identify the potential locations for qualification improvement

Select Location or Address for Optimization

Choose the eligible service from the product catalogue

Apply changes in real-time

Post Optimization

Enhanced Service Qualification
Helps in enhancing customer retention by offering optimized services (e.g.) higher bandwidth, technology upgrades

Screenshots for each step in the workflow are shown in the next slide

Benefits of Qualification Optimizer

Support on-demand product and service retiring

Enable sales promotions and campaign reach

Retain customers through mass upgrades

Eliminates service requests for data correction

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Sample Screenshots from Qualification Optimizer
Generic Workflow for Enhanced Service Qualification

1 Pre-Optimizer

Identify the customer address for qualification improvement

Street Name	St Type	City/Community	State	ZIP	Search	Clear
801 W WALL ST		CENTERVILLE				

DSL Qual — Qual Up to 50Mb

Max. Speed Up — 11.928 Mb
Max. Speed Down — 48.007 Mb
New / Existing — E

3 Post-Optimizer

Results in enhanced service qualification for the selected customer address

Street Name	St Type	City/Community	State	ZIP	Search	Clear
801 W WALL ST		CENTERVILLE				

DSL Qual — Qual Up to 100Mb Range

Max. Speed Up — 128 Mb
Max. Speed Down — 128 Mb
New / Existing — E

2 Qualification Optimizer

Retrieve the address from specific market area / exchange / network location for qualification improvement

Search by DWC/CLLI — CNVLIAXO — Search
Only return modified records

Address ID	Address L1	Address L2	City	State	Postal	Wire center	Terminal
...00010117430 M	2010 S 15TH ST		CENTERVILLE	IA	52544	CNVLIAXO	000006
...00103239216 B CAF	22408 490TH ST		CENTERVILLE	IA	52544	CNVLIAXO	000001
...00015299744 M	2024 GOLFVIEW CIR		CENTERVILLE	IA	52544	CNVLIAXO	000004
...00019713388 M	1112 N HAYNES AVE		CENTERVILLE	IA	52544	CNVLIAXO	000004
...00019719735 M	519 W MADISON ST		CENTERVILLE	IA	52544	CNVLIAXO	000008
...00019500354 M	801 W WALL ST		CENTERVILLE	IA	52544	CNVLIAXO	000008
...00020686998 M	2056 GOLFVIEW CIR		CENTERVILLE	IA	52544	CNVLIAXO	000004
...00020688091 M			CENTERVILLE	IA	52544	CNVLIAXO	000012
...00011460875 B CAF			CENTERVILLE	IA	52544	CNVLIAXO	00002A

Select the specific address from the identified location

Configure a different wire center to provide higher bandwidth

Location Details
000011
CNVLIA
CNVLIACS

Product Details
New — COPPER
QUAL UP TO 100 MB RANG

QUAL UP TO 1 MB VACATION BB
QUAL UP TO 1.5 MB-BEST EFFORT
QUAL UP TO 1.5 MB
QUAL UP TO 1.5 MB-EXTENDED REACH
QUAL UP TO 3 MB
QUAL UP TO 4 MB
QUAL UP TO 6 MB
QUAL UP TO 10 MB
QUAL UP TO 12 MB
QUAL UP TO 15 MB
QUAL UP TO 20 MB
QUAL UP TO 25 MB
QUAL UP TO 25 MB RANGE
QUAL UP TO 50 MB
QUAL UP TO 50 MB RANGE
QUAL UP TO 75 MB
QUAL UP TO 100 MB
QUAL UP TO 100 MB RANGE
QUAL UP TO 200 MB RANGE
QUAL UP TO 300 MB RANGE

Apply Changes — Clear

Update the required product details from the catalog

Update an effective date for the new qualification

Override Details
OTHER
2020-05-19 — End Date

Qualification Optimizer enables upselling and cross-selling in real-time with improved qualification and enhanced customer experience

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Benefits Achieved by a Leading DSP In North America After Implementing Unified Serviceability Framework

A leading DSP in North America faced major challenges in the service qualification process, which lead to poor CX (Customer Experience) and missed opportunities.

Implementing the recommended approach as discussed in this insight, resulted in the following benefits.

41% Improved
Qualification Coverage
with Standardized Address Catalogue

27.5% **Delightful Customer Experience**
due to higher bandwidth

5.5% **Enhanced Qualification**
using Overriding Mechanism

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