Lessons learned from electricity distribution companies in Latin America in AI implementation

June 17, 2026

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ASOCIACIÓN
DE DISTRIBUIDORAS
DE ENERGÍA ELÉCTRICA
LATINOAMERICANAS

AGENDA

ADELAT

Who we are

The new role of distributors in the Energy Transition

Artificial Intelligence applied to electricity distribution

Case Studies

Who we are

33	11	+72M	+349	164M
Members	Countries	conexions	TWh Total	people

adeera · Edea · DELAPAZ · edp São Paulo · enel São Paulo · CHILQUINTA · enel Colombia · ice · CENTROSUR · DELSUR Grupo epm · ENERGUATE · CLYFSA · ElectroDunas

edenor · Edesa · elfec · edp Espírito Santo · enel Rio · enel Chile · ESSA Grupo epm · eegsa Grupo epm · CVC energía

edesur · EDEMSA Energía Mendoza · ENDE Oruro · ABRADEMP · enel Ceará · FENACOPEL · edeq Grupo epm

EPE Energía de Santa Fe · SECHEEP · ENDE Delbeni

EPEN

Our Strategic allies

STRATEGIC ALLY

PREMIUM ALLY

DIGITAL ALLY

ACADEMIC ALLY

Strategic Pillars

Knowledge Generation

- Regulatory Paper
- Investment Paper
- DSO Briefs

Build Alliances

- Multilaterals
- Associations
- Development Banks
- Think Tanks
- Academy

Insert into the Public Agenda

Interaction with authorities

Industry forums

Opinion columns

Media publications and interviews

Corporate Governance

Generación de Conocimiento Compartido

Policy Papers y DSO Briefs

Regulatory Challenges and Improvements for Electric Distribution in the Latin American Energy Transition

The renewal of power distribution concessions – Analysis of the Brazilian case from the perspective of Latin American countries

The quality of power distribution in the Energy Transition: challenges and best regulatory practices

The **distribution grid** as an enabler of **electric mobility** in Latin America

The resilience of power distribution systems: recommendations for a new regulatory paradigm

No investment, no transition: The future of power distribution in Latin America

Digitalization and Automation of power distribution: drivers and international good practices

Digital Companies of the Future: New Frontiers in Shared Services for Electric Power and Telecommunications

Liberalization of retail markets in Latin America: new scenarios for electricity distribution

Distributed Generation: Towards a Sustainable Regulatory Model for Electricity Distribution

Accelerating Smart Metering: Regulatory Drivers for Deployment in Latin America

Reclaiming Power: Innovation and Strategies for Non-Technical Loss Management in Latin America and the Caribbean

Access all our publications:

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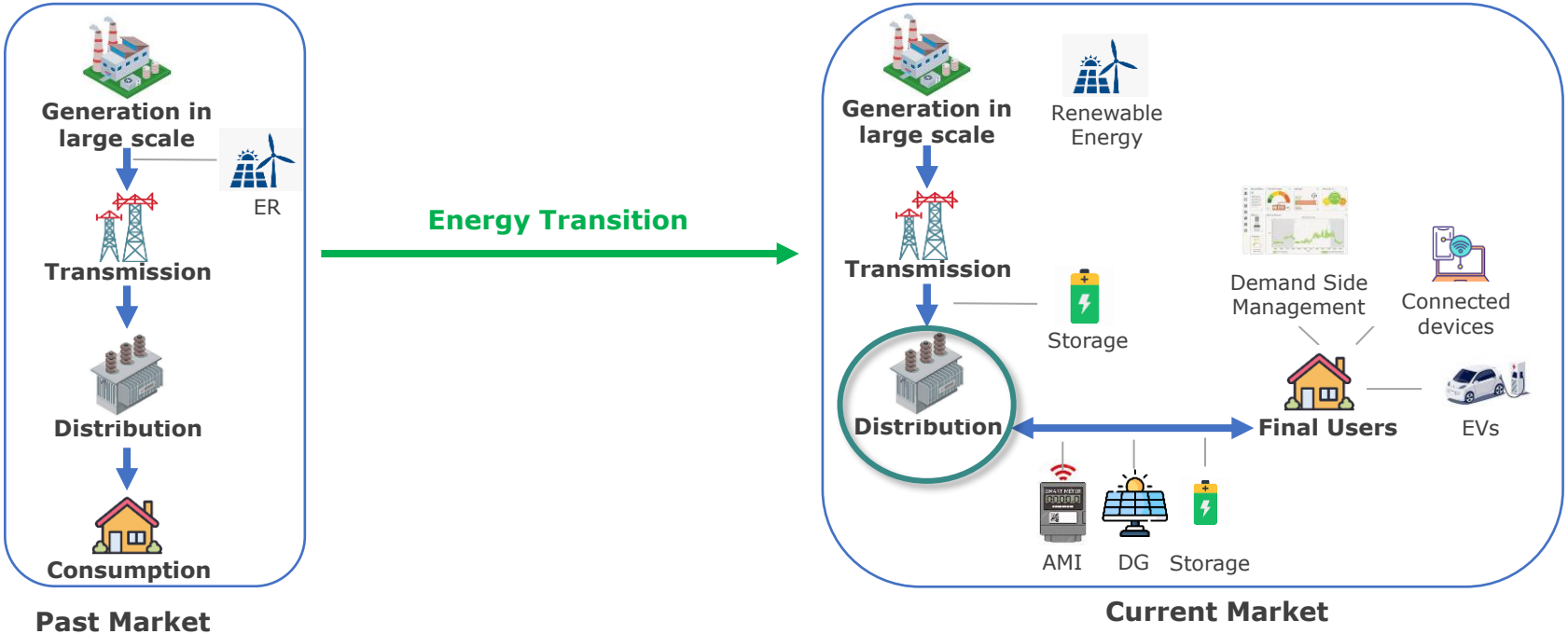
The new role of electrical distributors



What Should the **UTILITY** of the Future Look Like to Enable the **ENERGY TRANSITION**?

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Macro-challenges of distribution

Regulatory Challenges and Improvements for Electric Distribution in the Latin American Energy Transition

1. Increase quality and resilience

- Introduce the concept of **resilience**
- **Digitize and automate** the grid
- **Expand** the distribution network mesh
- Extend **smart metering**
- Ensure **coordination** of DERs

2. Sustainably transform the network

- Facilitate **new technologies, actors and business models** entrance
- Increase network **flexibility**
- Encourage **regulatory sandboxes**
- Strengthen **cybersecurity**

3. Foster economic efficiency

- Apply **hourly tariffs** and encourage demand response mechanisms
- Efficiently incorporate **Advanced Metering Infrastructure** (AMI)

D&A technologies for electrical distribution

Networks & Equipment

- Data Lakes
- Predictive analytics and big data platforms
- Artificial Intelligence (AI) and Machine Learning (ML)
- Advanced communication networks
- Cloud Computing
- Cybersecurity Solutions

IT/OT Systems

- Supervisory Control and Data Acquisition (SCADA)
- Advanced Distribution Management Systems (ADMS)
- Geographic Information Systems (GIS)
- Measurement Data Management Systems (MDMS)
- Distributed Energy Resources Management Systems (DERMS)
- Outage Management Systems (OMS)
- Distribution system modeling, analysis and planning platforms
- Energy Management and Optimization Systems (EMOS)
- Commercial management and customer relationship platforms

Communication and data services

- Advanced Metering Infrastructure (AMI)
- Substation Automation
- Smart Sensors & Fuses
- Drones equipped with LIDAR and other technologies
- Battery storage systems

AMI: Enabling Platform for the New Distribution Model

Observability, flexibility, and data management at the edge (edge computing)

Evolution

- From basic telemetry to end-to-end digital infrastructure with bidirectional communications and control.

Functions

- Granular data to identify losses, anticipate congestion, and support FLISR (Fault location, isolation, and service restoration).

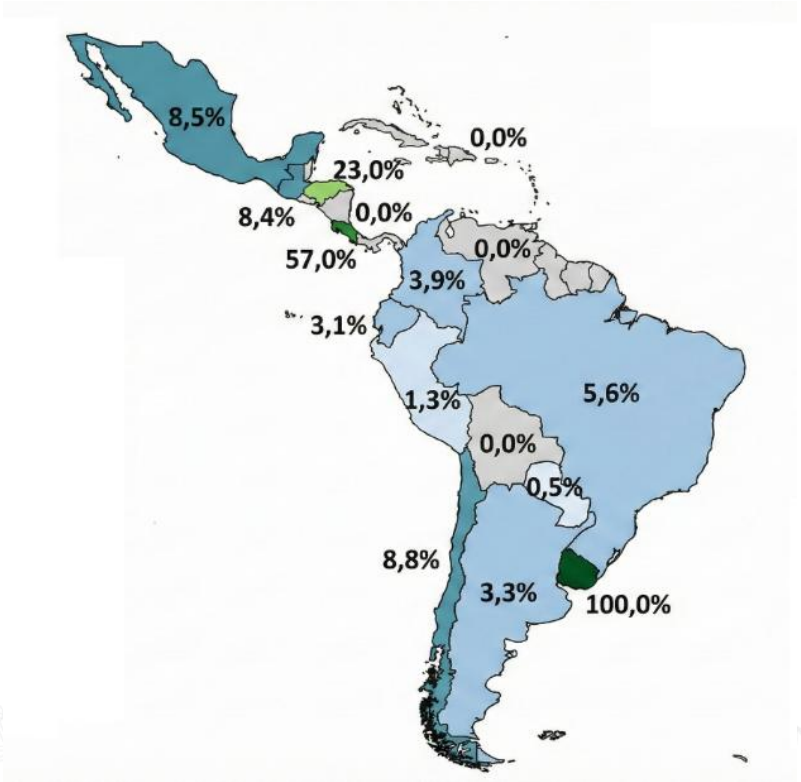
Integration

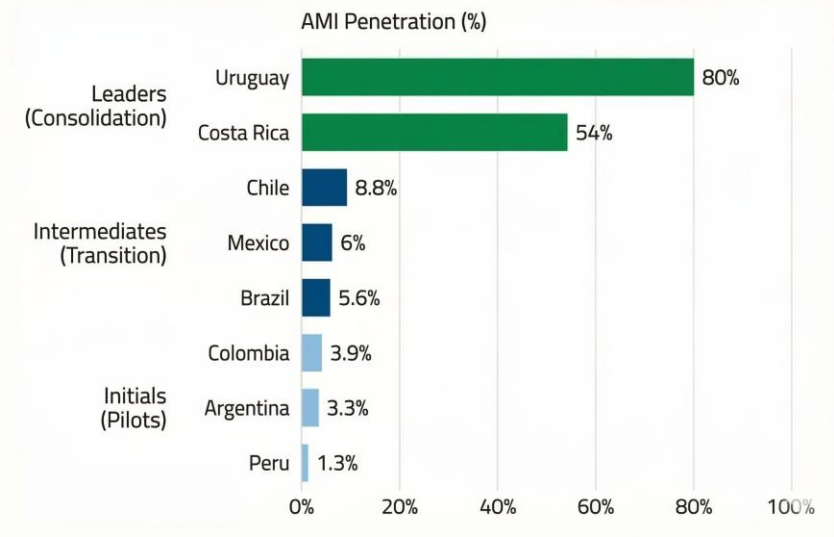
- Bidirectional flow management to integrate PV generation, storage and new profiles.

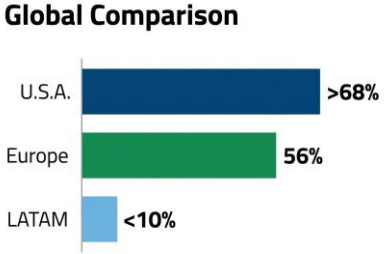
User

- Enable hourly tariffs, demand response, and smart EV charging.

With few exceptions, LATAM is in the early stage of AMI deployment







Implementation gap

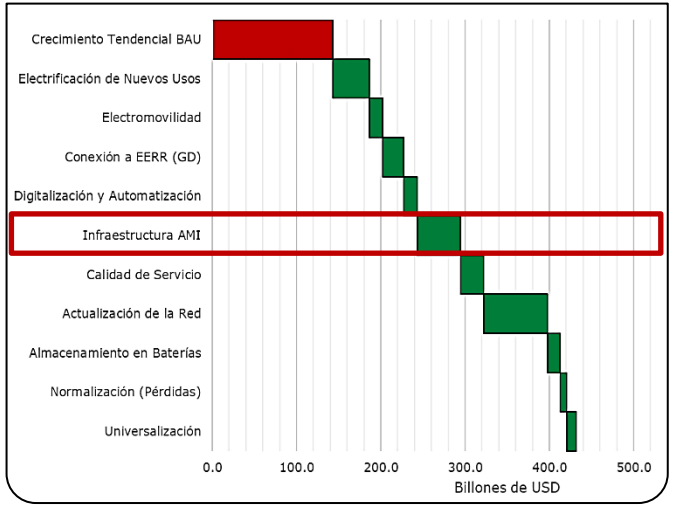
While global leaders renew towards AMI 2.0, the majority of LATAM remains under 10% coverage.

Progress depends on state mandates and isolated initiatives.

Investment required in AMI for the energy transition

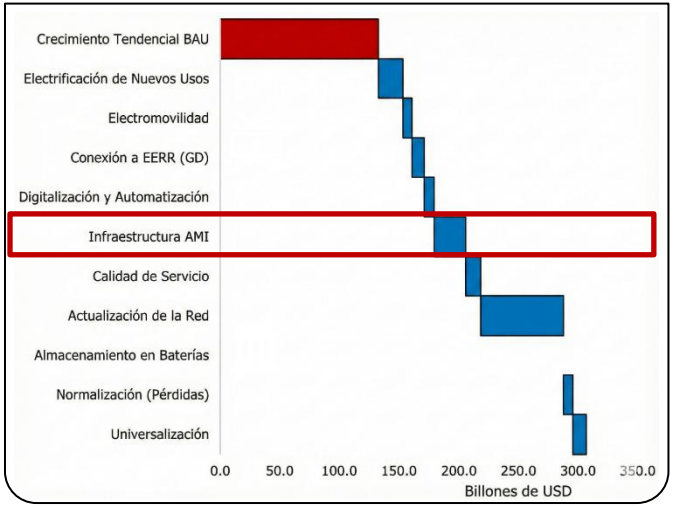
Effective ET 2040

100% AMI
USD 51.4 bn



Parcial ET 2040

50% AMI
USD 25.7 bn



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Artificial intelligence is the new electricity

"About 100 years ago, electricity transformed every major industry. Artificial intelligence has advanced so much that it has the power to make all sectors grow in the coming years."

Andrew Ng, Stanford University Computer Scientist and American Entrepreneur

Electricity	Artificial Intelligence
Industrial transversality	Sectoral transversality
Platform for new technologies	Exponential Innovation Platform
Automation of physical effort	Cognitive Task Automation
Scalable distribution network	Accelerated growth with scalable infrastructure

Applications of Artificial Intelligence in Electrical Distribution

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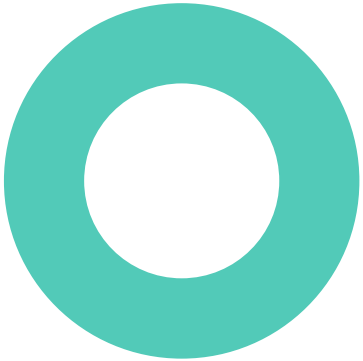
- Loss reduction
- REDs integration and flexibility
- Failure Detection and Prediction



- Security and cybersecurity
- Customer Support
- Projection models

Impacts of Artificial Intelligence on electricity distribution

Human Resources

New job profile and need for training

Data & Systems

Data protection and cybersecurity policies
Data Communication System Integration

Market

New business models
Increased demand (datacentres)
Alliances with other sectors (telecommunications, fintechs)

Regulation and policies

Regulatory adaptation and pilot projects (sandboxes)

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Caso 1 - Copilot AI Agent

Generative Artificial Intelligence agent that assists Call Center and Commercial Branch Service Agents in real time.

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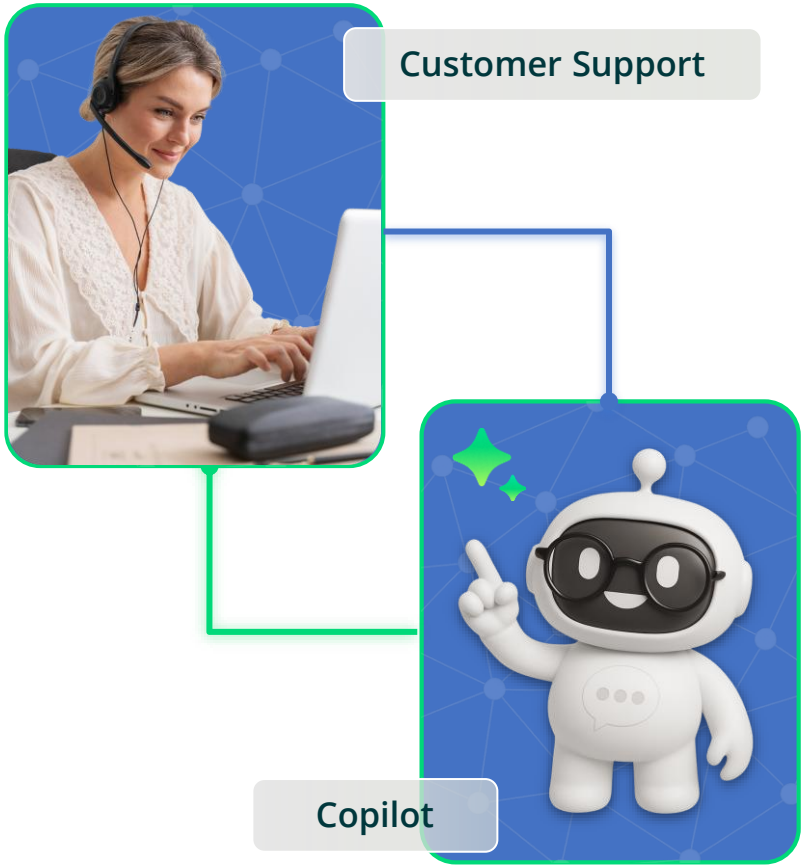


The challenges in customer service

- Customer service agents **waste a lot of time searching for information.**
- **Manual** and non-standardised processes, with overload on personnel.
- Customers demand **speed, accuracy and personalisation.**

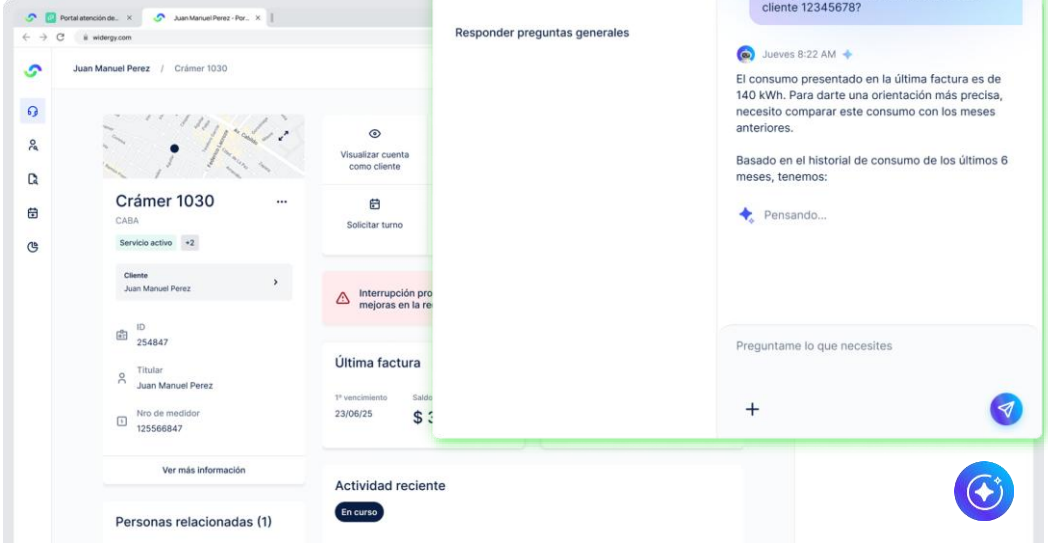
Copilot AI Agent

Real time support
Suggest live answers, respecting processes.

Smart search:
Instant access to the Utility's knowledge base and customer history..

Flow automation:
Manage shifts, claims, requests, and repetitive tasks.

Backoffice



Copilot

Case Study: Resolution of a claim for increase in the bill

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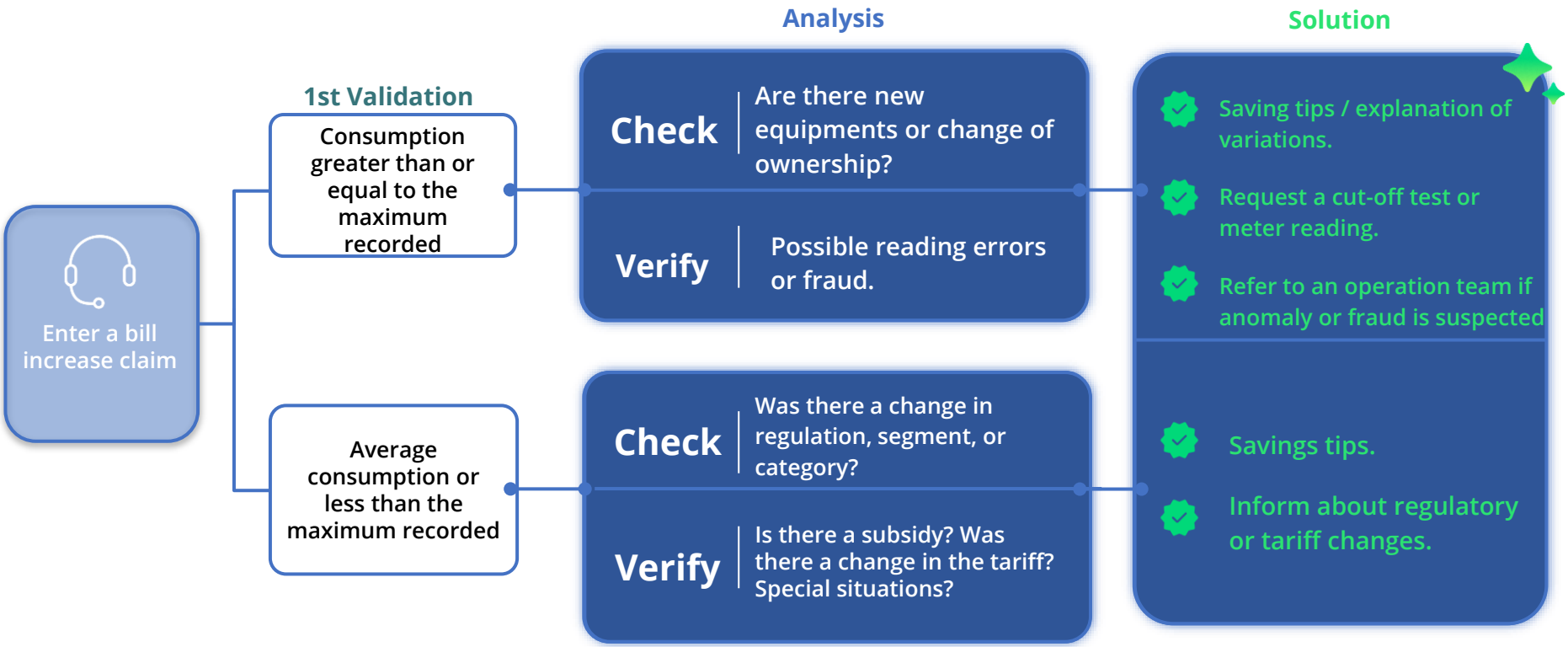

Benefits for the utility
Customer experience evolution

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Increased agent productivity
Less time per management.

Greater customer satisfaction
Clearer, faster and more personalized service.

Optimization of operating costs
Capacity is increased without expanding the equipment.

Actionable insights
Access to automatic analytics and reports

More efficient processes
Ensures that each claim follows the correct flow, without detours.

Case 2 - AI for Procurement Transformation in the Electricity Sector

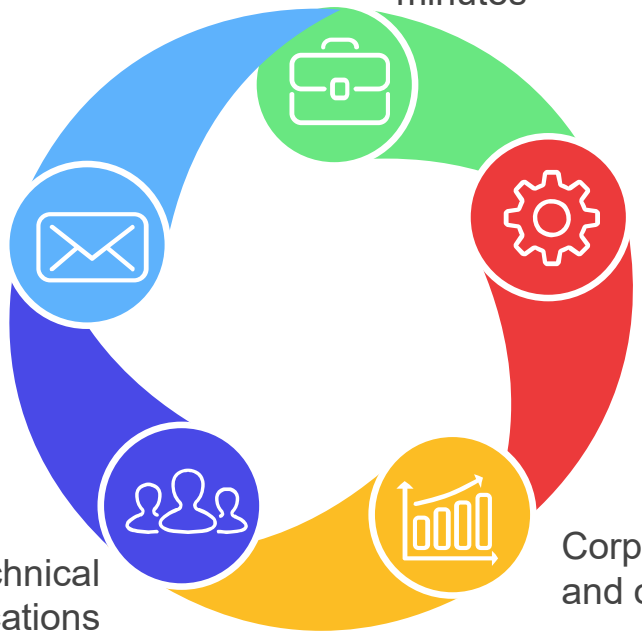
Initial Scenario

Procurement and bidding processes in the electricity sector represent a significant operational burden.

They are marked by a strong dependence on manual procedures, the management of physical files, the inherent complexity of the different types of construction and, consequently, the waiting of a long time for the activation of critical projects in the distribution networks.

- Operational paralysis
- Incremental costs
- Lack of competitiveness

Case 2 - I AI for Procurement Transformation in the Electricity Sector



Expected result: reduction of shopping times by 80%

Case 3 – AI for automatic customer location

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Layered AI architecture

- Associating each customer with their location and the network assets that power them is an essential task for every distributor.
- The low quality of registered addresses—disparate formats, abbreviations, informal references, and incomplete data—makes automatic georeferencing difficult.

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1 Normalization Rules

Simple cases: the formatting is cleaned up and irrelevant information is removed.

Av. San Martín 1234 Piso 3 Dpto B · San Martín 1234 3B . Av San Martin N°1234

2 Specialized Models

Usual patterns with no standard formal address.

Sarmiento corner Belgrano · Route 8 Km 72 · Bo. San José Mz 15 Casa 4

3 AI with contextual understanding

Informal references without direction: they require advanced generative AI.

In front of the Rural School N° 12 · Last house before the bridge . Next to the pumping station

Localización automática: **40%** → **60%** → **90%**


"Trabajamos juntos para promover la colaboración
y el liderazgo en la transición energética en América Latina"
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