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powering
global telecom

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**Artificial Intelligence in Action
Embedding RPA and AI in Operations**

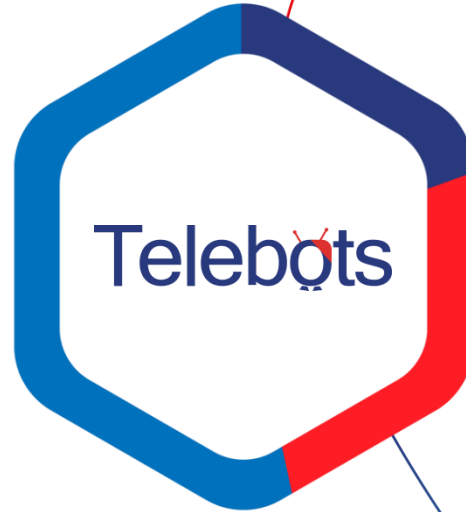**Harsha Kumar**
President
Prodapt

Prodapt - World's leading robotics implementation partner for CSPs/DSPs

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CenturyLink

AT&T

Cable & Wireless
Communications

COGECO
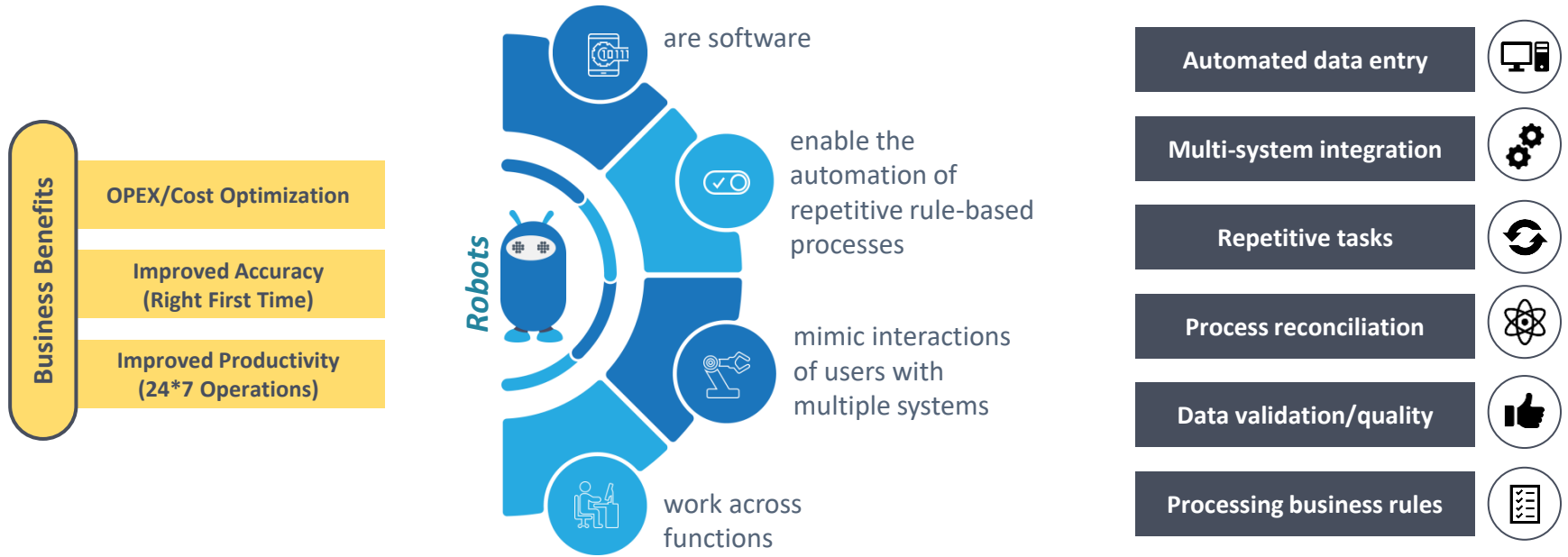
TELUS

verizon

windstream

Telebots

blue**prism**

AUTOMATION
ANYWHERE

Ui Path

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2

What is Robotic Process Automation?

Automation technology that significantly reduces manual effort associated with swivel-chairing across systems

Business Benefits

- OPEX/Cost Optimization
- Improved Accuracy (Right First Time)
- Improved Productivity (24*7 Operations)

Robots

- are software
- enable the automation of repetitive rule-based processes
- mimic interactions of users with multiple systems
- work across functions

- Automated data entry
- Multi-system integration
- Repetitive tasks
- Process reconciliation
- Data validation/quality
- Processing business rules

Service Fulfillment   Service Assurance   Network Management   Billing

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Three main levels of maturity…

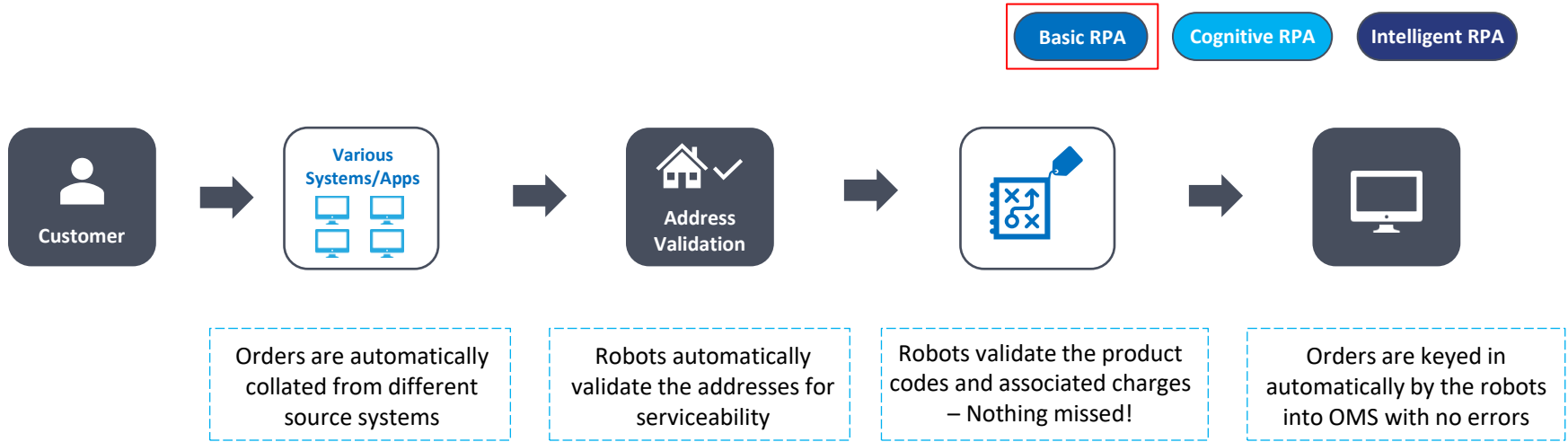| **Basic Robotic Process Automation (RPA)**	**Cognitive RPA**	**Intelligent RPA**
Structured Data and Rules	Semi-structured Data + NLP	AI/ML Decision Making
Automation of repetitive activities **without changing the map of existing systems**	(OCR+ML, NLP, Virtual Assistants, Chatbots) + RPA	Machine learning & deep learning-based self-learning bots
Routine, repetitive	Tasks	Complex, cognitive
Follow instructions	Actions	Draw conclusions
Broad, any suitable process	Applications	Narrow, insightful output
Maturing	Market	Emerging
Lower	Cost	Higher
Weeks	Timeframe	Months

Maturity Model in Automation

LOW → HIGH

Basic RPA (Structured Data and Rules)

Based on Prodapt's customer engagements, typical savings in the service fulfillment area (such as order handling) have been in the **~60% range**

Basic RPA **Cognitive RPA** **Intelligent RPA**

Customer → **Various Systems/Apps** → **Address Validation** → →

Orders are automatically collated from different source systems

Robots automatically validate the addresses for serviceability

Robots validate the product codes and associated charges – Nothing missed!

Orders are keyed in automatically by the robots into OMS with no errors

100% orders processed through RPA - Faster time to market and first time rights

No backlogs whatsoever - No more wait time

Zero errors induced by robots - Provisioned as ordered!

Customer Satisfaction

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Cognitive RPA is applicable across the customer engagement lifecycle

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Basic RPA   Cognitive RPA   Intelligent RPA

Ex-1: Upgrades/downgrades of services

Ex-2: Customer complaints registration and fault diagnosis

Ex-3: Provisioning status verification and port status/availability

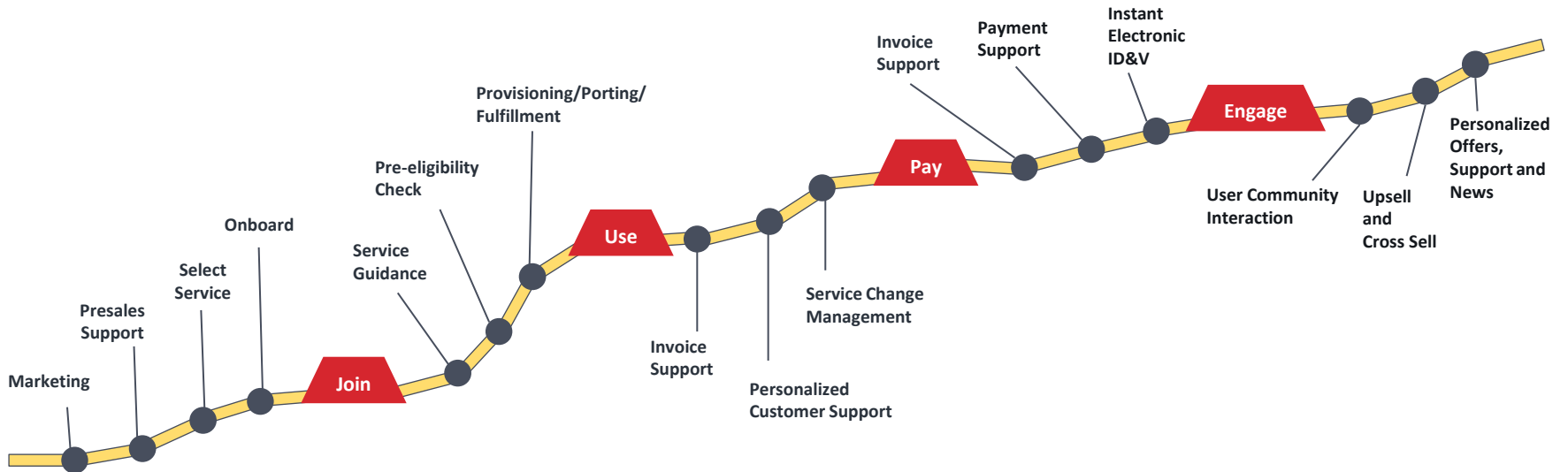Ex-4: Employee reimbursements/payroll/letter requests

Web – Static/FAQ   Web – Dynamic/Interactive   FB Messenger   WhatsApp   Voice   ....

Marketing

Presales Support

Select Service

Onboard

Join

Service Guidance

Pre-eligibility Check

Provisioning/Porting/Fulfillment

Use

Invoice Support

Personalized Customer Support

Service Change Management

Pay

Invoice Support

Payment Support

Instant Electronic ID&V

Engage

User Community Interaction

Upsell and Cross Sell

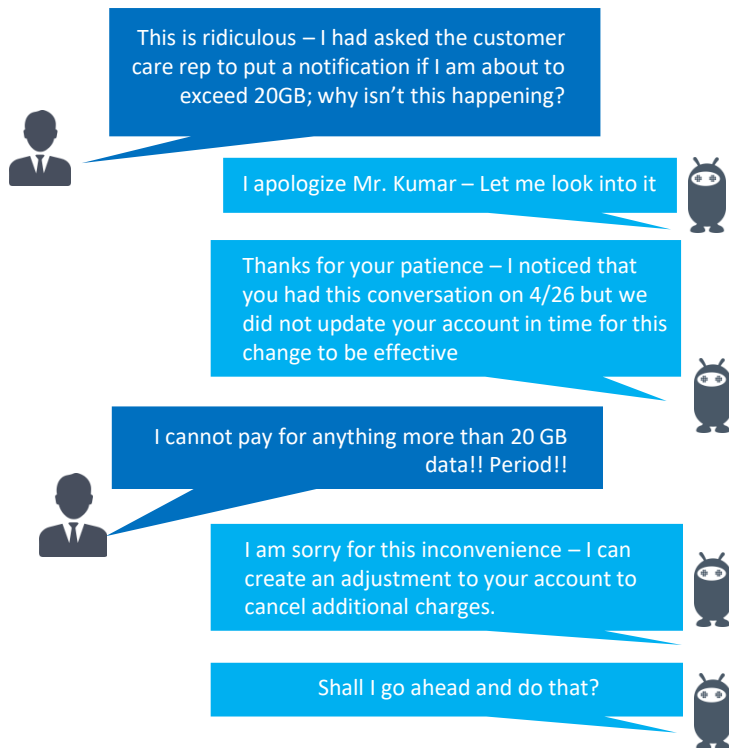Personalized Offers, Support and News

6

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NLP powered BOT identifies a customer request, understands the emotions, offers right solutions & also triggers backend processes through RPA for quick implementation

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Basic RPA   **Cognitive RPA**   Intelligent RPA

This is ridiculous – I had asked the customer care rep to put a notification if I am about to exceed 20GB; why isn't this happening?

I apologize Mr. Kumar – Let me look into it

Thanks for your patience – I noticed that you had this conversation on 4/26 but we did not update your account in time for this change to be effective

I cannot pay for anything more than 20 GB data!! Period!!

I am sorry for this inconvenience – I can create an adjustment to your account to cancel additional charges.

Shall I go ahead and do that?

- **Bot automatically senses the tone of the customer and associates it with displeasure – uses an apologetic tone to pacify the customer**

- **Bot has the ability to understand the context that the customer is referring to a past conversation and had asked for a specific update to be done**

- **Bot again accesses the required systems at the backend to provide accurate information to the user with minimal wait time**

- **Bot proposes a corrective measure based on the intelligence as to which step will solve the issue faced by the customer - also understands the customer's queries about payment**

- **Bot has the ability to implement corrective actions as well by triggering RPA bots in the backend to make the necessary changes**

The bot uses episodic memory to understand past actions and also the EQ ontology to understand human emotions while responding
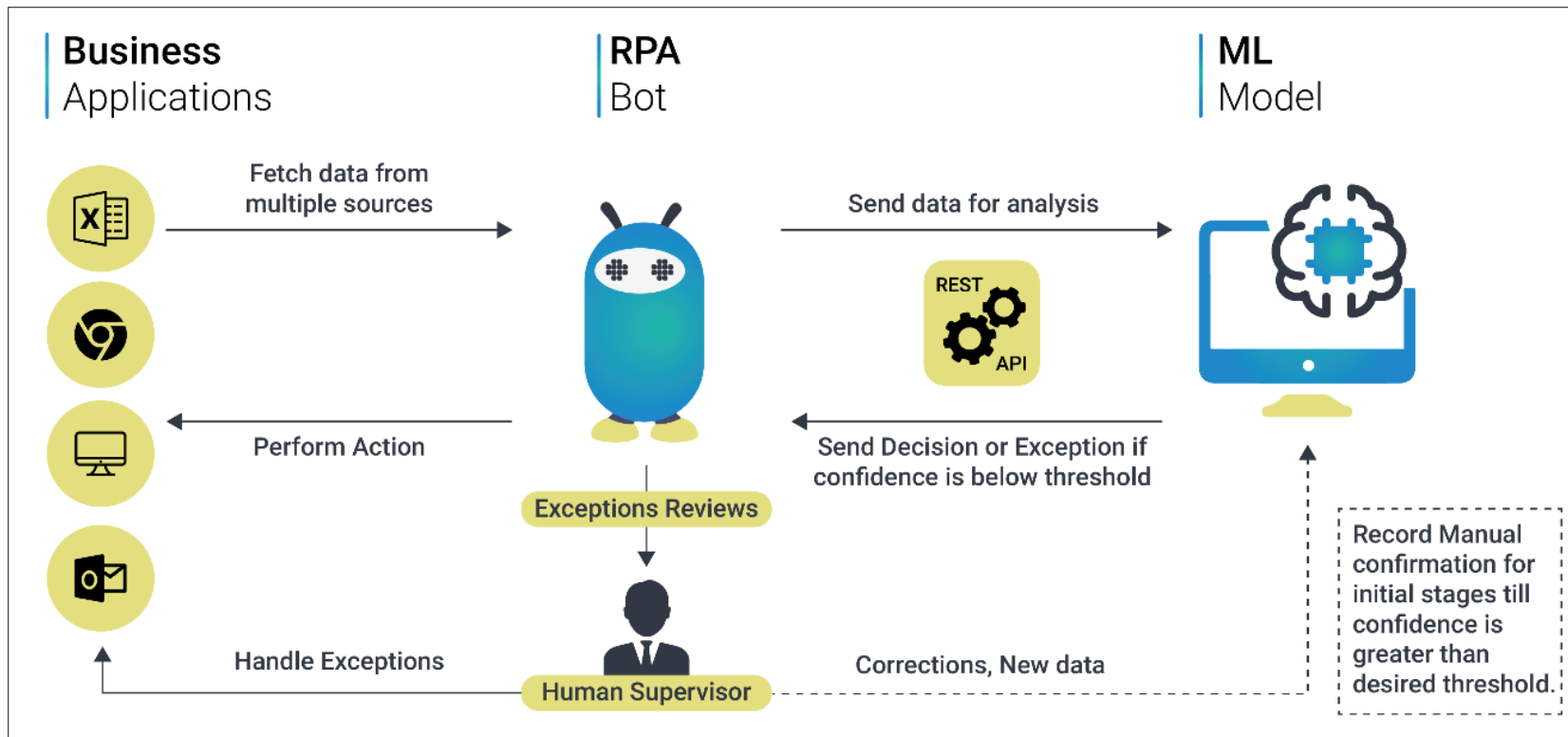
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Intelligent Robotic Process Automation

Enable BOTs to make decisions similar to those made by human experts

Basic RPA   Cognitive RPA   Intelligent RPA

Business
Applications

RPA
Bot

ML
Model

Fetch data from multiple sources

Send data for analysis

REST
API

Perform Action

Send Decision or Exception if confidence is below threshold

Exceptions Reviews

Record Manual confirmation for initial stages till confidence is greater than desired threshold.

Handle Exceptions

Human Supervisor

Corrections, New data

8

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RPA Approach: Centralized & Federated

BOT Development Factory Model

Centralized or De-centralized CoEs

Business 1	Business 2	Joint RPA Team

Business 1	Business 2	Business 3
Joint RPA Team		

Stakeholders from Telecom operator

Head of RPA CoE

Chair of the governance board from customer end

IT-Head
Responsible for run & maintenance of IT/Infrastructure

Business Unit Head
Responsible for program management

RPA Core Team

Delivery/Program Head

This core team will build additional team (developers, testers, controllers, etc.) based on RPA project's roadmap and requirements

Process Consultants

Technical Architects

Benefits

- Begin with centralized model and move into federated model for scale

- Standardize governance and ROI measurements

- Identify and share best practices to optimize investment

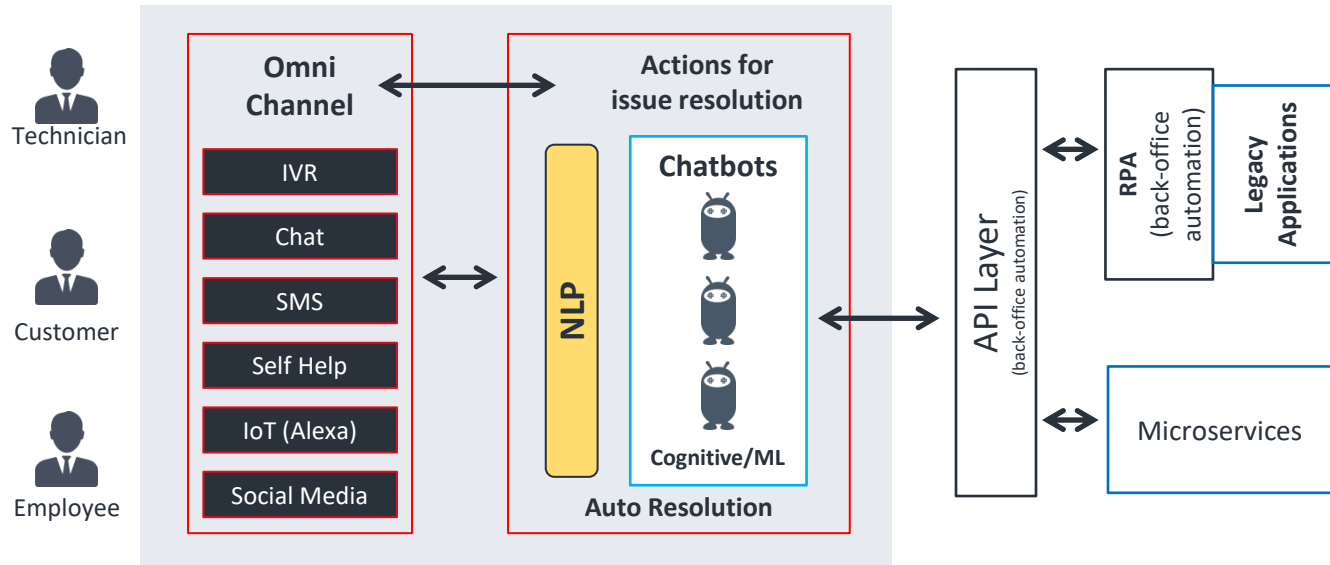- Leverage RPA as legacy systems wrappers for systems modernization effort

Demand Management + Generation	RPA Benefits Realization	Continuous Improvement	Delivery Steering + Training/Skill Building

RPA provides quick operational benefits allowing for long term strategic platform work

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Bringing it all together to provide better service at lower costs…

Technician

Customer

Employee

Omni Channel

- IVR
- Chat
- SMS
- Self Help
- IoT (Alexa)
- Social Media

Actions for issue resolution

NLP

Chatbots

Cognitive/ML

Auto Resolution

API Layer
(back-office automation)

RPA
(back-office automation)

Legacy Applications

Microservices

Benefits

- Reduce order and care call volume

- Provide seamless multi-channel experience

- Eliminate tech calls to back office and improve MTTR

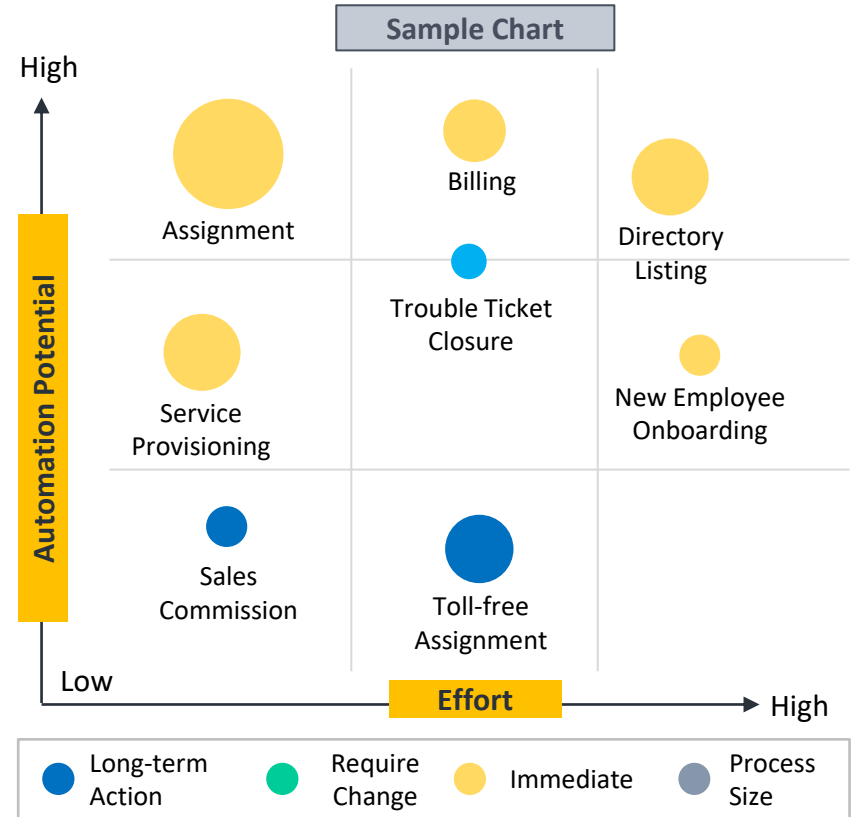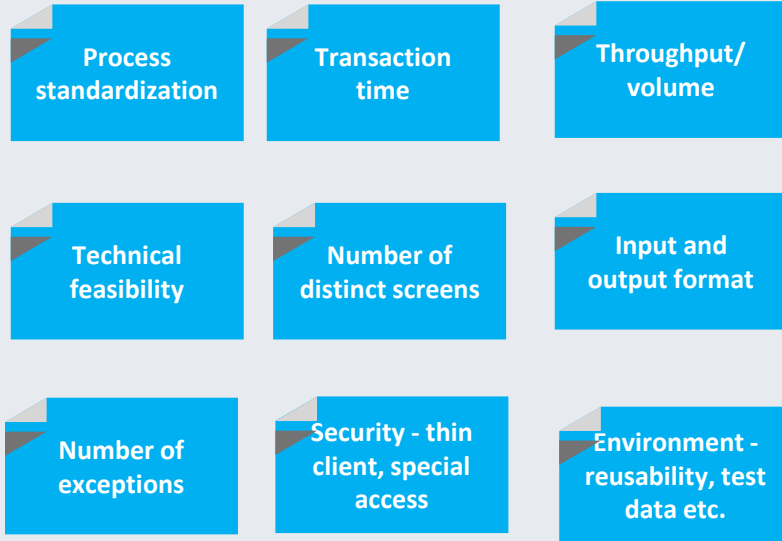- Storage of customer interactions information for future analytics

Natural language processing (NLP) engine provides context, intent and sentiment identification to carry forward meaningful conversation with customer, technician or employee

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Start with a process study to determine automation potential and execute a PoT (Proof of Technology)

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Step 1: Business Case/ROI Report

Automation potential review factors

Process standardization	Transaction time	Throughput/volume
Technical feasibility	Number of distinct screens	Input and output format
Number of exceptions	Security - thin client, special access	Environment - reusability, test data etc.

Sample Chart

High

Automation Potential

Assignment

Billing

Directory Listing

Trouble Ticket Closure

Service Provisioning

New Employee Onboarding

Sales Commission

Toll-free Assignment

Low

Effort

High

- Long-term Action
- Require Change
- Immediate
- Process Size

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Thank You

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President

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