

TECH & AI CASE STUDY - TELECOM - 2026

RPA Bots That Clear 12,000 Telecom Billing Disputes a Month

Based on a delivery engagement with Harborline Telecom

12,000

MONTHLY CASES AUTOMATED

11 days to 36 hrs

RESOLUTION TIME

-64%

COST PER DISPUTE

23% to 4%

SLA BREACHES

A fillable practice edition: the full story, 8 actions,
6 reflections and a 90-day plan - work it with your team.

Free - no email required
emersontechnology.com

MAKE THIS PRACTICE BOOK YOURS

Work it, do not just read it

This practice book turns the Harborline Telecom case study into a working session for your team. Read the full story first - what happened, what was built and what it changed. Then tick the 8 actions you can commit to, write short answers to the 6 reflections, and finish with a 90-day plan. Every field in this PDF is fillable: open it in Adobe Acrobat Reader, Chrome, Edge or macOS Preview, type directly into the boxes and save.

YOUR NAME

ROLE

COMPANY

TEAM / DEPARTMENT

DATE

EMAIL (OPTIONAL)

MY GOAL FOR THIS PRACTICE SESSION

- 01

The story - What happened at Harborline Telecom - before, during and after the project.
- 02

The results - The numbers that changed, plus industry benchmarks from public research.
- 03

The 8-action checklist - Tick boxes as your organization completes each step. Owner and date fields included.
- 04

The 6 reflections - Fillable questions that pressure-test your own roadmap.
- 05

My 90-day plan - Three fillable phase cards that turn this case study into your roadmap.

RUN IT AS A 90-MINUTE TEAM SESSION

25 min READ Read the story together. Ask everyone to note the one number that surprised them most.	40 min PRACTICE Work the 8-action checklist and the 6 reflections. Assign an owner and a date to every action you commit to.	25 min COMMIT Fill in the 90-day plan. One goal per phase, one number that tells you it worked. Book a review date before you leave the room.
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THE STORY

What happened, and why it worked

01 The Company

Harborline Telecom is a regional carrier serving 1.9 million subscribers across mobile, broadband and fixed-line services. The company reached its current shape the way most mid-sized carriers do: through a string of acquisitions, each of which arrived with its own billing platform still running. Five billing systems now sit behind a single brand, each with its own rate tables, call-detail formats and quirk set, and the customer has no idea which platform their plan lives on. Billing operations, the team that has to reconcile all of it, employs a mix of long-tenured agents who know the systems' moods and a rotating intake of new hires who face a steep and undocumented learning curve.

The billing dispute queue is where those compromises surface daily. When a subscriber contests a charge, an agent must determine what was actually billed, what the plan says should have been billed, and whether the difference deserves a credit — across up to five systems, under a service-level clock, with a regulator increasingly interested in the answer. Automation had reached the rest of Harborline's network and provisioning functions years earlier. The dispute desk was still handwork.

02 Where Things Stood

Every dispute was a manual investigation. Agents rekeyed case details from the intake channel, pulled call-detail records from the relevant billing platform, matched plan rates against what had actually been charged, and drafted credit memos that went out over email for approval. The average case took 11 days from complaint to resolution, and 23% of cases breached their SLA — not because agents were slow, but because the work was a scavenger hunt across systems never designed to answer the question being asked of them. A single duplicate-charge dispute could involve four systems and three people.

The financial and human toll accumulated in plain sight. Disputed revenue worth \$14M sat frozen in suspense accounts, unbillable and unreconciled, while the queue chewed through it case by case. Billing contacts scored Harborline 2.9 out of 5 on CSAT, and regulatory complaints about incorrect charges had been climbing quarter over quarter — the kind of trend that turns a service problem into a compliance problem. Leadership ran the obvious arithmetic: hiring another agent cost \$71K a year fully loaded and still only moved the queue by weeks, because every case required a human to move data between systems that should have been talking to each other years ago.

03 The Challenge

The challenge was volume with variance. Roughly half of all work activities could be automated with existing technology, with data collection and processing the most susceptible, as McKinsey Global Institute estimates — and a billing dispute is almost a textbook example: gather records, compare numbers, apply rules, produce a document. But the half that looked automatable was wrapped in complications that had defeated previous internal attempts. The five billing platforms were heterogeneous, some offering clean APIs and others offering only screens a robot would have to read like a person. Dispute types ranged from trivially mechanical to genuinely judgment-heavy, and early automation efforts had failed by treating them all the same way.

There were two harder constraints underneath. Compliance sat over everything: every credit, every adjustment and every customer explanation was auditable, so any automation had to leave a trail more complete than the humans it replaced, not less. And the workforce question could not be dodged. Harborline's agents were not the problem — they were the only reason the operation functioned at all — so a program that simply eliminated roles would destroy the goodwill the transformation needed. The brief to Emerson Technology was explicit: clear the

queue without weakening the controls, and give the reclaimed hours back to work a customer can feel.

04 Discovery and Diagnosis

Emerson Technology began with a four-week diagnostic built around the dispute backlog itself. The team tagged a full month of cases by cause, system touched and resolution path, then built the Pareto picture — and the picture was decisive. Three or four dispute types dominated the volume: cases with stable rules, clean digital inputs and resolution paths that barely varied from case to case. Those types were worth automating before anything else, and the remaining long tail — disputes requiring genuine judgment, multi-account tangles, cases with regulatory exposure — could stay human for now. The diagnostic also measured the drift between platforms: identical plan configurations billed differently depending on which of the five systems held the account, which explained a healthy share of the disputes at the source.

The workflow diagnosis explained why previous automation attempts had stalled. The intake channel dumped every dispute into one undifferentiated queue, so no triage existed; agents assembled the same evidence from the same systems dozens of times a day by hand; and approvals traveled over email, which added days and left a paper trail nobody could reconstruct under audit pressure. Gartner had reported RPA software revenue growing more than 63% in a single year — then the fastest growth of any segment of enterprise software — and Harborline's own earlier pilots were part of that wave, but they had automated fragments of the process rather than the lifecycle, so the hours saved leaked back out at every handoff.

The diagnosis set the design targets: classify at intake so every case type gets the right treatment, automate the full lifecycle end to end for rule-bound types, keep humans on judgment and dollar-value risk, and log everything. Deloitte's global RPA survey had found 86% of adopters reporting improved productivity and compliance, with typical payback in under 12 months — encouraging, but only for programs built with the discipline Harborline had so far skipped.

05 The Solution

Emerson Technology deployed a UiPath-based automation layer that handles the full dispute lifecycle for the rule-bound majority of cases, with humans plugged in exactly where judgment or dollar risk demands. The architecture has three layers.

Sorting the queue at intake

An intake classifier built in Python reads each incoming dispute and sorts it into one of 14 dispute types, which determines everything downstream: which systems the case touches, whether it qualifies for full automation, and what the SLA clock requires. Classification turned the single undifferentiated queue into routed lanes, so a mechanical duplicate-charge case stops waiting behind a complex multi-account tangle. Misclassification is measured continuously, and cases that agents reclassify during review feed back into the classifier's training set, so triage accuracy improves as a routine byproduct of normal operations rather than a periodic project.

The robot workflow end to end

For the automatable types, robots pull the evidence a human would have gathered — invoices, call-detail records and plan terms from the five billing platforms — through official APIs wherever the systems expose them and screen-level automation where they do not. The bots compute the correct charges, compare them with what was actually billed, draft the credit memo, update Salesforce with the case record and resolution, and send the customer a plain-language explanation of what happened and what changed. The API preference is deliberate: API bots break less and survive vendor updates far better, so screen-level automation is reserved for the legacy platforms where no integration exists. What used to be eleven days of scavenger hunt and email approvals becomes a single automated run measured in hours.

Audit trails, monitoring and the human threshold

Every automated run logs screenshots, inputs and system responses, so any dispute can be reconstructed after the fact — which converts an audit from a crisis into an export. Credits above \$200 route to an agent with the bot's full evidence attached, a threshold that keeps compliance comfortable while the robots clear the long tail below it. Orchestrator dashboards track queue depth, failure rates and SLA clocks in real time, with alerts on failed runs, changed interfaces and stuck queues, because silent bot failure is the leading cause of RPA programs quietly decaying within a year of launch. A weekly digest aggregates dispute causes and volumes for the billing operations team, which turns the automation layer into a sensor: the operation no longer just resolves billing errors, it can see them forming.

06 The First 90 Days

Weeks one and two formalized what the diagnostic had started: the Pareto analysis was completed across a second month of cases to confirm stability, the 14 dispute types were defined and documented with the billing operations leads, and the human-review threshold was agreed with compliance at \$200 per credit. The compliance team co-authored the logging standard — screenshots, inputs, system responses on every run — before the first bot touched a production case, not after the first audit finding.

Weeks three through six built and piloted the first three dispute types, chosen for stable rules and clean inputs. Bots ran in supervised mode, with agents shadowing each automated resolution and flagging anything the robot got wrong; the flag rate fell week by week as screen definitions were tightened and edge cases were routed to the exception lane instead of failing loudly. The first SLA improvement showed up here: the automated types stopped breaching almost immediately, and queue depth dropped visibly on the Orchestrator dashboard.

Weeks seven through ten extended coverage through the next tier of dispute types and completed the platform integrations — APIs where available, screen automation hardened against interface changes for the two legacy systems that offered nothing better. Orchestrator dashboards and alerting went live for the operations team, and the exception lane was staffed explicitly: agents trained on the case types most likely to need judgment, with the bot's evidence package attached to every escalated case. Weeks eleven through thirteen finished the rollout across full volume and added the management layer: the weekly dispute-cause digest, the reassignment plan that moved reclaimed analyst hours into retention calls and root-cause work, and a deliberately unfriendly test — the compliance lead pulled ten closed dispute files at random and asked how fast each could be reconstructed. Every one came back complete within minutes, which did more for internal confidence than any metric on a slide.

07 The Results

The automation layer now clears 12,000 disputes a month — roughly 78% of total volume — with agents handling exceptions only, and average resolution time fell from 11 days to 36 hours. Cost per dispute dropped 64%, and SLA breaches fell from 23% to 4%, which changed the desk's relationship with its own service commitments: the SLA clock went from a recurring embarrassment to a monitored, mostly-comfortable metric. Analysts reclaimed about 8,600 hours a month, hours now spent on retention calls and root-cause fixes instead of rekeying the same case details into the same five systems. Regulatory complaints tied to billing errors fell for the first time in three years, and the weekly digest means the billing operations team can point to the upstream defects driving the remaining volume.

METRIC	BEFORE	AFTER
Monthly cases automated	-	12,000
Resolution time	11 days	36 hrs

METRIC	BEFORE	AFTER
Cost per dispute	-	-64%
SLA breaches	23%	4%

The secondary effects compounded the headline numbers. The \$14M in disputed revenue that sat frozen in suspense accounts began moving as the backlog cleared, and the CSAT trajectory for billing contacts turned upward as response times collapsed. The agents' work changed in character rather than disappearing: retention calls, complex escalations and root-cause analysis are visibly more valuable to customers and to leadership than rekeying, which is what made the transformation stick politically inside the operations team. And because every bot run is logged, the compliance function's confidence in the automation now exceeds its confidence in the manual process it replaced — the rare automation outcome where the audit trail improves along with the speed.

08 What Your Business Should Do

Harborline's program yields eight moves that generalize to almost any high-volume back office. Inventory your disputes by root cause: tag a month of cases by cause, system touched and resolution path, and let the Pareto chart point to the three or four dispute types worth automating before anything else. Start with rule-bound case types that have stable rules and clean digital inputs, because early wins on repetitive cases fund the harder, exception-heavy workflows that always come later in the roadmap. Prefer APIs over screen scraping — use official integrations wherever your systems expose them and reserve screen-level automation for legacy platforms, since API bots break less and survive vendor updates far better. Set a human-review threshold from day one, routing credits above a defined dollar amount to agents with full bot evidence attached; clear thresholds keep compliance comfortable while robots clear the long tail.

Then run the automation like the production system it is. Log every bot action — screenshots, inputs and system responses for every single run — because dispute handling invites audits, and complete logs turn them from a crisis into an export. Monitor your bots like production software, alerting on failed runs, changed interfaces and stuck queues, since silent bot failure is the leading cause of RPA programs quietly decaying within a year of launch. Reassign people to judgment work deliberately: move reclaimed hours into retention, root-cause analysis and complex escalations, because automation pays off politically when the team's remaining work becomes visibly more valuable to customers and to leadership. And fix upstream billing defects relentlessly — aggregate dispute causes monthly and hand them to billing operations with counts attached, since fixing an upstream defect removes volume permanently instead of paying to automate it forever.

Before you commit to any of it, answer the questions Harborline's team had to answer honestly: how many disputes your operation touches monthly and what each truly costs in labor; which three case types, automated, would free the most skilled hours for work customers actually notice; where your SLA breaches cluster and whether you know the root causes or just the counts; how fast you could reconstruct what happened in ten dispute files if an auditor pulled them today; how much of your team's day goes to copying data between systems that should have been integrated years ago; and which upstream defect, if fixed once, would remove the most dispute volume permanently. Work through the eight actions with your billing operations and compliance leads, and revisit those reflection questions each quarter to keep the program honest.

REAL-WORLD PROOF & BENCHMARKS

Deloitte's global RPA survey found 86% of adopters reported improved productivity and compliance, with typical payback achieved in under 12 months. - Deloitte, 2018

Gartner reported RPA software revenue grew more than 63% in a single year — then the fastest growth of any segment of enterprise software. - Gartner, 2019

McKinsey Global Institute estimates about half of all work activities could be automated with existing technology, with data collection and processing the most susceptible. - McKinsey Global Institute

THE PRACTICE PAGES

The 8-action checklist

Work through the list with your team. Tick each box as your organization completes the step, and fill in an owner and a target date so every action has a name and a deadline.

☐

1. Inventory disputes by root cause

Tag a month of cases by cause, system touched and resolution path. The Pareto chart will point to three or four dispute types worth automating before anything else.

OWNER

TARGET DATE

STATUS

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2. Start with rule-bound case types

Pick dispute types with stable rules and clean digital inputs first. Early wins on repetitive cases fund the harder, exception-heavy workflows that always come later in the roadmap.

OWNER

TARGET DATE

STATUS

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☐

3. Prefer APIs over screen scraping

Use official integrations wherever billing systems expose them and reserve screen-level automation for legacy platforms. API bots break less and survive vendor updates far better.

OWNER

TARGET DATE

STATUS

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☐

4. Set a human-review threshold

Route credits above a defined dollar amount to agents with full bot evidence attached. Clear thresholds keep compliance comfortable while robots clear the long tail.

OWNER

TARGET DATE

STATUS

--	--	--

☐

5. Log every bot action

Capture screenshots, inputs and system responses for every single run. Dispute handling invites audits, and complete logs turn them from a crisis into an export.

OWNER

TARGET DATE

STATUS

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6. Monitor bots like production software

Alert on failed runs, changed interfaces and stuck queues. Silent bot failure is the leading cause of RPA programs quietly decaying within a year of launch.

OWNER

TARGET DATE

STATUS

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7. Reassign people to judgment work

Move reclaimed hours into retention, root-cause analysis and complex escalations. Automation pays off politically when the team's remaining work becomes visibly more valuable to customers and to leadership.

OWNER

TARGET DATE

STATUS

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8. Fix upstream billing defects

Aggregate dispute causes monthly and hand them to billing operations with counts attached. Fixing upstream defects removes volume permanently instead of paying to automate it forever.

OWNER

TARGET DATE

STATUS

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AFTER THE CHECKLIST: OUR TOP 3 PRIORITIES

From the eight actions above, write down the three you will start first - and the single number you expect each one to move. Three priorities with owners beat eight without any.

PRIORITY 1 NUMBER IT SHOULD MOVE	PRIORITY 2 NUMBER IT SHOULD MOVE	PRIORITY 3 NUMBER IT SHOULD MOVE
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THE PRACTICE PAGES

Reflections for your team

Use these questions in your next planning session and type short answers into the boxes. The gaps you find are usually the fastest wins.

Q1. How many disputes does your operation touch monthly, and what does each one truly cost in labor?

Q2. Which three case types, automated, would free the most skilled hours for work customers actually notice?

Q3. Where do your SLA breaches cluster, and do you know the root causes or just the counts?

Q4. If an auditor pulled ten dispute files today, how fast could you reconstruct what happened in each?

Q5. How much of your team's day is copying data between systems that should have been integrated years ago?

Q6. Which upstream defect, if fixed once, would remove the most dispute volume permanently?

THE PRACTICE PAGES

My 90-day plan

Finish the session by committing to a plan. Three phases, one goal each, one number that tells you it worked. Bring this page to your next leadership review - or to a free consultation with Emerson Technology, and we will pressure-test it with you.

Days 1-30 Focus: audit and alignment

PRIMARY GOAL**KEY ACTIONS****HOW WE MEASURE SUCCESS****OWNER**

Days 31-60 Focus: build and prove

PRIMARY GOAL**KEY ACTIONS****HOW WE MEASURE SUCCESS****OWNER**

Days 61-90 Focus: scale and measure

PRIMARY GOAL

KEY ACTIONS

HOW WE MEASURE SUCCESS

OWNER

Tip: save a copy per team so each group keeps its own answers. Revisit the reflections every quarter - the questions stay the same even as the numbers move.

BOOK THE REVIEW BEFORE YOU CLOSE THE BOOK

Plans without a review date drift. Before you close this practice book, agree on when you will come back to these pages, who will run that session, and when you will check the numbers again. If you want an outside pair of eyes, bring this page to a free consultation with Emerson Technology and we will pressure-test the plan with you.

REVIEW DATE	REVIEWED BY	NEXT CHECK-IN
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Ready for a transformation like Harborline Telecom's?

Emerson Technology designs and builds the data, AI, cloud and automation systems behind results like these. On a free consultation call we will map this exact playbook to your business - your data, your constraints, your numbers.

Book a free consultation

support@emersontechnology.com

or start online: emersontechnology.com/contact