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The cost of payment system downtime and how to minimize risk

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Introduction

POS downtime at gas stations and convenience stores during peak hours can cost thousands in revenue. Additional invisible costs could include losing customers to competitors and harm to brand reputation. Operators who identify early warning signs, apply prevention strategies, and consolidate to a unified payment platform can reduce outage risk.

Picture a busy holiday weekend morning where cars are lined up to get gas, families are running into your convenience store to pick up road snacks, drinks, and other items. All of a sudden, your POS system goes down. Loyalty cards won't scan, fuel pumps can't authorize transactions, and digital payment transactions in-store are stalled. The customer line grows longer while your staff tries to troubleshoot. After a few minutes, some patrons walk out and head over to your competitor down the road, with a few vowing to drive past your station next time, too.

In 2025, c-stores generated $341.2 billion and had an average of 1,484 transactions per day (at the pump and inside the store). This is why just several minutes of downtime can lead to a direct loss of revenue and poorly reflect on your brand.

In this article, find out how much you stand to lose when systems fail. More importantly, you'll learn about how to identify the early warning signs of an impending failure, the role that your payment architecture plays, and how to create a framework for downtime prevention.

$341.2 billion

Generated by c-stores in 2025

1,484

Transactions per day

What payment system downtime actually costs petro operators

The direct revenue loss: What the numbers say
POS downtime costs can vary widely depending on timing and business size. Going by industry estimates that say a mid-sized retailer can lose as much as $10,000 per hour, high-traffic locations like gas stations and c-stores can also be out several thousand dollars during peak hours.

If the station sells the average of 4,000 gallons of gas per day, at $4.50 per gallon, that would mean losing around $750 per hour just at the pump. But it's once you factor in lost c-store sales (which account for 61.2% of the gross profit), loss of repeat business, and reputational damage that the payment downtime losses really add up. For instance, a station generating $50,000 per month in c-store revenue can quickly lose thousands per incident.

Gas stations are particularly vulnerable to downtime profit losses given their high transaction volumes and tight fuel margins.

$750

Fuel revenue loss per hour

The hidden costs: What doesn't show up on an incident report

Besides actual lost revenue from POS downtime, there could be indirect impacts, too.

Customers may just leave and not come back
While this may not be something you can measure, one can imagine that disruptions could turn frustrated customers away. Considering that 63% of high-mileage drivers choose gas stations based on the convenience of location, that means that brand switching is already common and customers won't hesitate to go elsewhere if they are inconvenienced.

Loyalty program users could miss out on perks
Almost half of consumers say they used a gas station loyalty program or app in April 2026. But during payment system outages, loyalty points cannot be earned or redeemed, which can be a major customer turnoff, especially when gas prices are running higher.

Security fears could emerge
According to Dover Fueling Solutions' Future of Fueling report, 79% of consumers said payment security is the feature they value most when making purchases at gas stations. An outage could give the perception that customer data is vulnerable or that the connection isn't secure.

There may be a decrease in staff productivity
When your staff members lose access to the POS system, they may spend time finding manual workarounds and then have to log transactions later once the system is back up. This takes valuable time away from other duties and responsibilities.

It could be a compliance liability
Because POS systems process sensitive consumer and financial data, poorly constructed ones are not only more likely to fail, but they could be more susceptible to potential cyberattacks or data breaches. Keeping up with PCI compliance and using up-to-date software is also a business obligation, and not doing so could subject you to fines or other penalties.

Your reputation might take a big hit
Major outages like the CrowdStrike Microsoft incident that took down Speedway stations make headlines, but even random downtime that inconveniences just a few customers can pose a brand reputation risk. Customers who have a poor experience may hesitate to do business with your brand again or even blast your station on social media.

63%

Choose gas stations based on location convenience

79%

Consider payment security the most important feature

The cumulative math

Small operators feel it proportionally harder
Margins at the pump are already tight (with some estimates saying they're less than 2%) so even the loss of a few thousand dollars can quickly do damage to a small or midsized operator.

The severity of POS downtime also depends on the timing and duration. During peak hours such as the morning or evening commute or before a holiday weekend, the impact will be far greater than it would in the middle of the night.

The compliance dimension of downtime
When POS systems crash, it could lead to transactions that are lost or aren't logged properly, exposing your station and c-store to regulatory attention. Operators who use an older or fragmented system assume the burden of PCI DSS 4.0 compliance, which can be time consuming and costly.

The fraud surface that opens during downtime
Downtime is sort of like leaving a running car unattended. For instance, fraudsters can try skimming an outdated payment terminal while the operator is distracted by the outage. Visible payment outages also send the signal that security may be lacking, which can make the station a target.

The accountability gap in practice

Payment system downtime isn't a simple "flip the switch off and back on" fix. Here's what a pump authorization failure on a Friday evening might look like:

- The operator immediately calls the terminal vendor to troubleshoot, but after 15 minutes of back and forth, the vendor determines it's a network issue.
- The operator then calls the network tech support, goes through some questions, and performs a few tests, only to find out that the network signal is strong. The call gets kicked to the next vendor as a POS configuration problem.
- By now, it's approaching an hour of downtime in the forecourt. Frustrated, the operator tries to call the POS vendor, but their business hours have ended and the only recourse is to message them and wait.

The challenge in this scenario is that the operator, who is not particularly tech savvy, is working with multiple vendors and there is no clear accountability. Each vendor passes the buck and has different availability, and the operator is at the mercy of that system.

In this situation, the fragmented tech stack is the problem. Whereas if the operator was working with a single provider that offers 24/7 support and has full visibility into the transaction path, the issue could be diagnosed quickly, saving hundreds or thousands of dollars.

When multiple vendors are involved, no one owns the problem

How to minimize payment system downtime risk: A petro operator's framework

While you can't completely prevent payment system downtime, there are steps you can take to reduce the likelihood or limit the losses. Follow this checklist:

Step 1:

Create a full asset inventory with life cycle dates

Dealing with outages by rifling through sticky notes or half-torn user manuals is not efficient. Develop a master document (digital with a paper backup) of every hardware component at every fueling position and in-store register that includes the make, model, firmware version, installation date, and last service date.

This resource will be handy when you need to report an outage, and it can help you monitor the lifespan of older components. In the petro world, where forecourt hardware is exposed to weather year-round, equipment that is older than three years should be prioritized for maintenance and review.

Step 2:

Establish a software update cadence and implement it

Using outdated system versions can mean you're missing crucial security patches or it can impact customer experience if there's a lapse with multi-brand loyalty integrations. If you get really behind, your system version may no longer be supported.

To avoid this happening, operators can delegate ownership of software version tracking to a specific employee (or a vendor if outsourced). Create rules around how often software update checks should be performed and set a benchmark to never operate more than one major release behind the current certified version.

Stay on top of the transaction chain by keeping each software piece updated including PIN pad firmware, site controller software, EPS versions, and POS applications.

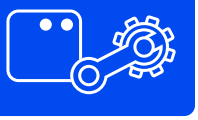
Step 3:

Implement active system monitoring rather than reactive alerts

To spot the warning signs of a POS outage before it happens, rely on your cloud management tools to detect trends and run reports in real time. You can monitor things like transaction latency, error log frequency, and authorization decline patterns. If your system allows, you can set up notifications when certain early warning thresholds are reached. For example, the system can recognize and alert you if there is an error rate spike so that you can contact your vendor to intercede before there's a full outage.

Step 4:

Conduct quarterly physical hardware inspections at the forecourt



Hardware should undergo regular physical inspections on at least a quarterly basis. Wear and tear happens faster outdoors because of the high volume of transactions and weather conditions, but staying on top of maintenance and repair can help you avoid putting pumps out of service.

Components that require regular check-ups include: card readers (as well as performing contactless reader testing), DCR housing, and receipt printer output quality.

Step 5:

Document vendor service level agreements (SLAs) and test response times annually

Keep a master document with all of the vendors involved in the full payment cycle. List which aspects each of them owns, contact information, and what their contractual response commitment is.

Another best practice is to simulate a peak-hour failure incident with your team, and understand the steps required for escalation. This exercise also allows you to identify gaps and figure out a better approach so you're fully prepared on what to do should an actual incident take place.

Step 6:

Evaluate infrastructure consolidation as a risk-reduction strategy

As you document, test, and map out every vendor relationship in your current transaction flow, you find there are many moving parts. Every additional integration point in the process can increase the risk of POS failure.

If you're working with three or more vendors, you might want to explore if a unified infrastructure could help simplify and protect your payment environment. Having just one partner, for example, can eliminate those frustrating vendor handoffs that can cause downtime to linger. With one dependable and responsive vendor, you can bring site control, payment processing, loyalty management, and POS under one roof.

Potential issues and strategies to address them

If you ultimately decide that a new integrated petro and c-store infrastructure is the way to go, there are a few ways to ensure that the transition goes smoothly.

Issue	Strategy
Potential disruption of 24/7 operations during launch	When seeking a vendor, choose one that offers zero-downtime installation or a phased rollout. In some cases, you may be able to install a new system without having to close your pumps at all. If a brief downtime is needed, choose your least active time, such as the middle of the night on a weekday.
Compatibility with your legacy dispenser	Petro controllers should be able to handle multiple manufacturer dispensers and DCR types without requiring new or additional hardware. Confirm that the new site controller can support your system before you move forward.
Resistance from oil brand or franchisor on approved vendor lists	Branded (NCR) operators should choose an integrated payment platform that carries certification across all major oil brands in order to avoid any potential pushback from the franchisor.
Upfront costs of new infrastructure for budget-constrained operators	For independent unbranded operators, calculate the number of outage hours it takes for the investment to pay for itself as part of your analysis. Especially for operators that have dealt with expensive outages before, weighing the cost of a more stable and streamlined system should go beyond just the system price tag.
Uncertainty over whether tech upgrades will actually perform as advertised	It's understandable to feel fatigue from seeing an endless stream of product launch announcements that overpromise. Instead, look for vendors with a demonstrated track record of petro industry success. Ask about how many active deployments they have and for referrals and testimonials from current customers.

Downtime is a business model problem, not a technology problem

Petro operators have a lot to lose when systems fail or hardware breaks down. Overcoming that problem might require an architecture overhaul rather than just patching up your tech stack. When there is a lack of accountability because too many vendors are involved, it's the operator that is ultimately left holding the bag (and feeling the pain of lost revenue).

Making the decision to transition to a unified infrastructure is a key strategy for turning major payment downtime margin drain into a far less frequent minor inconvenience. Once you cut out some of the middlemen, it not only makes the transaction pathway less bumpy, but it gives operators one point of contact to turn to for support.

Fuel retail has seen a lot of payment innovation over the last few years from EV charging integration and mobile payments to expanded c-store food service, and there's no telling what might come next. The main question operators should be asking right now is this: Does it make sense to keep adding onto an already complex payment stack, or is now the time to build a unified foundation that can grow and scale and protect you from fragmentation-related downtime?

Key takeaways

01

The average gas station sells about 4,000 gallons of gas per day. At $4.50 per gallon, that would mean an $18,000 loss in revenue in one day from a POS outage, not including lost c-store sales, loss of repeat business, and reputational damage.

02

With nearly three quarters of customers citing quick payments as what they value most at petro stations, the customer defection rate following a payment failure event could be significant.

03

A typical fragmented petro payment stack can have several vendors (forecourt equipment, c-store POS, fleet management, loyalty programs, etc.), making downtime troubleshooting and repairs more time consuming and complex.

04

Integrated payment infrastructure can improve important metrics like uptime and the mean time to recovery (MTTR) while simplifying compliance.

05

To reduce downtime risk without a full infrastructure change, operators can create an inventory list of all equipment and a contact list of all vendors, and check for software updates.

Frequently asked questions

How much does payment system downtime cost a gas station per hour?
With the average gas station selling about 4,000 gallons of gas per day, at $4.50 per gallon, that would mean a $750 loss in revenue at the pump in one hour from POS downtime. However, because fuel sales only account for 38.8% of gross profit dollars at c-stores, the loss can be much higher when factoring in lost c-store sales, brand reputation damage, and loss of repeat business.

How can a gas station owner minimize the risk of payment system downtime?
To minimize payment system downtime, gas station and c-store operators should follow a proactive framework. First, create an asset inventory for all hardware including make, model, firmware, installation, and service dates. Next, establish a regular software update schedule and assign ownership to a team member, and use tools and tests to detect early warning signs of downtime risks. Finally, document all vendor information and evaluate the costs and benefits of switching from a fragmented tech stack to a single unified provider.

What causes payment terminals to go offline at gas stations?
Gas station payment terminals can go offline for a number of reasons, some preventable and some not. These include hardware damage from environmental factors like weather, connectivity issues such as ISP outages, or disruptions caused by using a fragmented vendor stack.

What should I look for in a petro payment system to ensure maximum uptime?
When exploring petro payment systems to improve uptime and your payment environment in general, look for key attributes including: certifications, single-vendor accountability, remote monitoring, and mixed-dispenser support. It's also important to ask plenty of questions, request to speak with current customers, and look for transparency when reviewing potential contracts.

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