Enterprise Strategy Group™ by TechTarget

ECONOMIC VALIDATION

Analyzing the Economic Benefits of FireHydrant Full-cycle Incident Management

Reduce the Explicit Costs, Opportunity Costs, and Cultural Drain of Incident Management While Realizing a 210% ROI

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July 2023

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Introduction

This Economic Validation from TechTarget's Enterprise Strategy Group focused on the quantitative and qualitative benefits organizations can expect from using FireHydrant's full-cycle incident management to streamline declarations, accelerate response efficiency, boost learning, reduce risks, and improve service resiliency.

Challenges

Enterprise architectures are growing increasingly more complex, with more clouds, services, and integrations, making it more difficult to resolve incidents when they occur. At the same time, customer expectations for application performance and availability are elevated, making it more important to address and resolve incidents as quickly as possible.

Today, when an incident occurs, teams jump into action to get the right engineers engaged. Unfortunately, through customer interviews, Enterprise Strategy Group found it can take an average of 30 minutes just to declare the incident, assemble the right people, collect the needed information, and start the processes needed to respond. Too many manual steps, documentation gaps, and friction in the incident management process conspire to slow down response times, extend downtime, and ultimately hurt the business.

Engineers know that these incidents are often a top priority, but they result in work interruptions taking attention away from building revenue-producing products and leading to exhaustion and burnout. Enterprise Strategy Group's customer interviews also found frequent failure to record and learn from incident experiences; this, in turn, led to a rinse-and-repeat cycle of incidents and responses and an overall failure to proactively eliminate issues, streamline processes, and improve customer experiences.

To help address this challenge, many organizations attempt to automate incident response by extending existing tools or developing homegrown apps, but these attempts don't deliver needed automation and integrations, leading to swivel chair management across disparate systems, documentation shortfalls, critical gaps, and friction in the process. As seen in Figure 1, the top challenges reported by interviewed customers include resource constraints, resource burnout, increasing frequency of incidents, and the cost of manual processes necessary to get an incident started.

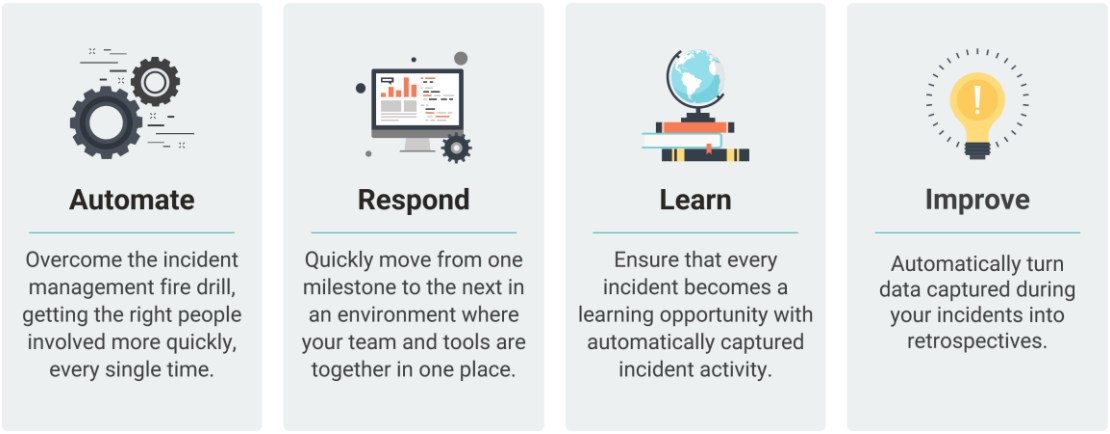
Figure 1. Top Challenges in Incident Management

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

The Solution: FireHydrant Incident Management

FireHydrant offers a full-cycle incident management platform that streamlines incident management processes and timelines. As seen in Figure 2, FireHydrant injects efficiencies throughout the lifecycle of an incident.

Figure 2. FireHydrant Helps Organizations Automate, Respond, Learn, and Improve



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

FireHydrant delivers these functions with proprietary capabilities, including:

- **Runbooks.** By automating a customer's defined people, information, and processes and enforcing them automatically, Runbooks provide turn-by-turn navigation and ensure everyone follows a defined process. This ensures incidents are actioned, guided, and completed the correct way every time.
- **Service catalogs.** FireHydrant helps keep the service catalog up to date to ensure the right people, information, and processes are assembled and leveraged as quickly as possible.

- **Incident timelines.** FireHydrant automatically tracks and annotates everything regarding an incident as it is worked on, helping customers avoid ongoing note taking—or worse, having to exhaustively go back and cobble together the retrospective.
- **Single source of truth.** FireHydrant brings data from all of a customer's disparate tools into a single pane of glass and keeps a running diary of the incident with updated milestones, key events, and notes that are easy to sort through for all responders. This enables any responder to essentially catch themselves up with a self-service process.
- **Cultural change.** FireHydrant facilitates cultural change in engineering teams by knocking down knowledge silos, bringing incident work into the open, and reducing burnout for teams.
- **Integrations.** FireHydrant integrates into multiple existing tools with its integration library and APIs, enabling customers to programmatically manage and seamlessly integrate FireHydrant within their stack and workflows. FireHydrant's Slack application lets any customer declare, manage, and resolve incidents directly in Slack. Rich ChatOps commands enable responders to call for important information and people, capture key moments, and communicate updates.
- **Customer and user experience.** Users can consistently communicate their reliability status with stakeholders and customers without leaving their incident management workflow. They can also disclose the right information to the right people with audience-based pages that ensure their teams, users, and customers have the information they need about each incident.
- **Analytics.** The platform automatically compiles data collected during incidents and retrospectives into an analytics dashboard to understand key metrics, including MTTR, functionality impact, and retrospective completion.

FireHydrant customers shared with Enterprise Strategy Group that since their implementation of FireHydrant they could:

- Accelerate incident declaration and assembly to get the right people engaged, information collected, and process initiated more quickly and efficiently.
- Automate and streamline incident management to better understand and execute on what to do, who to involve, and what to communicate.
- Perform retrospectives more easily and consistently to boost learnings, reduce future incidents, and minimize business and customer impacts.
- Avoid engineering burnout and reclaim time squandered by redundant housekeeping tasks, excessive response teams, and process friction.
- Look across multiple retrospectives for trends and opportunities to not only improve their retrospective process but also to invest in their system.
- Obtain a holistic view of incidents for the organization to find patterns and hotspots in resources, functions, processes, and more that require them to invest in their team and system.
- Leverage the existing tools their team already uses to elevate their incident management maturity without a disruptive rip-and-replace or long learning cycle.

Enterprise Strategy Group Economic Validation

Enterprise Strategy Group (ESG) completed a quantitative economic analysis on FireHydrant Full-cycle Incident Management and its impact on an organization's ability to reach IT and business goals. ESG's Economic Validation process is a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages ESG's core competencies in market and industry analysis, forward-looking research, and technical/economic validation. ESG conducted in-depth interviews with end

users to better understand and quantify how FireHydrant has impacted their organizations, particularly in comparison with previously deployed and/or experienced solutions. The qualitative and quantitative findings were used as the basis for a sample organizational economic model comparing the expected costs and benefits of FireHydrant with alternative solutions.

FireHydrant Full-cycle Incident Management Economic Overview

Enterprise Strategy Group's economic analysis revealed that FireHydrant's full-cycle incident management can provide its customers with significant savings and benefits in the following categories:

- **Explicit cost savings.** FireHydrant customers can realize direct benefits that lower the cost of managing incidents and lessen the impact of incidents that cause disruption.
- **Opportunity costs of incidents.** Time spent on incident management and remediation takes away from time to generate revenue-enhancing code and products.
- **Cultural drain of incidents.** Few engineers enjoy spending time setting up and being randomized by irrelevant communication while managing incidents.

Explicit Cost Savings

Every organization interviewed for this analysis listed lowering costs as a top priority for its incident management system. These explicit costs directly map to bottom-line numbers:

- **Optimizing assembly.** When an incident occurs in an organization with traditional incident management, ad hoc processes and poor documentation consume an inordinate amount of resources at the beginning of the incident. The organizations interviewed for this project shared that before FireHydrant, it took much longer than it should to assemble the right engineers, information, and processes to properly declare and begin the remediation process. Enterprise Strategy Group (ESG)'s modeled organization showed that the benefits of moving to FireHydrant included:
  - **Reduced assembly time.** Customers told ESG that before FireHydrant, it could take anywhere from 12 to 90 minutes to kick off an incident response and get the right people in place to start working the issue. FireHydrant brings that assembly time down to seconds.
  - **Fewer engineers needed.** The number of engineers involved in an incident is lowered by 20%, reducing the average number of engineers involved from 5 to 4 with FireHydrant. This is because FireHydrant helps responders identify and bring in the service owners of the degraded functionality faster and makes it easier to assign roles and tasks during incidents, eliminating extraneous hands.
  - **Total time saved for incident assembly.** In ESG's sample organization, the total person-hours needed for incident assembly with FireHydrant was reduced from 3,362 down to 269—or the equivalent of 1.8 full-time engineers—for a total savings of $236K per year.
- **Incident handling.** Inadequate and inconsistent declaration leads to inefficiencies throughout the incident assembly process across engineering, customer support, and account management teams. More resources than needed are called to help investigate and resolve the problem. Before FireHydrant, ESG found that customers incurred costs and delays for the following reasons:

> **"Before FireHydrant, every incident assembly was a scramble. People included would often wonder why, and people excluded would wonder the same thing. Even worse, a business lead would sometimes make our tech leaders aware of an incident that was impacting revenue. There was no single source of truth for this vital information. With FireHydrant, we no longer have the cascade of questions to get the right people engaged. We have a repeatable process to get the correct people involved and informed."**

- Step-by-step guidance was missing, leading to process missteps, blind alleys, gaps, and friction.
- Manual housekeeping was used to document the incident and timeline, a tedious consumption of engineering resources that was prone to mistakes.
- Handoffs were manual and ad hoc, slowing the process and wasting even more time.
- Communications were manual and inconsistent.
- A lack of retrospectives and analysis meant that, too often, the same functions were causing issues, the same inefficient playbooks were run, mistakes were repeated, and inefficiencies remained.

With FireHydrant, ESG found that the time consumed for incidents went from 2 person-hours for low-priority items down to 1.8 hours, while high-priority issues went from 8 hours down to 7.2 hours. This improvement was an annual savings of 2,948 person-hours, or 1.6 saved FTEs equating to $207K saved per year.

- **MTTR and downtime costs.** With traditional incident management, friction and gaps in the incident assembly and declaration process mean that the right people and processes don't begin addressing the incident as quickly as possible, leading to delayed response at the most critical time. A lack of step-by-step guidance during the incident management process introduces incident resolution gaps and friction, further slowing time to resolution. A lack of learnings means that the process doesn't improve and optimize over time, creating a rinse-and-repeat cycle of resolution delays and downtime impacts on the business.

  Outages and service degradations from these delays lead to an impact on operations, customers, and the brand:

  - When a back-office application is impacted, employee productivity can be affected.
  - When a product or e-commerce site is impacted, customers are directly affected, and brand damage can occur, leading to a loss of referrals and future sales beyond the immediate revenue loss.
  - When a corporate website is impacted, brand perception can be affected, and sales can be indirectly lost.

  And the outages and degradations can also result in a direct cost, with a breach in service-level agreements with customers leading to compliance fines and penalties. Based on the severity of the issue, the potential downtime impact for our composite organization is an aggregate across its operations, customers, and the brand, estimated to be an average cost per downtime hour of:

  - Low priority: Sev4 + Sev5 = **$5,000 per hour**
  - Medium priority: Sev3 = **$25,000 per hour**
  - High priority: Sev1 + Sev2 = **$100,000 per hour**

  When it comes to downtime impacts, not every incident has a downtime impact, the downtime impact affects only a portion of the operation and customer base, and hotfixes are usually put in place so that operations and customers are up and running despite it taking **24 hours** or so for the average MTTR. For modeling of the composite organization, the impacts range from **0.0%** for low-priority issues, to **0.2%** for medium-priority issues, and **1.0%** for high-priority issues.

  Factoring in these downtime scope and timing impacts, this adds up to **51 hours** of annual unplanned downtime and **$4.4M** in annual downtime impact to business operations, customers, and brand perception. With FireHydrant, Severity 1 downtime is reduced 5 hours per year; this is the difference between 99.9% and 99.99% uptime, which is a big difference when it comes to today's expectations of always-on, always-working software. In ESG's modeled scenario, this has a business impact of **$642K recovered.**

- **Incident management tools.** To help address some of the incident management challenges, incident management tools are often developed or purchased to help automate key tasks, process steps, and integrations with other incident and problem management systems. Most often, organizations invest in homegrown management tools to address maturity shortfalls. These tools might be as simple as spreadsheets and documents or as complex as customized applications, feature buildouts, and integrations. These

homegrown investments can be more expensive than most organizations realize, and they often don't scale well to support growth and change. These homegrown tools often fall short, leaving too many manual tasks, swivel chair management between systems, and process friction. And these homegrown tools have a cost to develop, support, maintain, and evolve.

For our sample organization, we assume a small homegrown application developed to help guide the incident process, along with maintaining and supporting shared spreadsheets and documents, comes with an annual cost of:

- **400** annual person-hours on management, support, and maintenance, equaling **$28,128** in annual costs.
- **$22,500** in licensing and hosting costs for the homegrown application.

Many organizations interviewed for this analysis reported costs for homegrown and commercial solutions that were 4x these amounts, but ESG's modeled organization took a conservative approach.

Opportunity Costs of Incidents

When engineering time is driven into incident management and remediation, it is taken away from working on assets that assist revenue generation. This lost revenue is a missed opportunity and, while not directly reflected on balance sheets, has a true cost to the organization. These opportunity costs can be found in:

- **Lost developer time opportunity.** When engineers are interrupted to help address incidents, they are taken away from working on revenue-producing products and projects. Inefficiencies in incident response—such as engaging engineers who didn't need to be involved, or wasting engineers' time with too many incident scrum meetings, misdirected diagnoses, and wasted process steps—take these developers away from their revenue-producing roles. For our composite organization, Enterprise Strategy Group (ESG) estimated that opportunity cost per hour for engineers not working on incidents instead of projects is **$304**, a **5x** uplift over the engineering salary. For our composite organization with 1,500 engineers, spending an estimated 0.4% of their time on incidents, the annual cost of the lost developer time opportunity is:
  - **13,892** person-hours spent on incident response per year instead of development.
  - **7.4 FTEs** on incident response per year instead of development.
  - Total annual opportunity cost of **$4,221,986.**

  With FireHydrant, this lost time is **reduced by 10%,** providing a created work benefit of **$422K** per year.

- **Engineering ramp-up.** When there is a lack of procedure documentation, guides, and playbooks, it is difficult for a new engineer to come up to speed in a reasonable time frame. Because DevOps turnover is relatively high for most organizations, getting engineers up to speed quickly is important but difficult in a reactive, ad hoc, manual incident response environment.

  For our composite organization, the annual cost of ramp-up of lost opportunity is:
  - **20%** new engineers as additions and replacements each year, which can be much higher in some organizations. There are **300 new engineers annually** for our composite organization.
  - **48-week** ramp-up duration, on average, for incident response, with **45%** effectiveness during the ramp-up time.

"For us, the investment was essentially a slice of an engineer's salary if we're spending that per year. In return, we are getting around 5x or so in benefits. Instead of implementing a tool like FireHydrant, we could have thrown some resources at the challenge, like assigning three people or so to do the oversight, the wrangling, the processing. When it was time for FireHydrant renewal, the discussion was an easy one. We're not going back to the Dark Ages."

- **0.5%** of time spent on incident handling.
- Equivalent to **1,277** wasted person-hours and **0.7** FTEs.
- **$90K** in lost opportunity cost from ramp-up inefficiencies each year.

Customers interviewed by ESG shared that their ramp-up time for new engineers decreased from 48 weeks to 19 weeks with FireHydrant. This leads to an **annual savings of $53K** in our sample organization.

Cultural Drain of Incidents

With a fire drill on each incident declaration and process, along with interrupts to their daily mandates and schedules, engineers can quickly get burned out, leading to disengagement and higher-than-anticipated turnover. Not all turnover can be mitigated, but incidents can certainly add up and tax engineering patience.

"Since FireHydrant, we work better with our business groups. IT and business teams used to always be at odds over incidents. Now, we are able to keep the right people on the business side informed of issue severity and progress."

In our composite organization with 1,500 engineers, turnover is high and each replacement is expensive:

- **10%** annual voluntary turnover (team members leaving on their own for other opportunities).
- **One-half** of fully burdened salary or **$57K** to replace each lost team member.
- **$8.6M** in annual impacts from turnover.

In customer interviews, Enterprise Strategy Group found that organizations can reduce their voluntary turnover in engineers by 5% due to the better work culture brought by the collaborative environment of FireHydrant. This savings equates to an **annual $454K** benefit based on our sample company parameters.

Additionally, interviewed customers shared stories of how their IT teams are working with the business groups in a more strategic way with FireHydrant. Much of the friction that existed previously has been eliminated since their migration to FireHydrant.

Enterprise Strategy Group Analysis

Enterprise Strategy Group leveraged the information collected through vendor-provided material, public and industry knowledge of economics and technologies, and the results of customer interviews to create a three-year TCO/ROI model that compares the costs and benefits of FireHydrant with a homegrown solution. Enterprise Strategy Group's interviews with customers who have recently made the transition, combined with experience and expertise in economic modeling and technical validation of incident management, helped to form the basis for our modeled scenario.

Our model scenario organization is a high-tech company with 5,000 employees, 1,500 of which are engineering team members. These engineering team members create new functionality in addition to supporting issues with current code. They manage 51 total incidents per month, as shown in Table 1.

Table 1. Before FireHydrant Breakdown of Issues (Per Month)

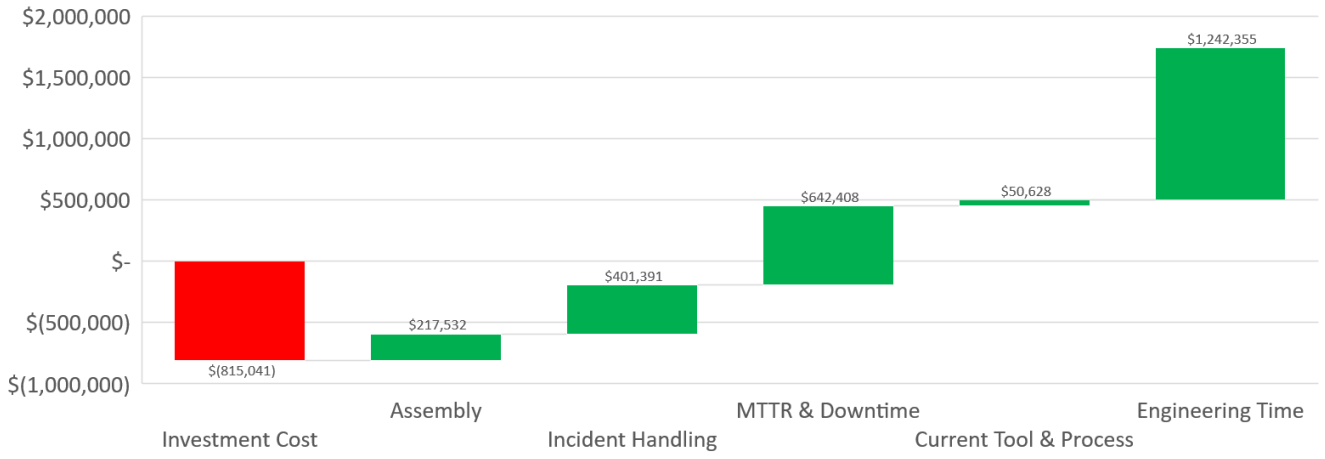
Severity	Number of Incidents	Average Number of Responders	Average Hours per Responder	Total Annual Hours	Total Response Labor Costs	Average MTTR (Hours)
1 & 2	14	8	8	10,752	$756,094	25
3 & 4	16	5.7	6.5	7,114	$500,237	24
5 & 6	21	5	2	2,520	$177,210	23

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

This organization's incident handling system is homegrown, and it takes 400 hours per year to manage, support, and maintain this developed solution. It has an annual voluntary turnover rate for engineers of 10%, and it takes new engineers 48 weeks to be at full speed. During this ramp-up period, they are 65% as effective as a fully ramped engineer. The organization's investment in FireHydrant is $630K per year, with initial implementation costs of $185K.

Figure 3 shows the waterfall view of the first year impact of FireHydrant on this sample company.

Figure 3. Waterfall View of Year 1 Impact of FireHydrant



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

As seen in Table 2, the three-year cashflow has $6.06M of cumulative net benefits and an ROI of 210%. For net present value (NPV) calculations, a discount rate of 11% is used. NPV is the value of future benefits in today's dollars.

Table 2. 3-year Financials for FireHydrant

Severity	Initial	Year 1	Year 2	Year 3	Total
Benefits	0	$2,022,490	$2,143,839	$2,272,469	
Cumulative Benefits	0	$2,022,490	$4,166,329	$6,348,798	$6,438,798
Investment Costs	$185,041	$630,000	$630,000	$630,000	
Cumulative Investments	$185,041	$815,041	$1,445,041	$2,075,041	$2,074,041
Total Net Benefits	**$185,041**	**$1,392,490**	**$1,513,839**	**$1,642,469**	
Cumulative Net Benefits	**$185,041**	**$1,207,449**	**$2,721,288**	**$4,363,757**	**$4,363,757**
ROI	**210%**				
NPV Savings	**$3,499,080**				
Payback Period	**5 Months**				

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Conclusion

Incident management creates challenges for most organizations that increase in complexity as a company grows in size, volume, or number of locations. Firms find that their homegrown or typical off-the-shelf solutions are unable to scale. The result is usually a mess of nonrepeatable processes that are inefficient and leave key people out of the workflow or randomize others by including them in an incident that is not relevant to their position. Far too many important issues get drowned out by incomplete and inefficient processes.

Enterprise Strategy Group (ESG) analyzed the impact that FireHydrant can have on IT and business goals by streamlining incident management and resolution. ESG found that companies deploying FireHydrant can realize consistent and measurable benefits, including reducing explicit costs, lowering the lost opportunity costs of incidents, and lessening the cultural drain of incidents. Additionally, customers interviewed by ESG shared stories of how FireHydrant has turned the often contentious relationships between business and IT groups to one that is collaborative. One customer summarized it perfectly by stating, **"We used to spend way too much time getting the right people in the flow of communications and rarely had the correct team fully included. Our business leaders were usually out of the loop and, even worse, were often asking us about revenue-impacting issues that our IT leaders had little information to provide. FireHydrant has completely changed this by giving us instant assembly processes that are defined and repeatable. Our processes used to be quite noisy; FireHydrant has reduced the noise. The right people are included, every time, and the people who are impacted by the incident can always get accurate and succinct updates."**

ESG's analysis included creating a detailed financial model to project the cost and benefits across a sample company. This sample company had a three-year benefit in moving to FireHydrant of $4.36M and an ROI of 210%. Additionally, ESG found that every customer interviewed reported unmeasured gains in employee and customer satisfaction, team collaboration, and the ability to keep senior leadership aware of issue risks and status.

ESG has evaluated the projected costs and benefits of FireHydrant across companies of multiple types and sizes and found them to be consistent in all considered scenarios. If your company is looking for an incident management solution, ESG strongly recommends that you consider FireHydrant full-cycle incident management.

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