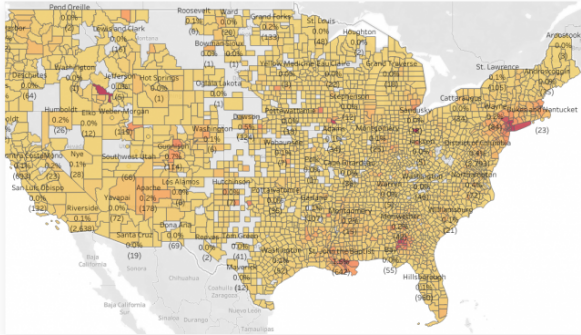


# Automating COVID-19 Data Storytelling

In April 2020, Insight Rocket launched its free, daily, hyper-local COVID-19 news service. Since then, we've shared over 100,000 COVID-19 data stories with hundreds of subscribers. When we first launched, infection rates were sky high near us in New Jersey, so we experienced firsthand the challenge of deciding how often our family could safely leave home. News reports and websites gave state totals, but what we needed was in-depth, local info. We soon realized that Insight Rocket's automated data storytelling platform could help both us and others navigate the ups and downs of the crisis by delivering concise, timely, trustworthy local data.

InsightRocket

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### Sign Up For Daily County Updates

State: \*

County / Parish: \*

Name: \*

Email: \*

Organization: \*

\* Accept [Terms & Conditions](#): ☐

### RECENTLY REQUESTED COUNTIES

CALIFORNIA

Orange County, CA

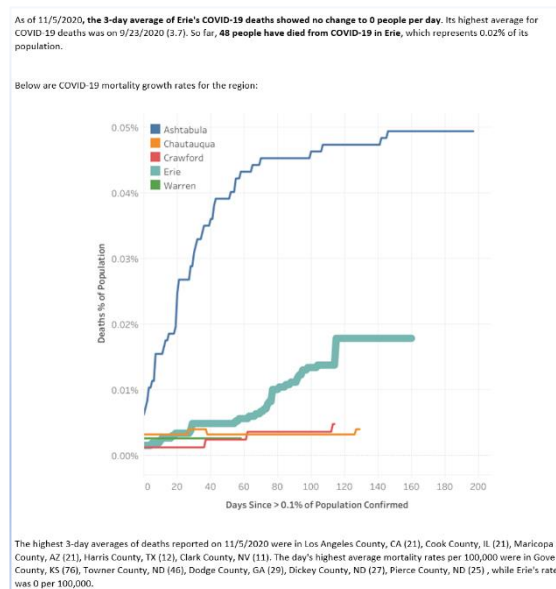
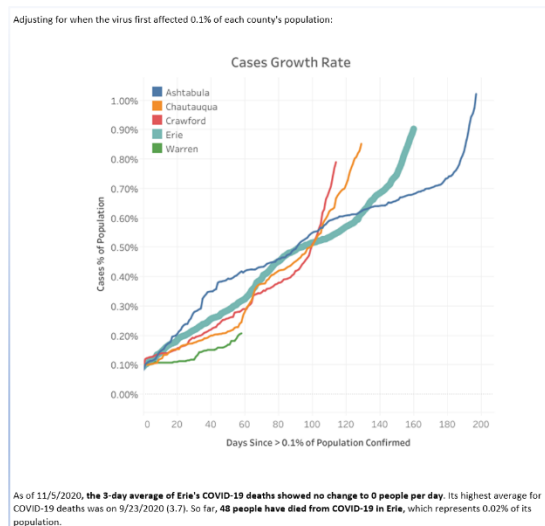
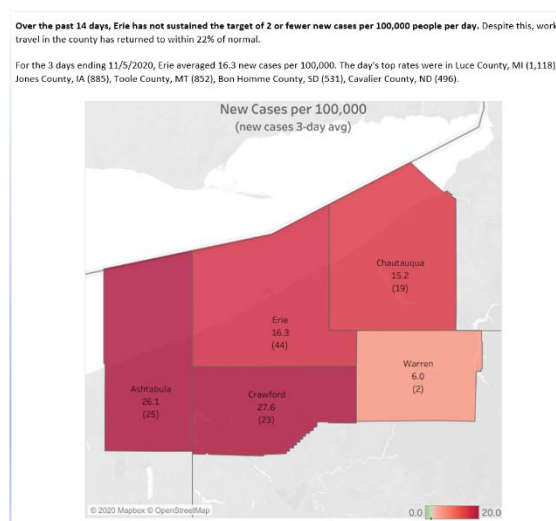
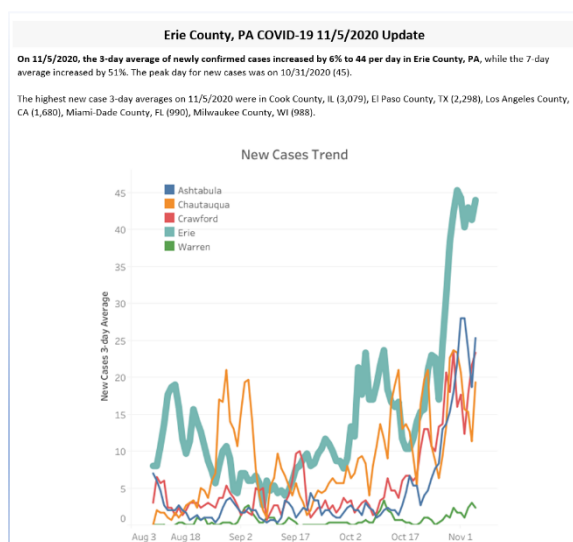
Unlike the interactive COVID-19 dashboards provided by Johns Hopkins and others, our goal was to do all of the legwork for our busy subscribers by sending them daily, mobile-friendly emails. While

dashboards are great for self-guided exploration, people are often too busy to explore, instead preferring delivery of just the news they need. This parallels what we do for our enterprise clients: boosting analytics adoption by making it *faster* and *easier*.

For COVID-19, we created an Insight Rocket story template that brings together data and vizs spanning multiple data sources and Tableau workbooks. Every morning, the Insight Rocket platform follows that template to author distinct data stories for each of hundreds of US counties. What's more, those stories automatically vary between daily, weekly, and monthly views, as well as based upon the severity of the virus in that county on that day.

## Automating Storytelling for Erie, PA

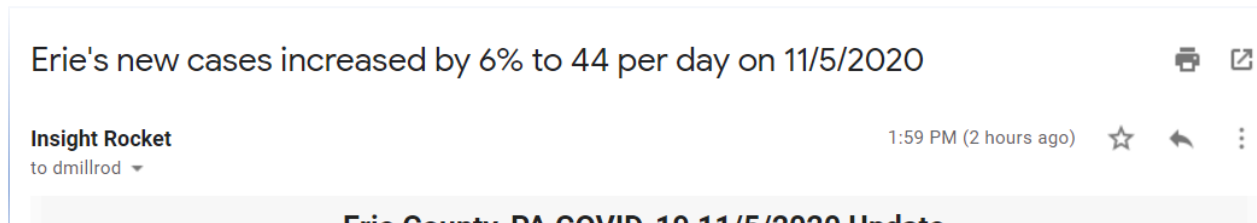
Here are thumbnails of a recent story on Erie, PA to give a feel for its flow and length:



Let's zoom in section by section to reveal some of the magic of Insight Rocket's automation.

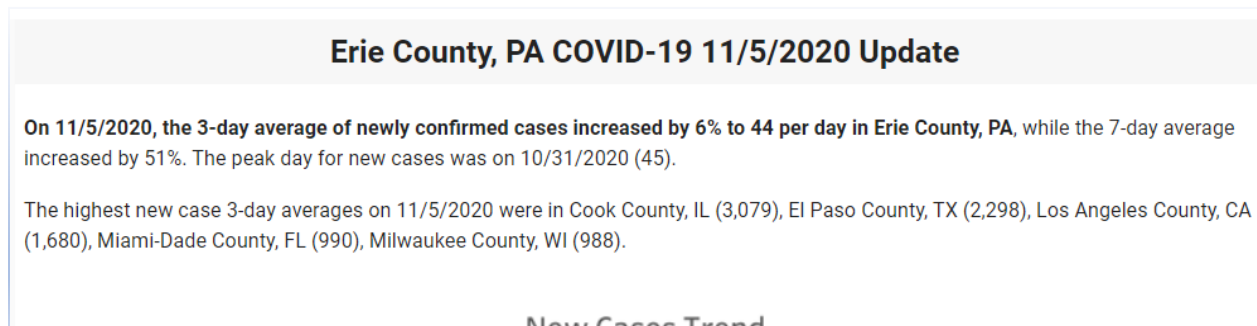
### Narrative: The Heart of Good Data Storytelling

The storytelling begins right away with a dynamic subject line that informs subscribers even before they open the email:



Within the subject line, "...cases increased by 6% to 44 per day" was generated by Insight Rocket querying the same Tableau chart twice and comparing. The Insight Rocket storyteller achieved this date comparison without the need for changes to the existing Tableau dashboard, table calculations or LOD expressions.

Next, the email concisely provides context by comparing three different time periods for Erie, PA, as well as sharing the day's highest totals throughout the US:

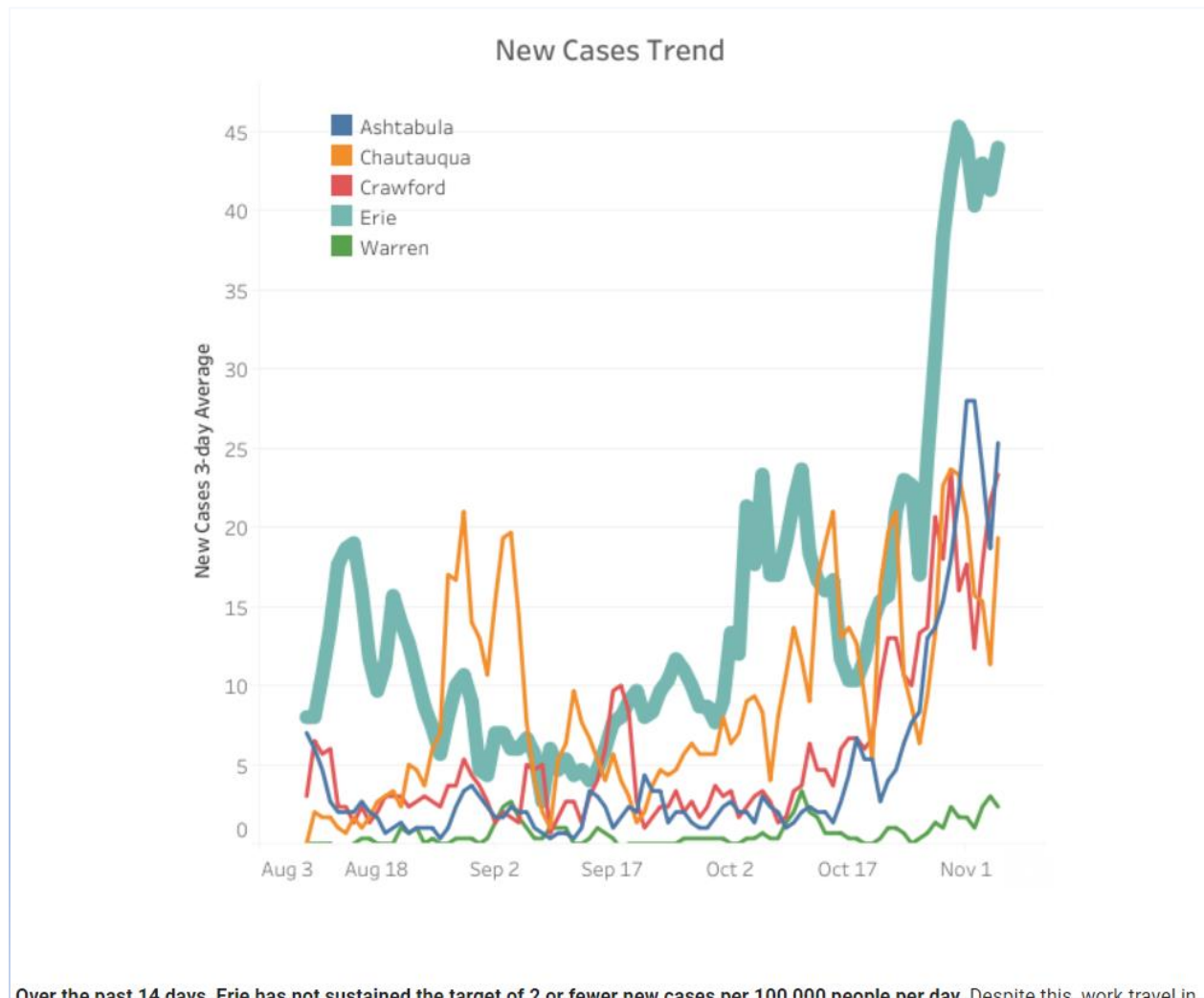


We begin with narrative because that's the heart of good data storytelling. Then, charts illustrate and amplify that narrative. Looking at this story in edit mode, we can see any Insight Rocket generated text highlighted in yellow. The words and stats in a single sentence can easily span multiple time periods, data sources, and workbooks:



## Integrating Dynamically Filtered Charts

Now that the reader has that narrative context, our first chart:



When a subscriber requests a county like Erie, a clone of the master story template is created that filters all Tableau-derived narrative and vizes to that county. That explains Erie, PA being selected in the above chart, but how did its nearby counties also get selected? That was accomplished through Insight Rocket's powerful Data Point Filtering. While the case counts come from The NYTimes, we have a separate Census Bureau Tableau workbook listing all of the geographically adjacent counties. So as per the storyteller's instructions, Insight Rocket looks up the adjacent counties for Erie in the Census Bureau workbook and then based upon that, multiselects the county filter in the NYTimes viz. For clarity, the focal county (Erie) is highlighted by setting a Tableau parameter that controls line size.

## Conditioning Phrases on Data Thresholds

Next, we switch back to narrative:

**Over the past 14 days, Erie has not sustained the target of 2 or fewer new cases per 100,000 people per day.** Despite this, work travel in the county has returned to within 22% of normal.

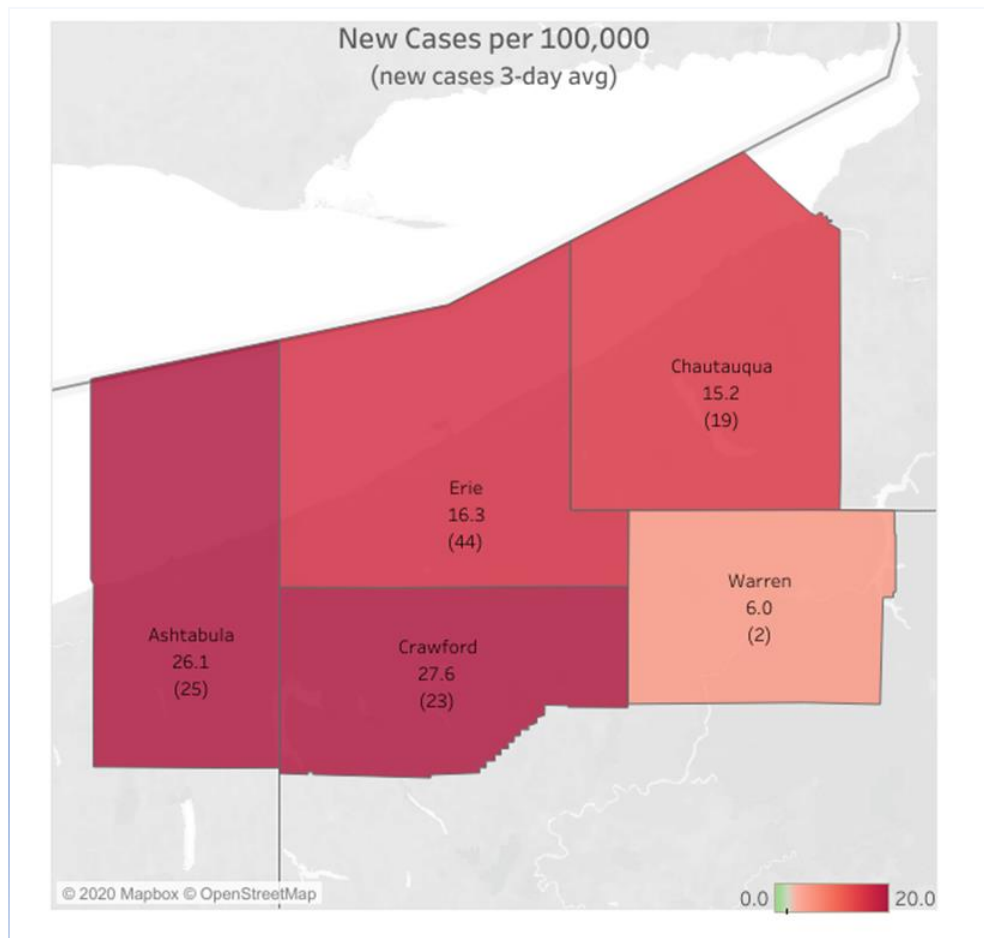
For the 3 days ending 11/5/2020, Erie averaged 16.3 new cases per 100,000. The day's top rates were in Luce County, MI (1,118), Jones County, IA (885), Toole County, MT (852), Bon Homme County, SD (531), Cavalier County, ND (496).

New Cases per 100,000

The bold disclaimer that Erie hasn't sustained its target is an example of dynamic narrative, where different phrases are generated depending upon the storyteller's thresholds. Three different phrases can appear in that spot, all depending upon whether the county has achieved the goal, is getting close, or (like Erie, PA) has not.

The next phrase, "Despite this, work travel in the county has returned to within 22% of normal" is an example of tying together disparate data sources using dynamic narrative. The data about cases comes from the NY Times workbook, while the data on work travel is from a Google-sourced workbook. This warning about travel patterns only appears when both cases are very high and work travel is nonetheless worrisomely back to within 25% of normal.

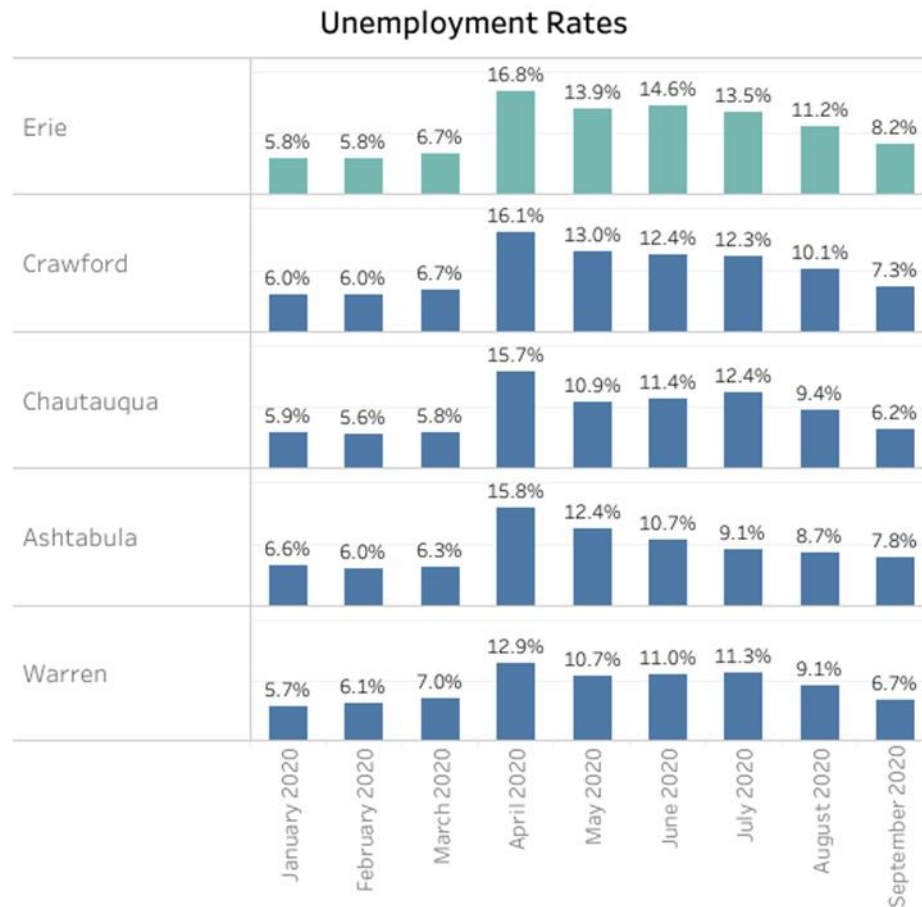
Then this map also benefits from Insight Rocket dynamic filtering based on the census workbook:



## Weekly, Monthly, and Special Editions

The remainder of this daily story leverages similar techniques. On Sundays though, weekly overviews are provided, and on the first day of each month we zoom out and share monthly trends. Solely on days when it is released, county-level unemployment data is woven in from yet another data source:

**In September 2020, Erie's unemployment rate was 8.2%.**



## Creating Dynamic Text

Storytellers can leverage data from any viz on their Tableau Server or Tableau Online using the Insight Rocket data point creator, where any Tableau dimensions and measures can be combined to create narrative, conditional story logic, dynamic filters, and data tables:

The screenshot displays the Insight Rocket data point creator interface. At the top, a green preview strip shows the generated narrative: "In the 3 days from Nov 13, 2020 to Nov 15, 2020, the % change in Erie County, PA Cases Difference was +2.89% vs. the prior period." Below this, the configuration panel is divided into two main sections: "dimensions:" and "measures:". The "dimensions:" section includes fields for Date, County Name, County State, Ctyname, ATTR(Month), and Max. Date, along with (IR) Min Date, (IR) Max Date, and (IR) Period. The "measures:" section includes County Match, Cases 3-d avg chg, Cases 3-day Average, New Cases/100000, Avg. Cases Difference MR3, Max. nextday, Max. Population, Max. weekday, Cases Difference, and (IR) Row Count. To the right of these sections, there are additional configuration options for period (most recent, to date, as of), qualifiers (change in, % change in, % total, top #, bottom #, by, aggregate), operators (is, is below #threshold, is above #threshold), compare (vs. prior period, DoD, WoW, MoM, QoQ, YoY), and format (brief, search & replace, % sign, \$ sign, x 100, #decimals, raw).

In the above example, the three-day average of cases (to smooth out delayed reporting) is compared with the prior period by Insight Rocket and returns dynamic narrative, as shown in the green preview strip. The source of this data may be any type of Tableau visual and doesn't need to contain text.

## Scheduling and Scale

Sending hundreds of localized, daily emails spanning multiple data sources is a real logistical challenge. We want to deliver these stories as soon as possible, but the time when data becomes available varies daily. Fortunately, we've been able to pair two Insight Rocket capabilities to make this carefree. The first is adding an "IF" statement to the story template that confirms full data availability within Tableau. The second is "Attempts", which tells our scheduler to retry every 30 minutes (or any interval you choose) until that condition is met:

The screenshot shows the Insight Rocket scheduling and scale configuration interface. At the top, there is a red button labeled "Add Event". Below this, the "Next run:" field is set to "11/18/2020". The "Time:" field is set to "10 :46 AM". The "Repeat:" field is set to "daily". The "Attempt:" field is set to "every 30 min". The "Stop date:" field is empty. The "Stop time:" field is set to "12 :00 AM". Below these fields, there is a text box explaining the scheduling logic: "The event will start attempting at the specified time and attempt frequency until it succeeds. When it does, it will reset for the next day / week / month if there's a repeat setting. If it doesn't succeed, it will stop attempting after the specified stop date and time. If all of the story text is preceded by conditional data points, they all have to return true for the event to succeed." At the bottom, there are two dropdown menus: "First:" set to "Update in place" and "Then:" set to "Leave state unchanged".

This ensures that no incomplete stories are ever sent, as well as that they are delivered as soon as possible.

Once data does become available, we're eager to create and send these hundreds of stories quickly. This is made possible by Insight Rocket's scalable enterprise architecture. The platform automatically distributes load across all available CPUs, and additional servers can be added and subtracted seamlessly at any time. By adding virtual servers only during peak times, we minimize hosting costs while delivering news while it's most timely.

## Results

Our subscribers have included mayors, county health departments, TV newsrooms, and pharma analysts. One shared "I didn't realize it was so dire here ... I'll talk to my bosses about working remotely." Another kindly wrote that "I've been using this as my source of truth!" If you too would like to subscribe or view recent stories, feel free to do so at <https://covid19.insightrocket.com>.

While this COVID-19 project showcases several powerful Insight Rocket capabilities, even more is possible. Story content can extend beyond Tableau to include MS Office docs, Google docs, and even other applications. Delivery of those stories can go beyond mobile emails to include branded PowerPoint decks, PDFs, and our integrated, highly customizable web portals.

It's equally true that our enterprise clients frequently benefit from simpler stories than this COVID-19 example as well. Even with a single data source, we've had customers tell us of quarterly business review preparation shrinking from days to minutes.

If you use Tableau Server or Tableau Online within your organization, Insight Rocket's powerful storytelling and automation can boost your adoption and save countless hours of analyst effort. You can find out more at [www.insightrocket.com](http://www.insightrocket.com) or by contacting us at [info@insightrocket.com](mailto:info@insightrocket.com).

