

EHS Masterclass: How to Use Data to Improve Compliance and Prevent Risk

How Companies Digitize the Compliance
Journey with Mapistry



May 2022

Today's Speakers



Ryan Janoch | Co-Founder



Courtney Wilson | Sr. Sales Engineer

Agenda

Introduction	10:00 - 10:05 AM
The Cost & Cause of Non-Compliance	10:05 - 10:25 AM
Best Practices for Improving Compliance & Preventing Risk	10:25 - 10:40 AM
Building a Business Case for Better Data & Developing a Roadmap	10:40 - 11:00 AM
Bonus Demo of Mapistry's Data Solution	11:00 - 11:05 AM

All times are in Pacific Standard Time (PST) – Times may vary depending on audience engagement

The problem



Non-Compliance is
Costly



Data
is **Siloed**








Resources
are **Limited**

Breaking it down:

The Cost of Non-Compliance.

Types of Penalties

There are many forms that non-compliance penalties can take when it comes to **impacting your organization's bottom line**:

-  Fines
-  Civil Lawsuits
-  Brand Damage
-  Employee Relationship Degradation
-  Facility Closure

Potential Penalty Costs

\$81,540
Per Day

**Haz Waste
(RCRA)**

\$37,500
Per Day

SPCC

\$59,973
Per Day

**Water
(CWA)**

\$109,024
Per Day

**Air
(CAA)**

\$62,689
Per Day

**Tier II
(EPCRA)**

Internal costs on consultants & attorneys are typically 2X the external cost

Source: <https://www.govinfo.gov/content/pkg/FR-2022-01-12/pdf/2022-00349.pdf>

Compliance failures damage reputations

THE ECONOMY > ENVIRONMENT

Wal-Mart Fined \$110 Million Over Hazardous Waste

The world's largest retailer pleads guilty to dumping hazardous chemicals in city trash bins and sewer systems.

Agence France-Presse
MAY 28, 2013

Formosa Plastics set to pay \$50 million in pellet pollution lawsuit

It's the largest settlement for a Clean Water Act lawsuit filed by private citizens in the history of the United States.

Clare Goldsberry | Nov 26, 2019

NEWS

DuPont, Chemours, Corteva to pay Delaware millions over damage from PFAS or 'forever chemicals'

Jeff Neiburg
Delaware News Journal

Published 4:32 p.m. ET July 13, 2021 | Updated 7:02 p.m. ET July 13, 2021

\$1.9B charged in Environmental Violations in 2021

MICHIGAN

State, townships near \$69.5M settlement with Wolverine shoe maker over PFAS contamination

Keith Matheny
Detroit Free Press

Published 6:38 p.m. ET Dec. 10, 2019

Indiana cement plant to pay millions in fines, upgrades over alleged Clean Air Act violations

Sarah Bowman
Indianapolis Star

Published 1:51 p.m. ET June 4, 2021 | Updated 4:13 p.m. ET June 4, 2021

Government Business Safety Eric Miller | Senior Reporter
March 9, 2020 10:45 AM, EDT

EPA Proposes Tougher Rules to Monitor Runoff at Transportation Facilities

News Releases from Region 09
U.S. EPA fines three Southern California-based companies \$170,000 for hazardous waste violations

12/16/2019

LOCAL | ENVIRONMENT

LyondellBasell companies agree to pay \$3.4M fine after feds allege illegal air pollution

Emily Foxhall, Staff writer
Oct. 14, 2021 | Updated Oct. 14, 2021 7:42 p.m.

XAVIER BECERRA
Attorney General

Attorney General Becerra Announces \$11 Million Settlement against AutoZone for Illegal Disposal of Hazardous Waste Statewide

1 <https://www.goodjobsfirst.org/violation-tracker>

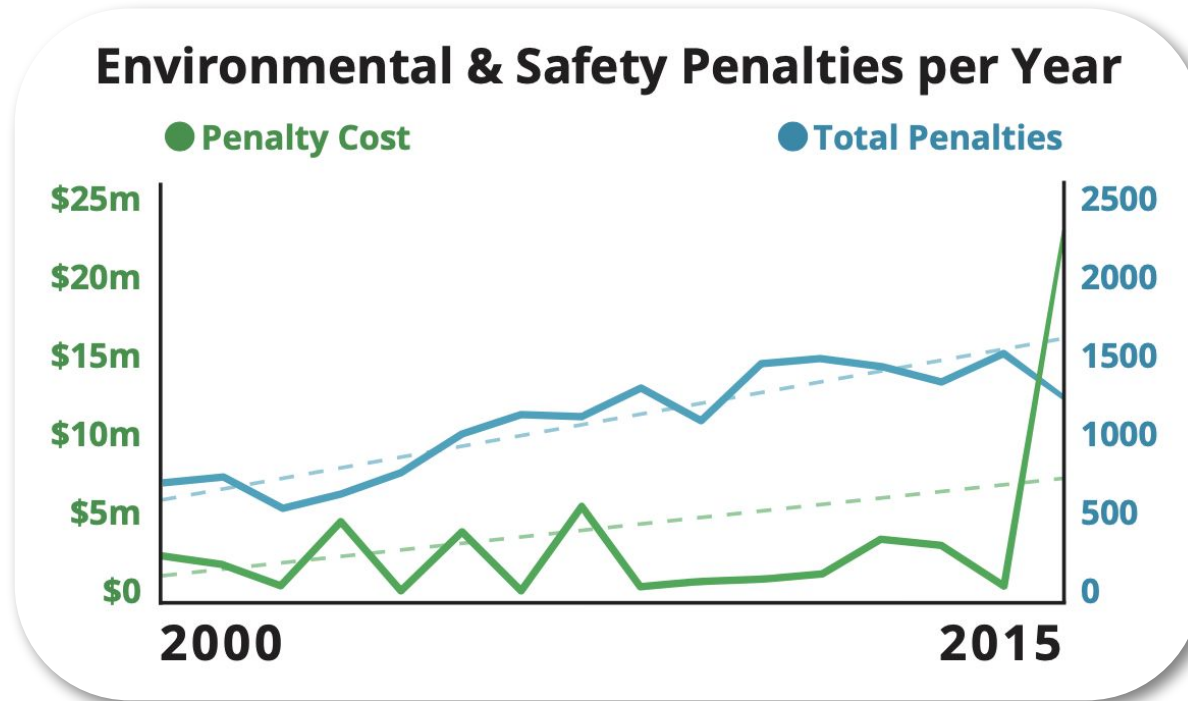
Breaking it down:

The Cause of Non-Compliance.

The Top 5 Issues EHS Leaders Face Today:

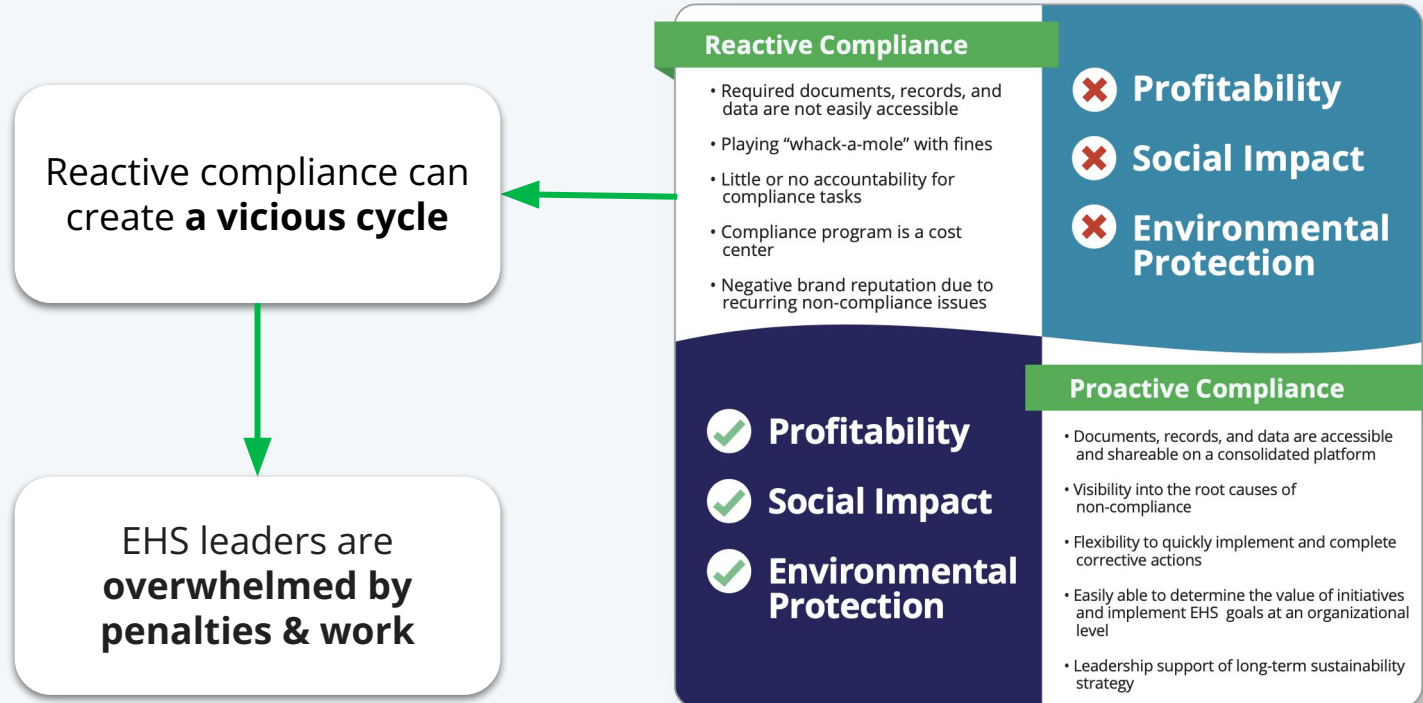
- **Not enough time** to manually enter data
- Decentralized and disconnected data sources → **No visibility**
- **Stringent air and water permits**
- Regulatory or 3rd Party Scrutiny → **Litigation & fine risks**
- Relying on **too many tools** (Outlook, Excel, paper, DIY forms, etc.)

Analyzing Trends – Average EHS Penalties



Data sourced from The Corporate Research Project's [Violation Tracker](#) database

Is your Approach **Reactive** or **Proactive**?



Using Data as a **Proactive** Tool

Lead with a **more proactive approach to compliance** by:

- **Simplifying data capture** — upload, integrate or capture via a mobile app
- Analyzing data to **understand common pitfalls** and deficits
- Using data to **create a culture of EHS excellence** within the company

✓ **Profitability**

✓ **Social Impact**

✓ **Environmental Protection**

The Data Problem:

What Can and Does Go Wrong.

Data Collection Problems

- Paper records are **not accessible** anywhere
- Scanning forms and manual data entry is **too much work**
- **Missing data** from operators or forms are lost in trucks
- Manual entry results in **data transcription errors**
- **Opportunity cost** for EHS Managers don't have time for high value activities (training & problem solving)

Types of Data: **Not Just Numbers**

Qualitative	Quantitative
<ul style="list-style-type: none">● Inspections● Observations● Corrective Actions● Photos● Maps	<ul style="list-style-type: none">● Lab Reports● Production● Material Usage● Emissions● Flow● Sampling Results

A lot to keep track of...

Date of Inspection (Month/Day/Year)				
Name of Inspecting Person				
1)a) Is Abated Equipment Operating under Negative Pressure?				
1)b) Is Baghouse Properly Maintained & in Good Operating Condition?				
2)a) Does the Baghouse have a Device for Measuring Pressure Drop Across the Baghouse?				
2)b) Is the Pressure Device Plugged? If so, Unplug and Note with "PLUGGED" and/or "CLEANED". This must be performed Quarterly				
3)a) What is the Pressure of the Baghouse (in Inches of Water)?				
3)b) Is there any Evidence of a Leak? If there is a Plume of Dust in the Stack or a Pressure Drop. If so, Check for Tears, Leaks, and Scuffs, and Repair				

sheet # _____

Inspection Log --- TubeJet® Dust Collector

Baghouse # _____ Model No. _____

Date				
Time				
Inspector				
Daily				
Record Differential Pressure (dP)	¹ wc	² wc	³ wc	⁴ wc
Is timer sequencing, row by row?	Y / N	Y / N	Y / N	Y / N
Are solenoids operating?	Y / N	Y / N	Y / N	Y / N
Are diaphragm valves firing?	Y / N	Y / N	Y / N	Y / N
*Hopper discharge device operating?	Y / N	Y / N	Y / N	Y / N
Any visible stack emissions?	Y / N	Y / N	Y / N	Y / N
Weekly				
Record compressed air pressure.	PSIG	PSIG	PSIG	PSIG
Clean compressed air filter trap.	()	()	()	()
Check tubesheet for bag leaks.	()	()	()	()
Check that hopper is empty.	()	()	()	()
Monthly				
				Y / N
				()
				()
				()
				()
				()
				()
				()
				()
				()
				()

EQUIPMENT TO BE INSPECTED OR WORKED ON	CONDITION TO BE CHECKED OR ACTION TO BE TAKEN	FREQUENCY	NAME	INSPC DATE	COND. C, R, P or OK
DUCTWORK	INSPECTION OF THE DUCT SYSTEM SHOULD BE MADE AND ANY SETTLED MATERIAL REMOVED BEFORE IT INTERFERES WITH THE AIRFLOW	QTRLY			
DUCTWORK	CHECK ALL DUCTWORK FOR EXTERNAL CRACKS, LEAKS, AND ABRASIONS THAT WOULD INTERFERE WITH AIRFLOW	QTRLY			
BLOWER FAN	CHECK SHEAVES AND BELTS FOR WEAR, DAMAGE	QTRLY			
BLOWER FAN	GREASE BEARINGS	QTRLY			
BLOWER FAN	CHECK IMPELLER (WEAR, CRACKS, BUILD-UP)	QTRLY			
COLLECTOR SUPPORTS	INSPECTION AND TIGHTENING OF THE BOLTS	YEARLY			

Traditional Methods of Data Capture

Many EHS leaders use these methods to input and store their data:

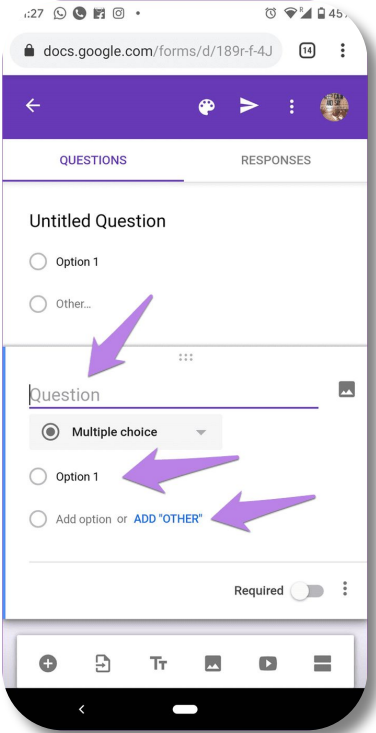
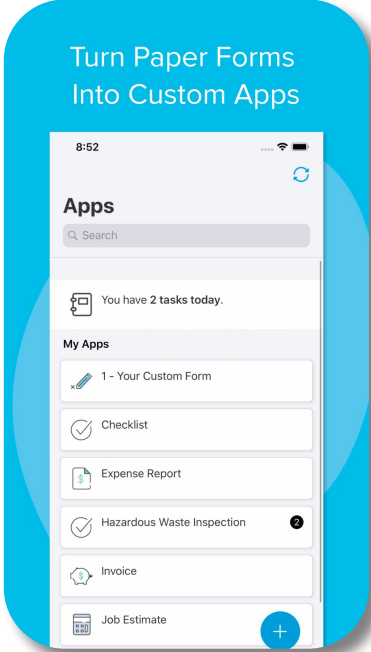
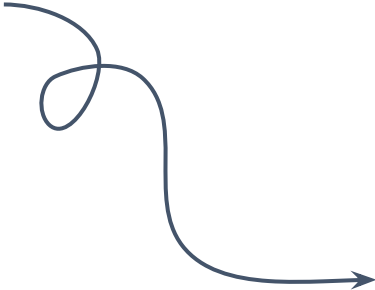
- Paper
- Word/Excel
- Scanned File Storage
- Google Forms/DIY Apps
- Sensors



Look familiar?

Example: Digitizing Forms

Often due to small budgets, EHS Leaders **get creative with digital tools**



Example: Using an API

Application programming interface (API) allow your data to move directly from one place to another **without manual interaction**.

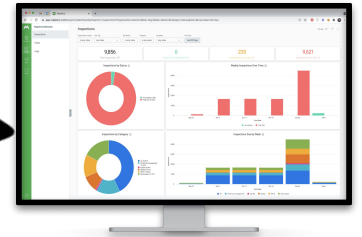
➤➤➤ Eliminates the need to upload data to multiple locations!

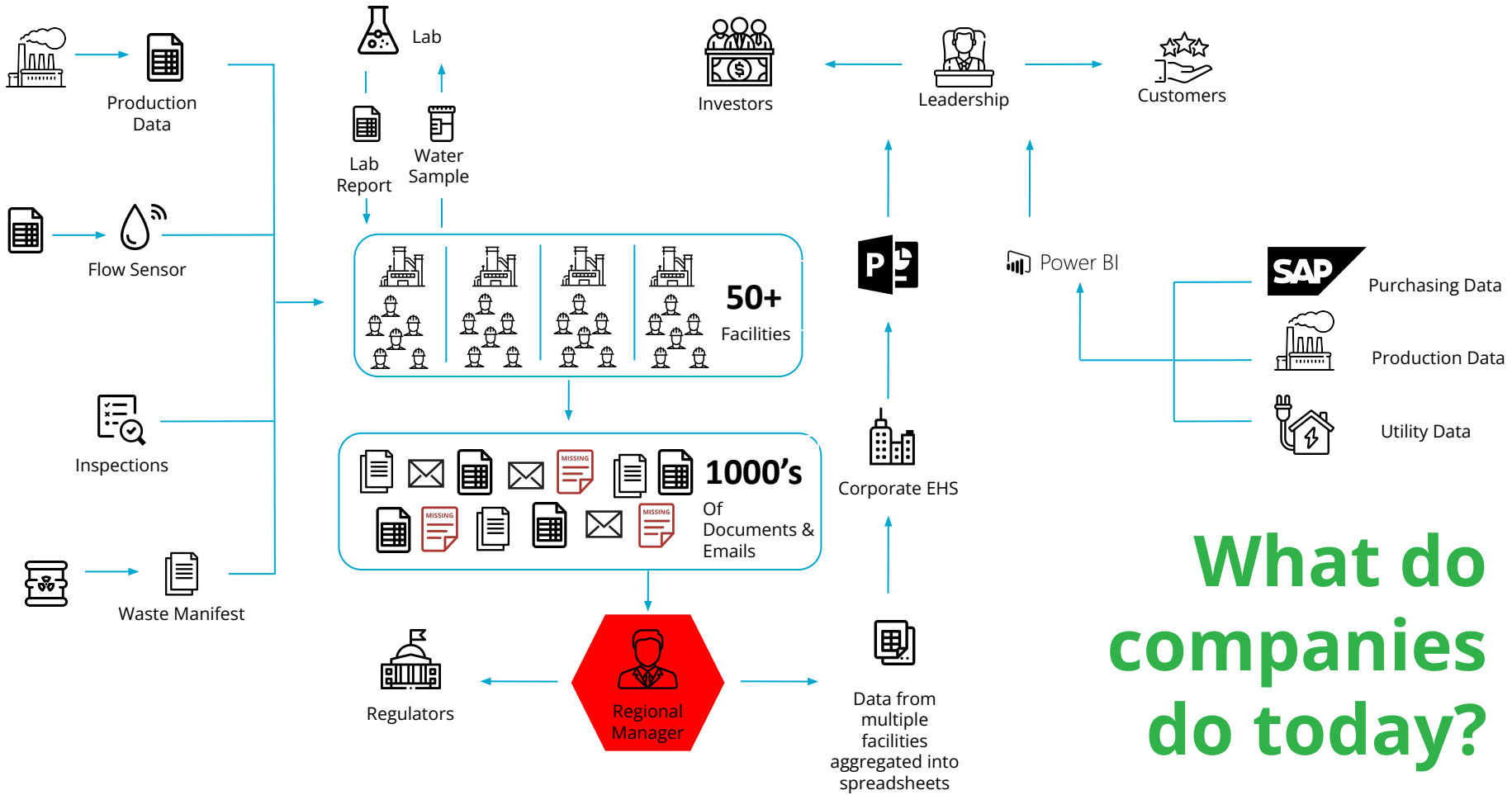
DATA

```
sqlrental select title, release_year, length, replacement_cost from title
sqlrental-4 where length > 120 and replacement_cost > 29.99
sqlrental-4 order by title desc;
title | release_year | length | replacement_cost
-----|-----|-----|-----
west lion | 2006 | 159 | 29.99
virgin daisy | 2006 | 179 | 29.99
tomb raider | 2006 | 172 | 29.99
tracy cider | 2006 | 142 | 29.99
some thing | 2006 | 165 | 29.99
stacker liaisons | 2006 | 179 | 29.99
sassy richie | 2006 | 154 | 29.99
river outlaw | 2006 | 149 | 29.99
right crane | 2006 | 153 | 29.99
quest mission | 2006 | 171 | 29.99
posidon forever | 2006 | 159 | 29.99
loathing legality | 2006 | 146 | 29.99
lawless vision | 2006 | 181 | 29.99
jingle rappers | 2006 | 124 | 29.99
jericho mule | 2006 | 171 | 29.99
japanese bun | 2006 | 135 | 29.99
glimmer boxed | 2006 | 161 | 29.99
flints garden | 2006 | 145 | 29.99
fantasia paris | 2006 | 112 | 29.99
extraordinary conqueror | 2006 | 122 | 29.99
eyesome craft | 2006 | 151 | 29.99
dirty ace | 2006 | 147 | 29.99
clyde theory | 2006 | 139 | 29.99
clockwork paradise | 2006 | 141 | 29.99
ballroom mockingbird | 2006 | 173 | 29.99
(25 rows)
```

INTERFACE

INTERACTION





What do companies do today?

Comparing Data Management Solutions

	Pros	Cons
Paper & Physical Storage	Don't need to implement new technology	Reactive solution, with opportunities for human error
MS Office (Word/Excel)	Can calculate and visualize large amounts of data	Isn't built for EHS use cases; data input/output is clunky
Google (Docs/Sheets/Forms)	Collaborative tools with cloud-based storage	Low volumes of data; manual analysis options
EHS Software	Single system with complete visibility	Initial implementation phase can be time consuming

A Centralized Approach:

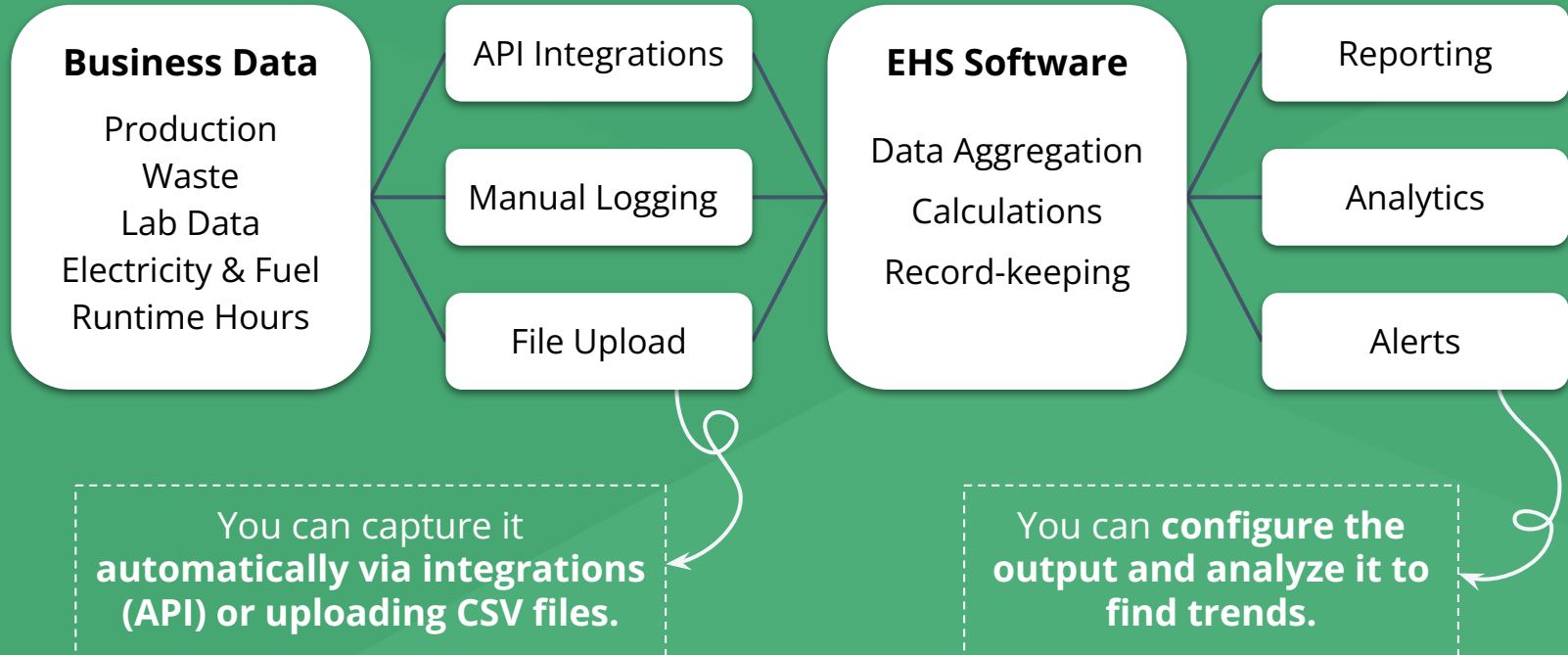
Creating Order and Efficiencies.

Pros of Using a Dedicated EHS Platform

You will gain.....

- Automated and **Consistent Data Capture**
- **Efficient Calculations** & Visualizations of Data
- Endless Storage, Users, and **Sharing Options**

The Digital Solution

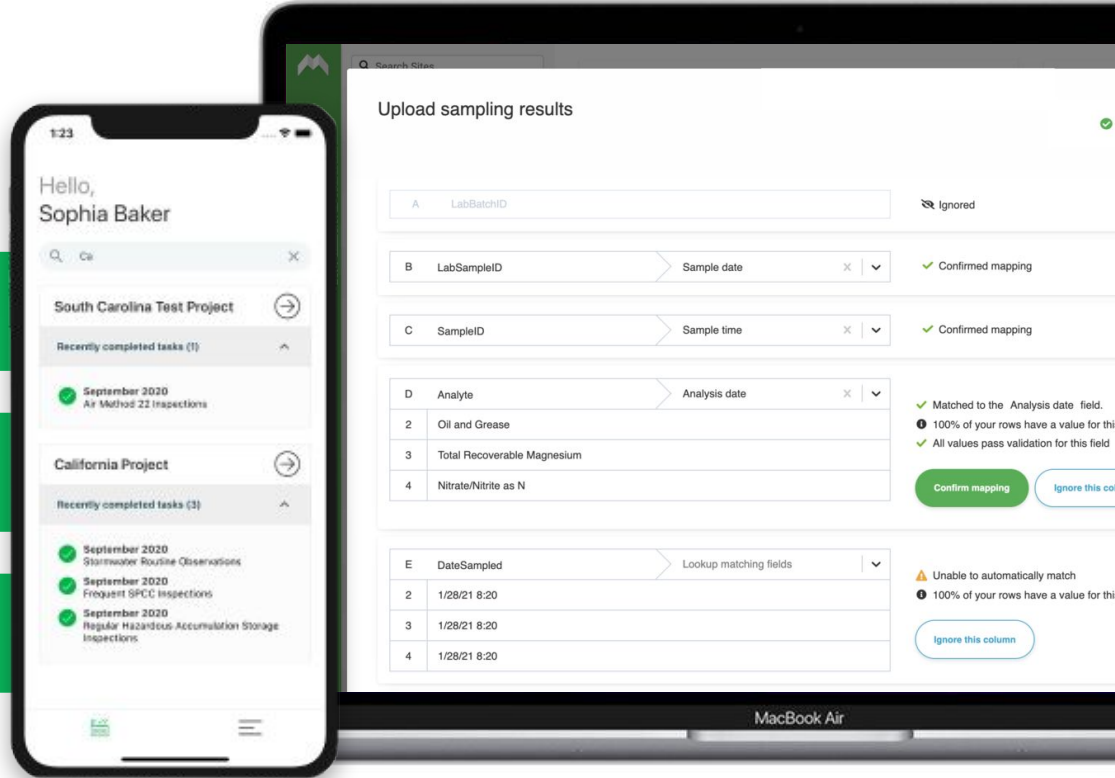


Data Capture

Mobile App

File Upload

API



Communicate

Reminders

Tasks

Alerts

The screenshot displays a web application interface for site management. At the top, there are search and filter fields for Organization Name, Sites, Site Name, and Event Date. Below these is a map of California with several site markers. A tooltip for a site named 'Fontana CA (SEDEMO)' shows it is 66.7% past due. Overlaid on the right is a mobile app interface titled 'Stormwater Routine Observations' showing a monthly calendar for 2019-2020. The calendar indicates that inspections were completed in January, February, and April, missed in May, and are scheduled for June.

Month	Status
JANUARY	Completed inspection
FEBRUARY	Completed inspection
MARCH	Completed inspection
APRIL	Completed inspection
MAY	Missed inspection
JUNE	Future inspection

Analyze

Detect Exceedances

Staff Accountability

Identify Risks

Dashboards
Data updated every 15 minutes

- Inspections
- Tasks
- Logs
- Log Values
- Water Results

Inspections

Organization Name: is Mapistry Demo | Site Name: is any value | Category: is any value | Inspection Name: is any value | Assignee: any value

15 Total Inspections ⓘ

13 Inspections Completed ⓘ

Warning - 5+ Weekly Inspections Are Past Due

Condition: Past Due Inspections | Is greater than | 5

Where to send it: Email | demo@mapistry.com

Frequency: Weekly | Day: Fri | Time: 05:00

Cancel | Save Alert

Inspections by Status

- Completed On Time 73.33%
- Completed Late 13.33%
- Past Due 13.33%

Status	Count	Percentage
Completed On Time	11	73.33%
Completed Late	2	13.33%
Past Due	2	13.33%

Digitizing Your EHS Data: **Key Steps Towards Success.**

Prepare

- **Identify potential data sources:** From basic inspections and corrective actions to utility bills to machinery.
- **Agree on an Approach:** Shared objectives; internal v. external tools; important capabilities; time to value; scheduling and bandwidth
- **Set the bar for data quality:** Success depends on consistent and accurate data.

Start Data Collection

- **Get your end users on board** with trainings, accessible equipment, and easy-to-use software
- **Digitize core compliance activities**, including inspections and tasks
- **Leverage historical data** by bringing together CSVs and other data sources into a single system of record

Automate Data Sources

- **Identify top areas** for automation and streamlining
 - **Production Data**
 - **Utility Data**
 - **Sensors**
- **Leverage vendor APIs** to integrate with unique data sources

Develop **Outputs**

- **Create** dashboards, reports, and visualizations
- **Set up** alerts and monitoring on known thresholds
- **Spend** time digging into the data to identify unique issues and opportunities
- ***Assess, iterate, and improve*** in partnership with IT!

Picking Software – What **Not** to Do

- Just Get an Email System....**Your staff will hate it!**
- **Only Use it for Tracking Tasks**...It should not just be a checkbox
- Ignore the time and **cost necessary to set up**
- **Skip getting leadership support** AND keeping them engaged

Questions to ask **Vendors**

- ❑ What percentage of customers implement **more than task tracking** during the first phase of implementation?
- ❑ Can air and water data be easily added and analyzed?
- ❑ Tell me about your setup and training process? Does a consultant do that or is it an **in-house team**?
- ❑ **How long did it take** the last company our size to have everyone completing inspections/tasks?
- ❑ What are the **top challenges I will face in implementing**?

The Business Case:

Bringing Better Data to Your Company.

Business Case for Digitization

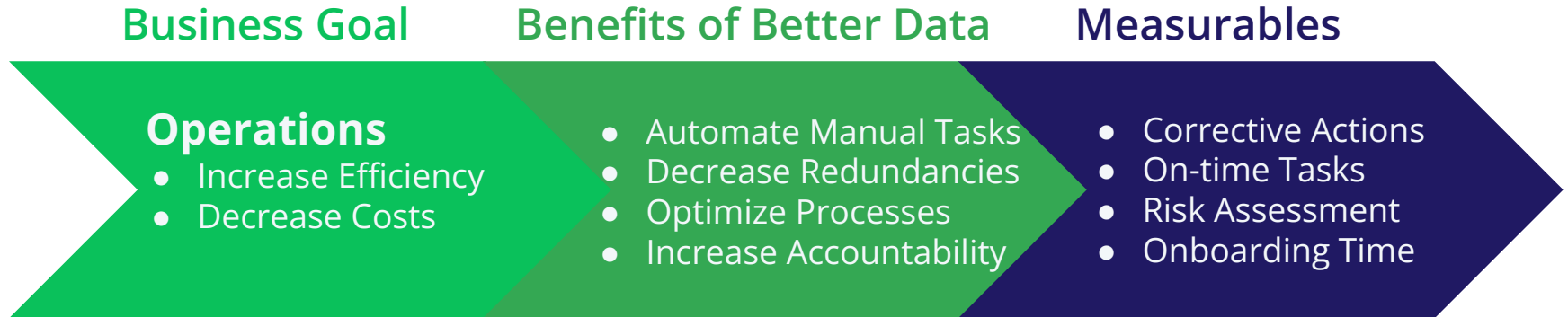
Align your data investments with your business's goals.



The **Revenue** Business Case



The Operations Business Case



The **Growth** Business Case



The Customers Business Case



Have More Questions? Contact us!



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A Platform to Drive Decision Making

Complete, monitor and analyze all your environmental compliance requirements in one place.

