



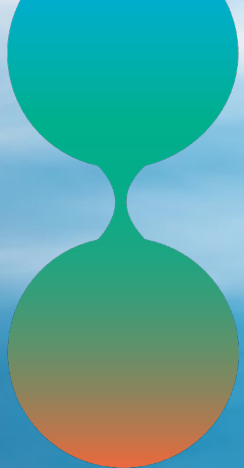
Kyle Denzler

Manufacturing Intelligence
Leader

SeeQ®

connect





Empowering Remote Monitoring Teams

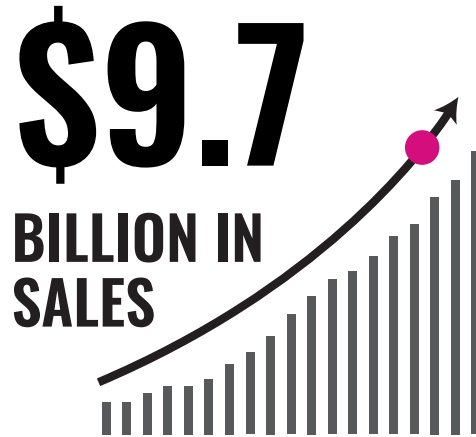
Kyle Denzler

Manufacturing Intelligence Leader

OWENS CORNING AT A GLANCE



CONSECUTIVE YEARS
AS A FORTUNE® 500
COMPANY



\$9.7
BILLION IN
SALES

*2023 REVENUE



18,000

EMPLOYEES PLUS 1
PINK PANTHER



30

COUNTRIES WHERE
WE OPERATE

Serving residential, commercial, and industrial markets

ROOFING | INSULATION | COMPOSITES

Digital Backstop



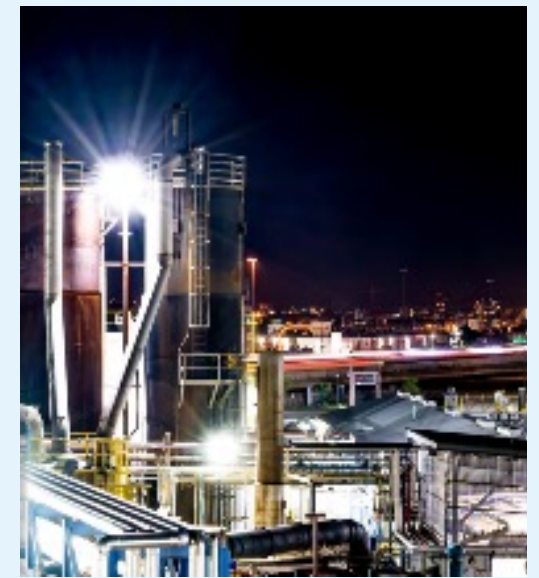
**Layers of the
Operation**



**Enterprise
Focus**



**Data Driven
Decisions**



**Using Data in
New Ways**

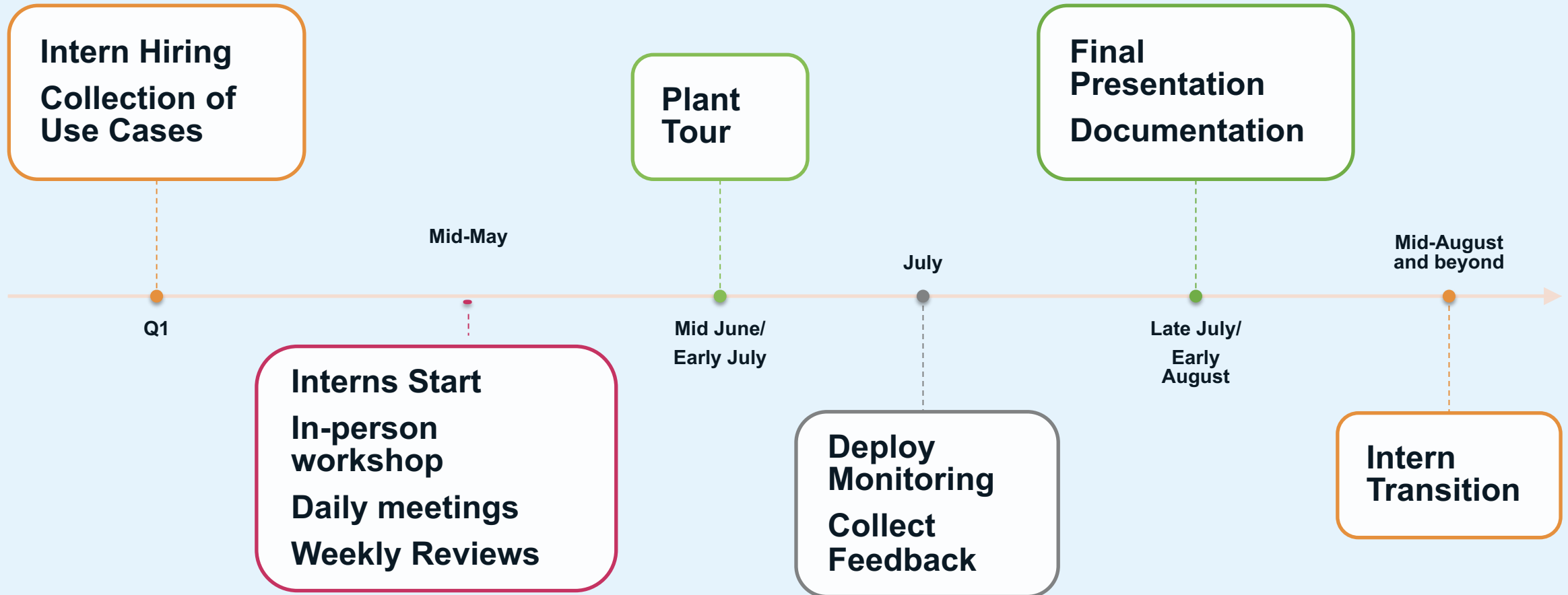


Creating a Digital Backstop

CHALLENGE	Retiring subject matter experts, increased turnover, aging assets, and an ever-increasing competitive market				
SOLUTION	Test and Build a Remote Monitoring Team using Interns				
RESULTS	USERS	ANOMALIES	ASSETS	REPORTS	HOURS SAVED
	 150 ACROSS ENTERPRISE	 50+ ANOMALIES DETECTED	 88 ASSETS MONITORED	 15 SENT AUTOMATICALLY	 4500 ENGINEERING HOURS
					



Timeline



The Value of Digital Tools: Accessibility

- Interns were hired, onboarded, and managed remotely
- We received overwhelming interest in our remote roles, allowing us to choose from excellent talent
- Training was able to start on Day One and was not limited by classroom hours, instructor availability, or waiting for IT to download software



The Value of Digital Tools: Context

- Using knowledge from SMEs, data was put in context
- Any layperson can interpret the information
- New hires can be effective without the time required to become an expert



The Value of Digital Tools: Scalability

- Reports and analysis can be built and then scaled to all like assets without having to redo any work
- Having all data on the same platform allows the sharing of knowledge and experience of issues to happen enterprise-wide



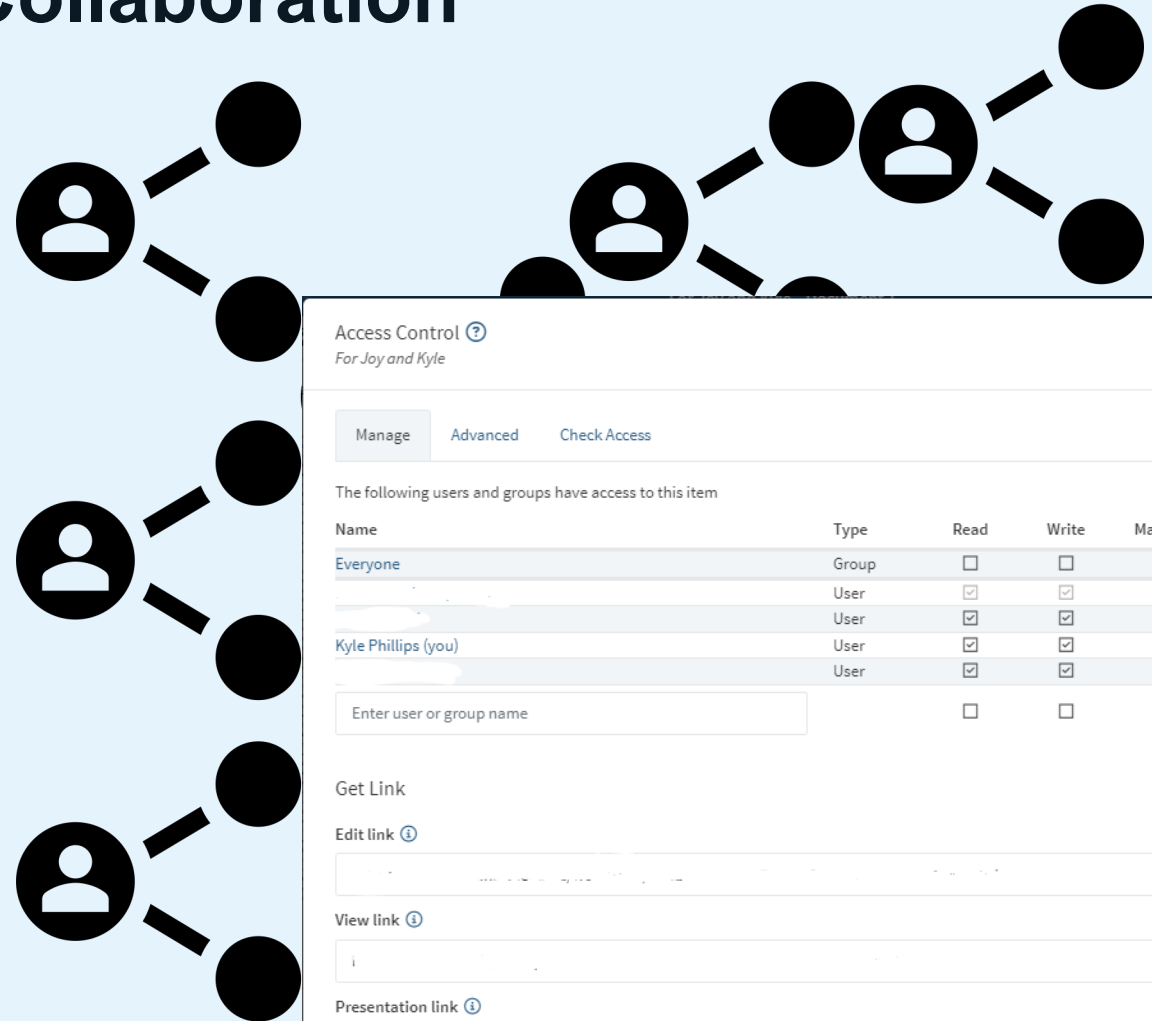
The Value of Digital Tools: Automation

- Reporting and alerting can be generated on an automatic basis, without any additional work
- Comparisons of data can be done on an ongoing basis
 - Valve output compared to SP
 - Recipe from one year ago compared to now
 - Rolling statistics
- Metrics can be generated with more frequency than before

YESTERDAY 3/21/2024		
Dips = when power dips 3+ std devs below daily mean. 3 is arbitrary, may need fine-tuning Problem with "power std dev" = units seem to vary plant-to-plant		
Daily Power Changes	Daily Power Dips	Power StdDev
197	0	1660.2
93	2	7.9514
41	4	329.31
40	0	5.0728
32	0	36.019
26	0	31.712
22	1	0.4957
22	0	36.682
20	0	81.48
20	2	8.6071
16	0	2.4251
16	0	2.2855
16	0	1.2685
15	0	1.0909
13	0	41.995
0	0	0.5339
0	0	0
0	0	0

The Value of Digital Tools: Collaboration

- Reports are easily shared across people, plants, and businesses
- Turnover from cohort to cohort was uninterrupted



Access Control ?
For Joy and Kyle

Manage Advanced Check Access

The following users and groups have access to this item

Name	Type	Read	Write	Manage
Everyone	Group	☐	☐	☐
	User	☒	☒	☒
	User	☒	☒	☒
Kyle Phillips (you)	User	☒	☒	☒
	User	☒	☒	☐

Enter user or group name
☐
☐
☐
Add

Get Link

Edit link ?

View link ?

Presentation link ?

Cancel Save

The Value of Interns

- Fresh perspective
- Low risk
- Low cost
- Talent pipeline
- Up-to-date on using Technology



Keys to Success



**Commit
resources**



**Enable
connections**



Don't Restrict



**Think small
problems
across many
places**

Where are they now?

- OC hired a full-time Remote Diagnostic and Monitoring Engineer in December 2023
- Full plant pilot was launched in January 2024, 2nd plant in April 2024
- Intern-developed work is still in daily use

Smart Metrics										
Organized By Plant										
Only available for data with: Live level data, known conversions, known min/max levels Some sensors are buggy, and some "smart data" may be buggy as a result. To verify odd-looking numbers, consult a time-series, available in the Time-Series page										
ABOUT DATA										
% Level	Pounds	Days to Min	Days Since Refill	Calculated Use	Average Refill (Month)	Amount of Room				
Max Level = 100% Min Level = 0% Yellow < 25% Red < 10%	No color code	Based on calculated usage rate, since last refill. Yellow < 2x Transit Time Red < 1x Transit Time	Works only when data is relatively low-noise Blue < 1 day	Based on current level and most recent refill level	Average of refill amounts over past 2 months	Difference between max level and current level Blue > Avg Refill Red < 0 (level is above listed max; figures may need to be updated)				
% Level (btwn min/max)	Pounds	Kilograms	Days Since Refill	Days to Min	Calculated Use	Calculated Use	Average Refill (Month)	Amount of Room	Amount of Room (kg)	Asset
69 %	108073 lb	49021 kg	2.1 d	6 d			54900 lb	39927 lb	18111 kg	
55 %	221182 lb	100326 kg	0.3 d	5 d			49000 lb	121318 lb	55029 kg	
72 %	40685 lb	18455 kg	6.2 d	18 d			44100 lb	14015 lb	6357 kg	