Americas' SAP Users' Group

Driver & Shipment visibility in the cloud brings transport cost down to earth

Adam Freeman, Supply Chain Director, KMG Chemicals
Frikkie Koen, Solution Architect, KMG Chemicals

Session ID: 83919

About the Speakers

Adam Freeman

- Supply Chain Manager, KMG

- Accountable for all outbound/distribution supply chain activities including inventory planning, inventory control, transportation planning, warehousing, and customer service. Member of the Business Management Team, ERP Transformation Team, and Business Intelligence Transformation Team.

- I have four kids, 1 girl, 3 boys

Frikkie Koen

- Solution Architect, KMG

- Started working with SAP in 1996, More than 10 end to end SAP implementations

- Went to all the US matches during the 2010 soccer world cup in South Africa

Key Outcomes/Objectives

1. How to digitize your constraint.
2. Agile development works.
3. Focus on driving business value.

Agenda

- Company Introduction
- Market Dynamics Forced Business Mandate
- 2018 Freight Market Forces
- Finding the Constraint
- Design Process
- Project Results
- Lessons Learned

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Company Overview

Creating a Powerful Combination

Combined company creates value and strengthens earnings with approximately $1B in annual revenue and approximately $320M of EBITDA

	Cabot Microelectronics	KMG	Cabot Microelectronics + KMG
Revenues	$570M*	$460M**	$1,030M
Equity Capitalization	$3.1B	$1.0B	-
EBITDA	$175M*	$119M**	$319M***
EBITDA Margin	31%	26%	31%***
Employees	1,150	750	1,900
Global Sites	10	19	29

*CMC: Last 12 months ending June 30, 2018
** Based on KMG's consensus FY18 (July 31, 2018) EBITDA estimate
***Includes estimated $25 million in synergies

Cabot Microelectronics

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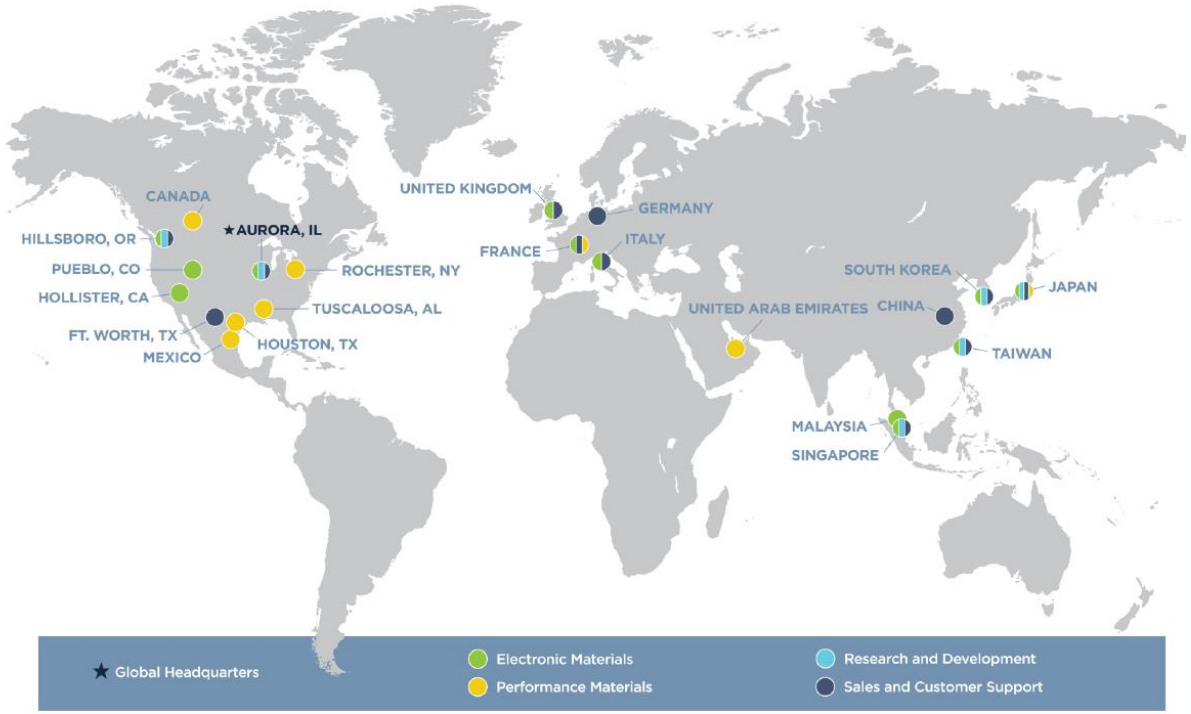
Global Footprint and Product Diversity



Cabot Microelectronics

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Source: Cabot Micro Microelectronics Online Investor Kit http://ir.cabotcmp.com/phoenix.zhtml?c=120920&p=irol-kmg

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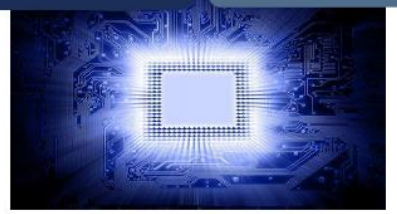
Company Overview

Cabot Microelectronics' Portfolio of Critical Materials

Provides essential products that constitute a minimal portion of the customers' end product cost

Electronic Materials — ~85%* of Revenue

CMP Consumables



- Largest supplier of CMP polishing slurries and second largest supplier of CMP polishing pads
- Leading global supplier of high purity process materials for semiconductor manufacturing
- Critical to the semiconductor manufacturing process
- Global footprint with facilities in North America, Europe and Asia

High Purity Process Materials

Performance Materials — ~15%* of Revenue

Pipeline Performance

- Leading provider of performance products and services for improving pipeline operations and enhancing efficiency
- Drag-reducing agents (DRAs) to optimize pipeline throughput, lower operating pressure, and reduce energy costs
- Valve lubricants and sealants

Other

- Manufacture products that preserve and protect vital infrastructure
- Precision machining and polishing technologies for optics industry

Cabot Microelectronics

*Based on FY2018 actual revenue

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Source:

Cabot Micro Microelectronics Online Investor Kit

http://ir.cabotcmp.com/phoenix.zhtml?c=120920&p=irol-kmg

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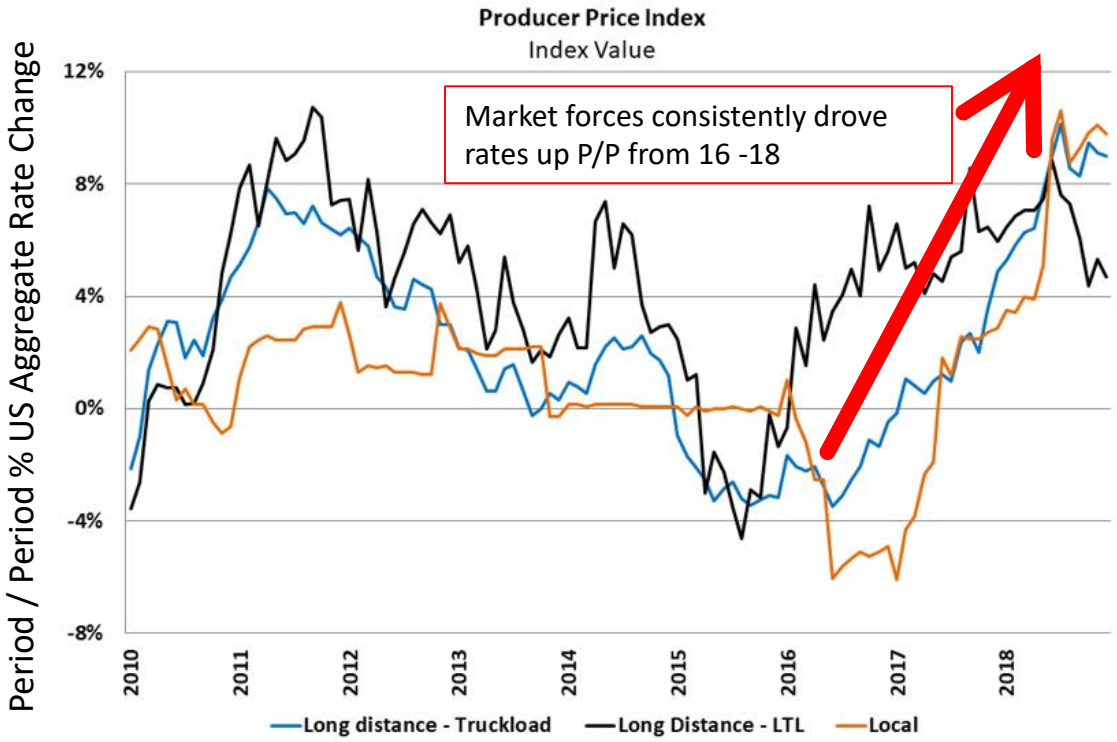
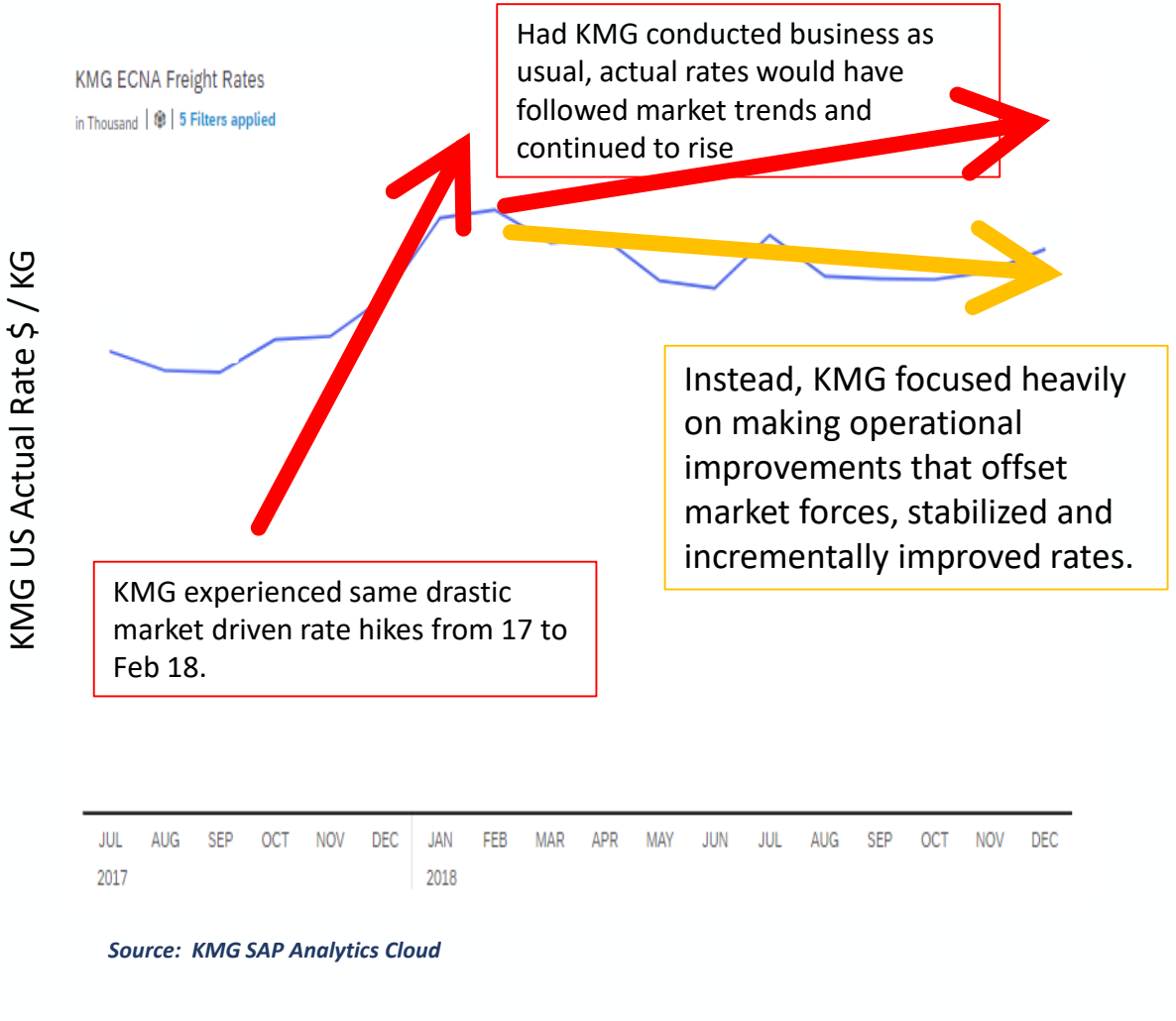
Business Mandate: Mitigate Negative Freight Market Forces Through Focused Operational Improvements



Source: Bureau of Labor Statistics

RATE INCREASES IN LONG-DISTANCE TRUCKING REMAIN STRONG



Source: KMG SAP Analytics Cloud

Economic Factors Forcing Change

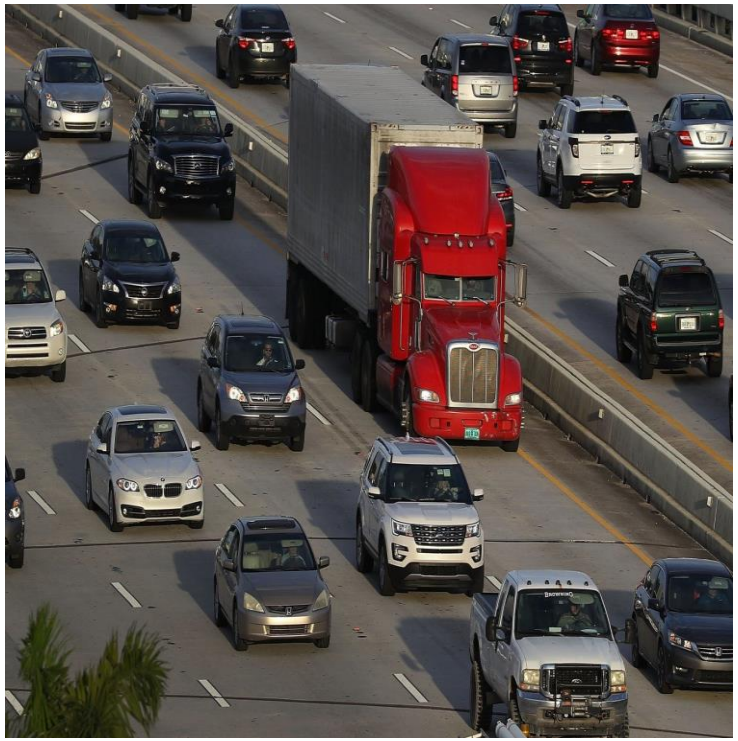


PHOTO: JOE RAEDLE/GETTY IMAGES

US Freight Capacity Hit Breaking Point

Q4 2017 – Q1 2018

- ELD Rule Spurs Carriers, Truckers to Drop Slowpoke Shippers – Trucks.com, 11-28-17
- On eve of ELD era, US shippers brace for disruption – JOC.com, 12-1-17
- Trucking Industry Struggles With Growing Driver Shortage – NPR, 1-9-18
- Trucking firms offer up to $8,000 bonus and other deals to lure drivers – USA Today, 12-26-17
- Tight Capacity, ELD Mandate Send 3PL Rates Higher – Transport Topics, 12-27-18
- Trucking Capacity Crunch Leading to Record Freight Rates – Truckinginfo.com, 1-25-2018
- DAT: Spot Rates Poised to Keep Climbing in 2018 – Trucker.com, 1-4-18
- Shrinking Truck Capacity Becomes a Major Issue for Shippers – SupplyChainDive, 1-23-18
- Shippers Told to Brace for Record US Trucking Rates – JOC.com, 1-23-18
- A Shortage of Trucks is Forcing Companies to Cut Shipments or Pay Up – WSJ, 1-25-18

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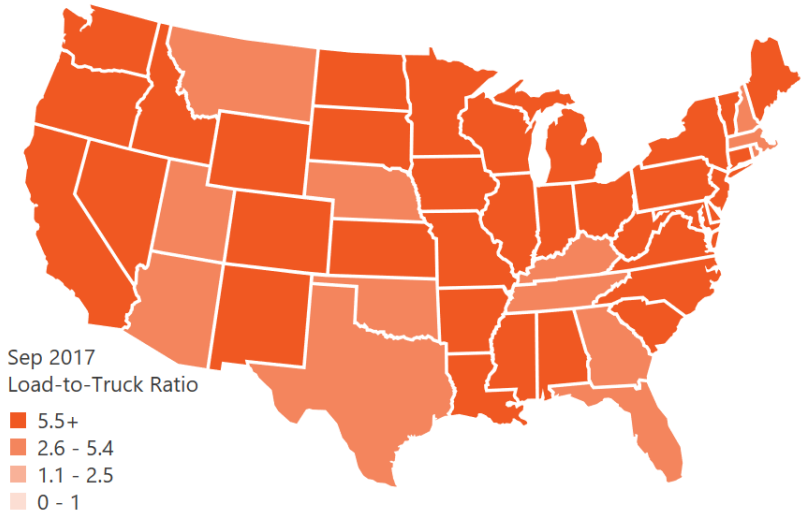
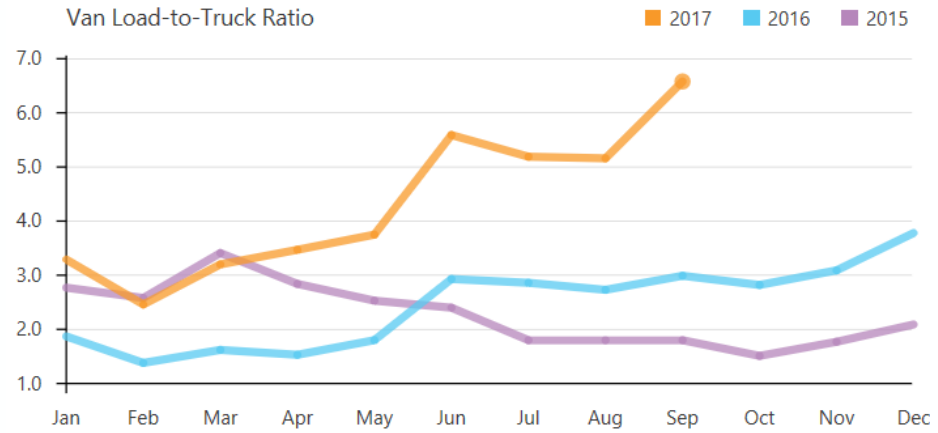
Economic Factors Forcing Change

DAT trendlines – national van demand and capacity



Van Load-to-Truck Ratio Holds Steady

Van load posts declined 2% and truck posts increased 2%, which caused the load-to-truck ration to hold steady at 5.4 loads per truck. The load-to-truck ratio has declined over the past three weeks after hitting the highest van load-to-truck ratio ever recorded in Trendlines during the final week in September. Van rates fell 3¢, but the national average van rate remains above the $2 per mile mark. .



Load-to-Truck Ratio Jumps 28% in September

Van load load posts were up 10% from August to September, while truck posts fell 14%. As a result, the September load-to-truck ratio increased 28%, to 6.6 van loads per truck—its highest monthly level in years. The ratio was up 120% compared to September 2016.

Source: DAT Trendlines Oct 15th – Oct 21st, 2017 https://www.dat.com/resources/trendlines/van/demand-and-capacity

Business Constraints Identified

Problem Statement

- US Freight Capacity Insufficient for Demand
- Freight rates positioned to increase at historic rates

External Root Causes

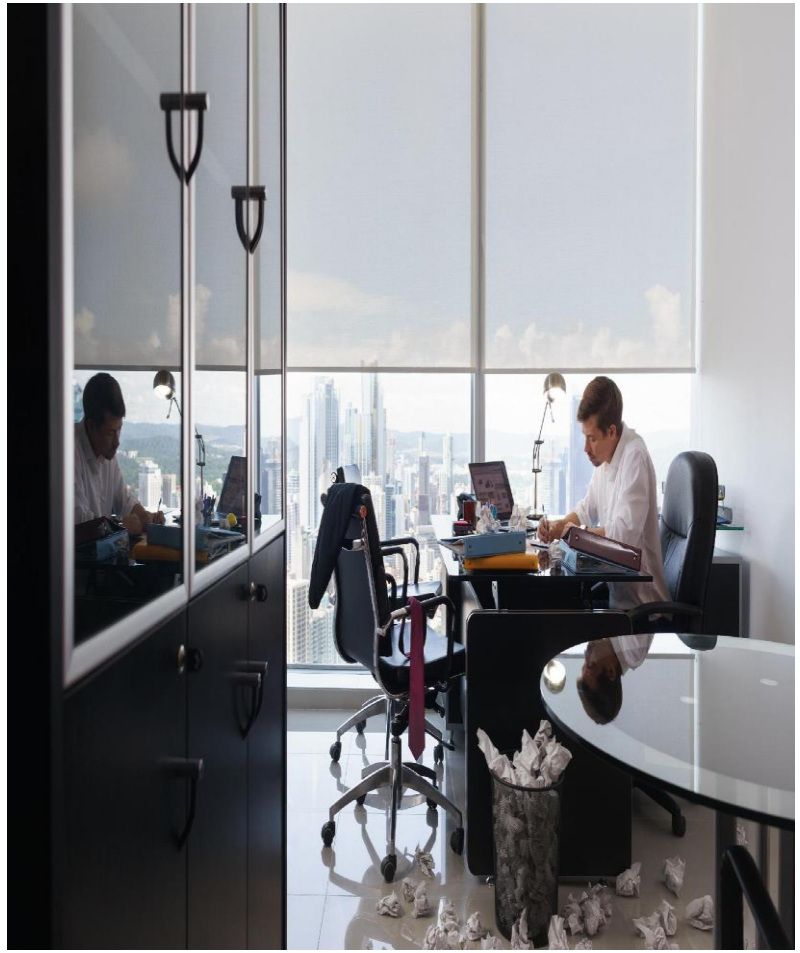
- Driver Shortage
- ELD Mandate
- Driver Productivity

Internal Root Causes

- Excessive driver dwell time at main plant
- Plant shipping docs had historically been 1st come 1st served which over time had created gridlock
- Over reliance on live loads

Solution Requirements

- Maintain customer service levels
- Avoid price wars with other shippers
- Fast implementation required
- Low IT Budget



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Proposed Solution to Digitize the Constraint

Solution

- Reduce Driver Dwell Time at plant by implementing appointment schedule
- Track dwell time and expedite processing through digital check in

Project

- Implement Transplace Appointment Schedule App
  - Existing software with current 3PL
  - Low operational maintenance and easy to use and low cost
- Implement Digital Carrier Check-In App

IT Requirements

- Update existing data feeds with Transplace to incorporate appointment data
- DO NOT change existing shipment (VT0X) work process or functionality
- Get it done in a month or less
- Little budget allocated for project

Business Requirements

- Limit the scope to areas most affected by costs, and willing to contribute to solution
- Ensure that solution meets needs of participant groups, and has hooks for future groups
- Train external partners and rain Internal Staff

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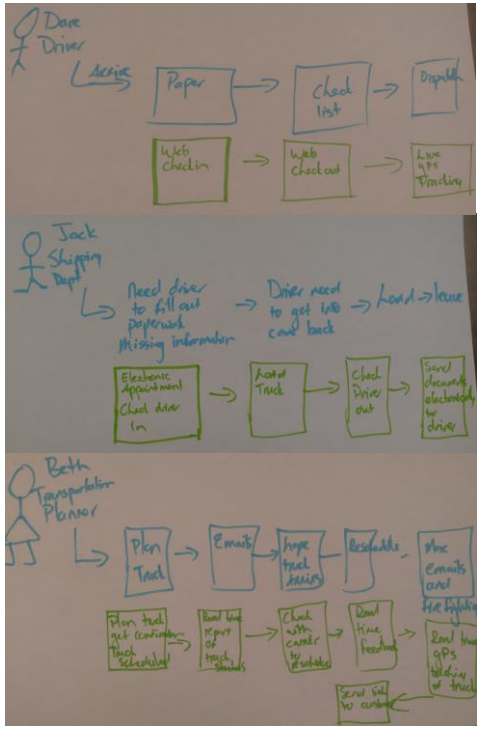
User Experience Design Sessions

Team

1. KMG
    1. Sponsor
    2. Technical Coordinator
    3. Superuser
    4. Doc Control
    5. Developer 1
    6. Developer 2
2. 3PL
    1. Project Manager
    2. Technical Coordinator
    3. Super User
    4. Developer

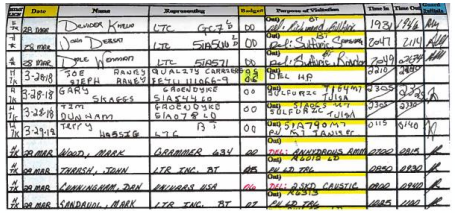
Input

Identify needs, pain points and goals of people affected by this constraint.



Current Process

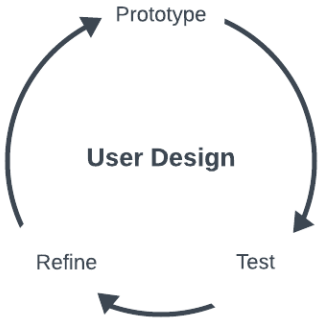
No appointment, manual check in, long wait times.

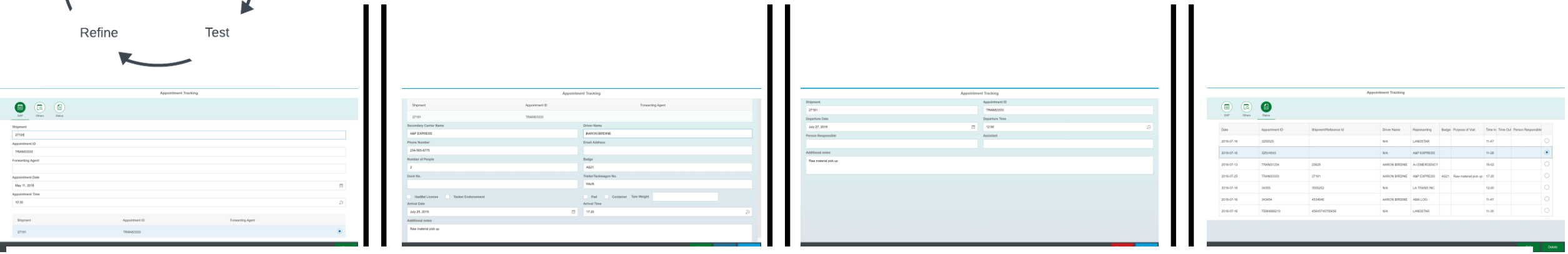


Output

Quick design of what future app will look like and how it will be used

Rapid Agile Development

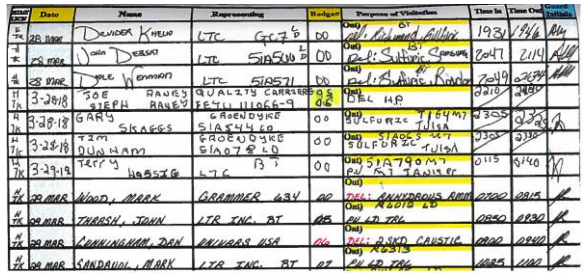




Requirements Planning → User Design → Construction → Cutover

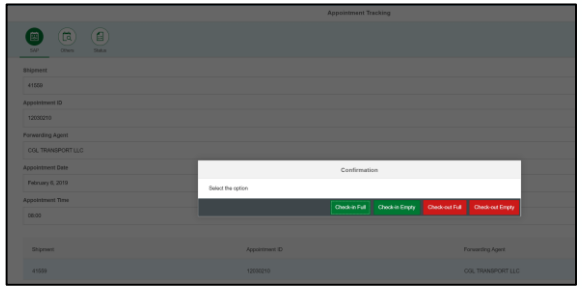
Reactive to Digital to Proactive

Yesterday

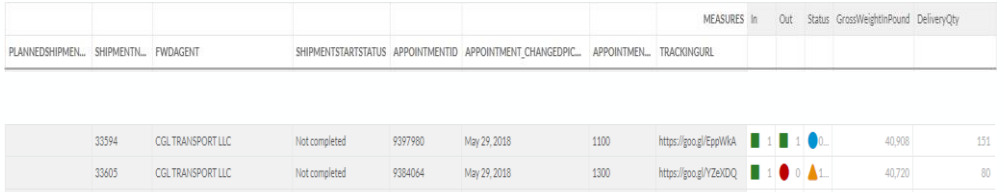


No appointment schedule for drivers, first come first serve, long wait times, manual Check in.

Agile Development Sprint 1



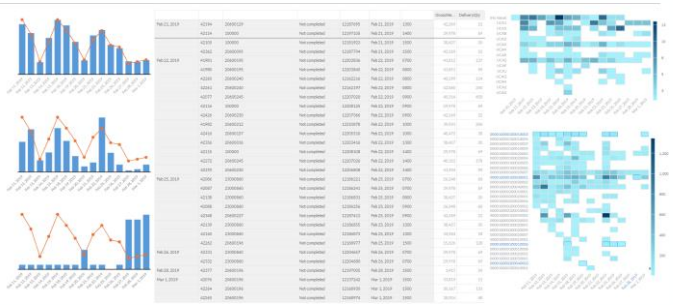
Digital check in of drivers with appointments integrated via 3rd party TMS using SAP Cloud Platform App.



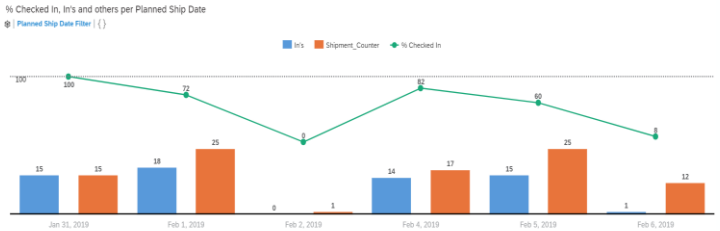
								MEASURES	In	Out	Status	GrossWeightInPound	DeliveryQty
PLANNEDSHIPMEN...	SHIPMENTN...	FWDAGENT	SHIPMENTSTARTSTATUS	APPOINTMENTID	APPOINTMENT_CHANGEDPIC...	APPOINTMEN...	TRACKINGURL						
	33594	CGL TRANSPORT LLC	Not completed	9397980	May 29, 2018	1100	https://goo.gl/EppWkA		1	1	0	40,908	151
	33605	CGL TRANSPORT LLC	Not completed	9384064	May 29, 2018	1300	https://goo.gl/YZeXDQ		1	0	1	40,720	80

Visualized in real time via SAP Analytics Cloud Report updating every five minutes.

Agile Development Sprint 2

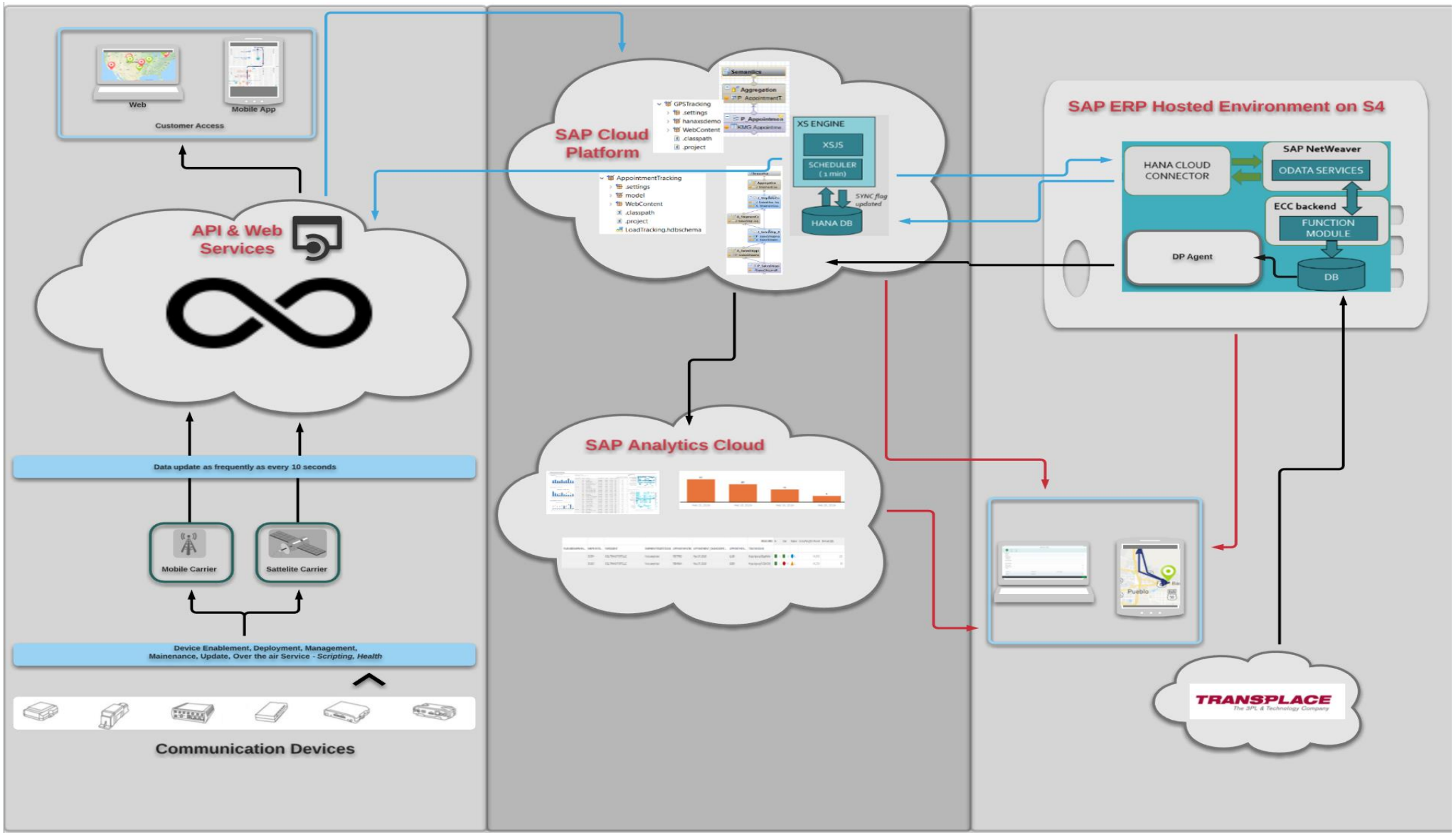


SAP Analytics Cloud Dashboard provides 7 day future view of loads planned.

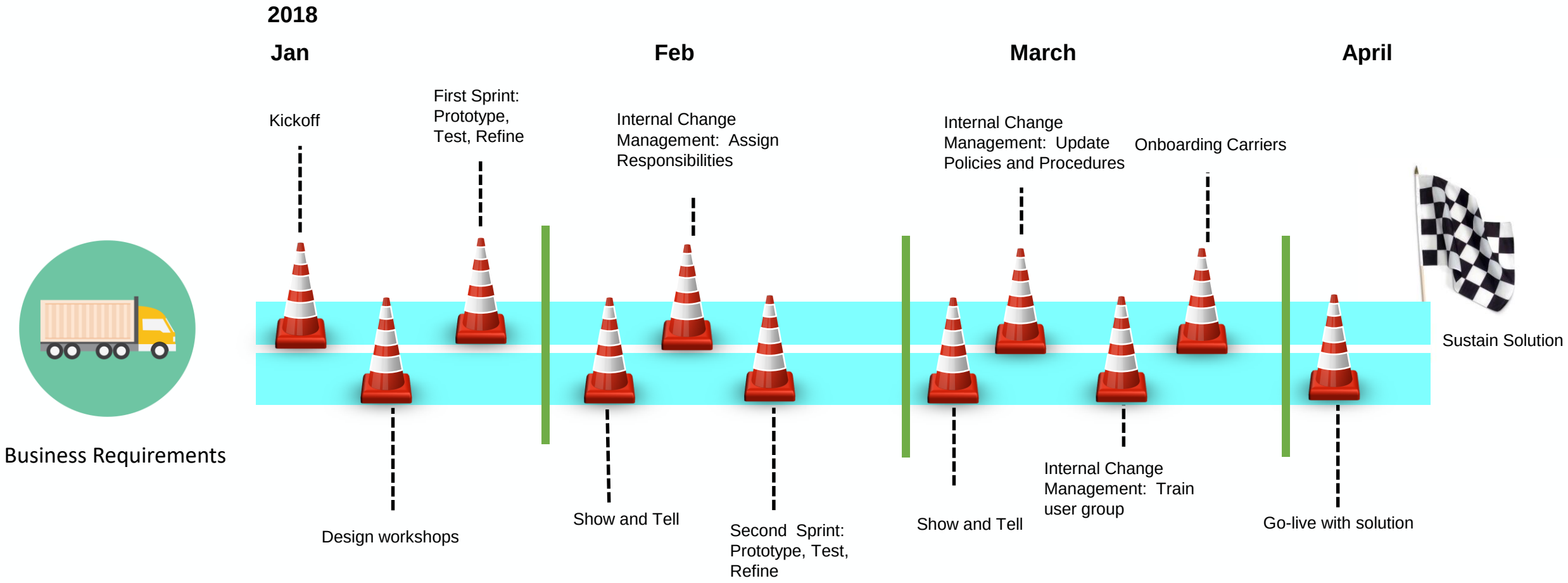


Trend analysis around schedule adherence.

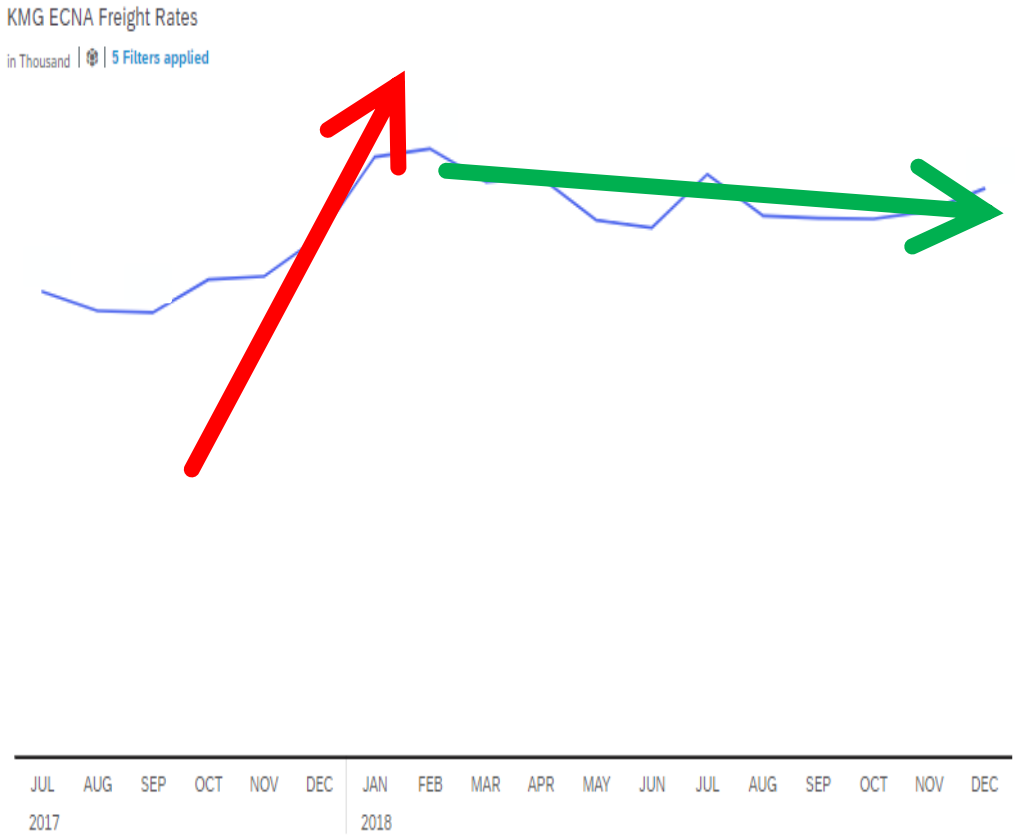
Technology Employed



Project Critical Path



Project Results



Source: KMG SAP Analytics Cloud

- Finished in record time.
- Finished with record *LOW* costs.
- Solution immediately utilized.
- Eliminated a critical constraint and allowed for further freight initiatives
- Avoided further freight rate increases compared to market which reduced costs internally and to customers.
- Learned how to operationally leverage SAP Micro Services

Business Lessons Learned

- Market forces are changing rapidly, fast response is critical.
- Find the internal constraint that exacerbates market forces and where it makes sense, digitize it.
  - Appointment schedule was critical path to multiple freight initiatives
- Limit scope to mission critical functionality, and stick to it.
  - Focused departments
  - Focused functionality
  - Focused analytics
- Design process hooks for future expanded functionality.
- Push IT to stay engaged through change management process.
- All shippers are using the same pool of drivers and driving hours, we need to keep them moving!!!

IT Lessons Learned

- There is little business appetite for large, expensive, prolonged, module rollouts.
- Rapid IT response to changing business needs is critical.
- Leverage SAP Cloud Platform to build microservices.
- Educate up and down. Few people know the power on the SAP Cloud Platform.
- Develop full scope with business *before* coding starts.
- Quick turn around time and feedback is the key to reduced changes.
- Focus resources.
- Limit scope changes. It's ok to push back on the business.
  - Agile development works!
- Constant communication and feedback to all stakeholders.
- It is only completed when the procedures are updated and training is done.

Summary

- Let’s help get our drivers off our docks, and on the road.
- We ALL benefit from converting driver idle hours to mile hours.
- The cloud platform enables microservices.

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Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

http://info.asug.com/2019-ac-slides

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Q&A

For questions after this session, contact us at

Frikkie Koen Email: fkoen@kmgchemicals.com
LinkedIn: www.linkedin.com/in/frikkie-koen-52889a3/

Adam Freeman Email: afreeman@kmgchemicals.com
LinkedIn: www.linkedin.com/in/adam-freeman-mid-a518a911/

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