How Digital Transformation surfaced the concrete industry

How electronic communications are evolving in Ready-mix
Meet the Team

Safety, Environmental, Operations Committee
NRMCA DIL C/O 2020-2021

Jenay Brown- LafargeHolcim- Dispatch Supervisor
Tyler Stanley- imi- Production Manager
Luis Soto Rivas- U.S. Concrete- Concrete Dispatcher
The Safety, Environmental and Operations (SEO) Division provides the forum for the interchange of ideas relating to safety, equipment maintenance, environmental compliance, production and distribution, and the training of personnel in the ready mixed concrete industry. The division advocates and reports on regulatory issues involving, in part, the Department of Labor, National Labor Relations Board, Department of Transportation, Environmental Protection Agency and the Department of Treasury.

-NRMCA
Let’s get digital. What’s trending in the concrete industry?

- Paperless tickets
- Concrete web ordering
- Field Level Risk Assessment
- COVID (self evaluation) checklist
- Pre-trip/ Post-trip assessment
- QR Digital Codes
- Concrete Data While in Transit (Smart Hatch/ Drum tech)
- Concrete Analysis Report
- Driver Vehicle Tracking- Mapping Services

Many of the mentioned tools began in 2020 to help reduce the spread of the coronavirus. Not only were these tools of convenience but of most importantly, were top tools of SAFETY.

Take a step into the 21st century as we navigate through the use of these tools and how they’re successful in many operations.
Concrete Delivery- Orders & Tracking

Old Way:
1. Assume the loads are on the way.
2. Call if the concrete is not on time.
3. Trust in the concrete producer to tell the truth.

New Way:
1. Mobile app
   a. Track the exact location of your truck on a live map
   b. View performance metrics (yards per hour, on time)
   c. Track quality of material (batch weights, load times)

Mobile App experience may also allow the customer to place concrete orders and chat live with Dispatch on order placements and deliveries.

Accountability and Transparency between customer and producer
“I like being able to manage everything from my personal device. I like the fact that notifications come when concrete is batched, the trucks track in real time on the map, the calendar shows my will call orders, and the ability to manage and sign tickets from my device.”

-Robbie Bradley- Envision Contractors
e-Truck Mapping Services

The concrete producer, construction manager, owners, developers, engineers and truckers can be connected in real time to make critical logistical decisions by utilizing mobile mapping services to track their deliveries.

No question when a load is late while a driver is stuck in traffic, as the customer has a front row seat, right at their fingertips.
KEEPING THE CUSTOMER INFORMED

❖ The rate of the pour is very important and having this information available in real time without having to make a phone call has shown to have a great impact, not only does it save time, but it saves money.

❖ When it’s time to schedule finishers, it is imperative to the contractors to know how much manpower is needed.

❖ This can assist with future pours with similar characteristics. Understanding the analysis of the unload times, wait times, and pouring rates will also reduce rejected and expired loads.
# 12677 - Morris Warehouse
# 1400382 - GMAC CONSTRUCTION LLC
Doremus Avenue and Roanoke Avenue, Newark, New Jersey 07105
Mix: 15811E03

<table>
<thead>
<tr>
<th>GENERAL INFO</th>
<th>DELIVERIES</th>
<th>ANALYTICS</th>
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<tbody>
<tr>
<td></td>
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</table>

- 0 YD In Transit
- 795 YD Poured
- 0 YD Onsite
- 0 YD Remaining to Ship

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<tr>
<th>NEXT TRUCK</th>
<th>START TIME</th>
<th>POUR FINISH</th>
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<tbody>
<tr>
<td>ORDERED POUR RATE 132 YDs/HR</td>
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<tr>
<td>ACTUAL POUR RATE 175 YDs/HR</td>
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<tr>
<th>ON THE WAY</th>
<th>ON THE JOB</th>
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<tbody>
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<td>0 Truck</td>
<td>0 Truck</td>
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</tbody>
</table>

Average Time on Job
- On Job Wait 11 mins
- Pouring 7 mins
- Washing 13 mins

ORDERED BY
tony 609-221-8501
Paperless Ticketing
Efficiency at its best

All the information available to the driver on a touch tablet showing ticket information that would be normally available via paper ticket.

Drivers can view the address, mix, quantity, and slump of the concrete to include any additional products.

Making deliveries contactless, safe, easy, and efficient.
## Driver Vehicle Inspection Report

### Driving Safe & at ease

Checking for major defects on pre-trips, during trips, and post trips conveniently completed electronically. Providing site mechanics, plant managers, and dispatchers an instant notification of completed forms. Also, available to mechanics in real time where the forms can be reviewed and signed off on digitally.

Items of major defects, will alert drivers to contact their immediate Plant Manager and fleet maintenance will place the truck ‘Out of Service’ until the item in question is repaired and the truck is available for use.

Real time alerts on Major defects for Plant and Dispatch personnel provides direct attention to multiple people to pause ticketing, check the defects, and provide corrective action for safe travels and deliveries.

<table>
<thead>
<tr>
<th>Carrier’s name</th>
<th>Lafarge</th>
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<tbody>
<tr>
<td>Vehicle licence plate</td>
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<tr>
<td>Mileage</td>
<td>3500 mi</td>
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<tr>
<td>Major defect(s) / Out of service</td>
<td>None</td>
</tr>
<tr>
<td>Minor defect(s)</td>
<td>1</td>
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<tr>
<td>X Occupant compartment door fails to open</td>
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**Inspected by**

Torrey Utne

**Wed, Jan 13 10:20 PM**

Everett
E-Ticket

Paperless, Contactless, Touchless

No Plant-to- Driver-to- Customer contact necessary as companies go paperless. All tickets are available electronically. DOT regulations and acceptability is at each individual state’s discretion.

Some companies reverted to electronic signatures and some have reverted to imagery where the electronic tickets show an image snapshot of the job delivery site or have an allowable feature on the driver’s device to snapshot the site in which concrete was received.
Field Level Risk Assessment Report

Drivers reporting safety risks and hazards on the job sites in REAL time, electronically.

Customers and Dispatchers can review the issue instantaneously and apply corrective action on-the-spot.

The speed of this tool provides the driver immediate assistance in making a safe decision prior to unloading on the jobsite.
Smart Drum

This emerging tech allows the producer to monitor concrete in real time.

Ability to Monitor:
- Slump
- Temperature
- Air %
- Yardage in Drum
- Revolutions of Drum
- Water Additions
What does the Future Hold?

- **Smart Delivery Vehicles**
  - Real Time Data Transmitted about the product onboard.
  - Integration of multiple technologies to one device.
  - Driver Aids to monitor/ adjust concrete onboard.

- **Integration at the Plant**
  - Streamlining data into a single point.
  - Live metrics help decision be made with clarity and speed.
  - Efficiency Improvements

- **Customer Service**
  - Deliver quicker data to the end user.
  - Manage orders and communications in an efficient method.
Thank you!