Welcome!
The presentation will begin shortly

If your badge was not scanned at the door, please use the self check-in feature in the session details in the Schedule.
Self-Service Analytics and Data Driven Decision Making

Khuzema Tikiwala
Solution Architect – Analytics / BI
Meritor Inc.

3/19/2020
Agenda

- Introduction
- Self-Service Analytics
- Enabling Self-Service Analytics With Qlik
- Use Cases
- Analytics in Digital Transformation / IIoT
- Q & A
Introduction

RT14X Tandem Axle
About Me

Graduated from Indore University as Mechanical Engineer in 1991

Diploma in Marketing Management in 1994

in Finance in 1996

Diploma in Advance Computing

Passionate about music/singing! Hosted a radio program on AM 1460 for 2 years

Favorite Places
Mountain/Beach

Community Service
Meritor is a leading global supplier of drivetrain, mobility, braking and aftermarket solutions for commercial vehicles and industrial markets.

MERITOR at a Glance

- MTOR NYSE Symbol
- $4.4 Billion Company
- 9,100 Employees
- 19 Countries
- Troy, MI Headquarters
Diversified Product Portfolio

- Truck
  - Axles
  - Drivelines, universal joints and yokes
  - Cam, air and hydraulic brakes
  - Automatic slack adjusters

- Trailer
  - Axles
  - Air ride suspensions
  - Meritor Tire Inflation System™ (MTIS)
  - Brakes

- Defense
  - Full portfolio of axle and brake technology
  - All-wheel drive systems
  - Independent suspension axle systems (ISAS)
  - Military-grade drive axles
  - Transfer cases

- Off-Highway
  - Heavy-duty front and rear axles
  - All-wheel drive systems
  - Transfer cases
  - RT crane axles

- Specialty
  - Front and rear axles
  - All-wheel drive systems
  - Transfer cases
  - Gearboxes
  - PTOs

- Aftermarket
  - Original equipment service parts
  - All-makes programs
  - Remanufactured parts

Proprietary ©Meritor, Inc., 2020
Self-Service Analytics

Meritor Tire Inflation System (MTIS™)
Self-Service Analytics

- Business users build the dashboards

- IT provides governance, security, upgrades, data connections, migration of dashboards, technical support and trainings

- Business controls who can access Qlik dashboards
  - Security based on windows AD groups
  - User requests access through a Qlik Access Request form
  - Business approves or rejects access
  - No IT intervention needed. Once a user is approved, access is granted automatically

- Training
  - Group training
  - Continuous One on One training
Self-Service Analytics

Dashboard registration

- Every Dashboard is registered through a registration form
- Information captured is: Dashboard owner, developer, data age information and functional details about the dashboard
- All the information is displayed in a mandatory Functional Details sheet in each dashboard
- Any new user of the dashboard knows who to contact in case of any questions
# Self-Service Analytics

## Functional Details

### Functional Description

This is a functional description of what this dashboard is about, how it works and other relevant information.

This dashboard serves the purpose of creating a template for creating a supplier scorecards via printing services monthly. The scorecard is the first sheet in the dashboard and allows the users to print the scorecards to PDF on the fly. The remaining sheets on the dashboard supply users with the supporting data that makes up the scorecard. It is intended to combine data for the users in a single place to get quick answers to frequently asked spend, savings, quality, and delivery questions.

The data for this dashboard is coming from the common, procurement, and Procurement GSC schemes in the data warehouse. This dashboard also pulls in data from the Subjective SharePoint as well as dashboard owner maintained data from Excel files from a SharePoint document library.

## Supplier Scorecards Dashboard Changes

<table>
<thead>
<tr>
<th>Change Date</th>
<th>Change Name</th>
<th>Change Type</th>
<th>Change Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/30/2020</td>
<td>Delivery</td>
<td>Data Quality</td>
<td>The ETL package that pulls the delivery data into the warehouse was missing pulling in FX rates consistently for some sites. IS has resolved the issue.</td>
</tr>
<tr>
<td>1/30/2020</td>
<td>Delivery</td>
<td>OTIF Tolerance Update</td>
<td>The team received guidance from Supply Chain leadership to update the delivery tolerances for the on-time in-full (OTIF) metric. All CVIs and CVA are now aligned to the same tolerances globally. CVI has a +1 day for domestic and +5 days for international shipments globally. CVA now has a -5 to +2 days for domestic and ≥ 9 days for international shipments globally.</td>
</tr>
<tr>
<td>1/30/2020</td>
<td>Fiscal Month Labels</td>
<td>Bug Fix</td>
<td>Fixed inconsistent labeling of fiscal months. For December and January fiscal months, depending on where the fiscal month started and ended, it would sometimes show the next or prior calendar year on the label. Eg January FY19 was showing 2018-Jan because the fiscal month started in December of 2018. The data was being sliced correctly on the back-end, the label was just incorrect.</td>
</tr>
<tr>
<td>1/13/2020</td>
<td>Delivery</td>
<td>Data Quality</td>
<td>The ETL package that pulls the delivery data into the warehouse for Qlik to consume was discovered to be duplicating rows. IS has remedied the duplication issue. September and October PDF scorecards have been removed from the SharePoint.</td>
</tr>
<tr>
<td>12/11/2019</td>
<td>Forecasts</td>
<td>Data Quality</td>
<td>The dashboard had previously been updated to automatically select the correct forecast, but forecast had not been removed from all calculations. Removed all references to forecast in all tables and calculations.</td>
</tr>
<tr>
<td>12/11/2019</td>
<td>Savings Sheet</td>
<td>Bug Fix</td>
<td>A change in how the estimated savings was calculated validated on FY19 data correctly but didn’t correctly roll over to FY20. Some savings inadvertently fell off of the calculation depending on when the program started. Most charts were showing the correct percentage but the calculation that determined the grade was ignoring the prior fiscal year programs. This has been corrected.</td>
</tr>
<tr>
<td>12/11/2019</td>
<td>Spend Sheet</td>
<td>Bug Fix</td>
<td>The wrong currency code was put into the spend table which caused rows to appear duplicated. This didn’t cause issues with the spend but greatly increased the number of rows. The correct currency column has been added to the table. In addition future fiscal months without spend were showing in the table and have also been removed.</td>
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</tbody>
</table>
Self-Service Analytics

Dashboard Migration

- Dashboard developers initiate the dashboard migration using a SharePoint form
- Dashboard owner (business) gets notification for approval/rejection
- After approval, IT gets notification and migrates the dashboard
Enabling Self-Service Analytics With Qlik

Permalube RPL Series Driveline
Enabling Self-Service Analytics With Qlik

Meritor Data Dictionary Dashboard

- A complete inventory of data available in data warehouse
- Users can see what data is available in the data warehouse
- Simple search function to find data elements
- Users can find out if the data can be used in Qlik
- Information on Qlik data connection availability for the data
- User can request access to data connection directly from the dashboard
Enabling Self-Service Analytics With Qlik

- **Qlik Access/Usage Dashboard**
  - Users can see who have access to each dashboard
  - Used for regular Qlik access audits
  - Stream owners can see who is accessing which dashboard in their stream
  - Stream owner can see when was the last time a user accessed a stream/dashboard and decide to revoke someone’s access
Use Cases

MTA Suspension
Use Cases

Sales and Margin Analysis:
Dashboard to analyze sales, profitability margin and cost allocation

➢ Before
  ➢ Data accessible only through Excel.
  ➢ Mostly aggregate data. No drill down capabilities

➢ Benefits
  ➢ Found many under the radar issues with margin. Many high margin product which were ignored
  ➢ Concept of minimum profitability margin for each product line. This was not there before this dashboard launch
  ➢ Uncovered many profit opportunities which were missed
Use Cases

Sales and Margin Analysis:

➢ Benefits

➢ Improvement in cost allocation model. Cost was allocated at a higher level and was making some products look bad. Cost allocation is now happening at lower level

➢ An estimated opportunity of saving $1 million per year

“Coolest thing I have ever seen”

“It’s a treasure trove of information”

“It must feel great to deliver something that adds so much value to the business”
Use Cases

Resource Metrics for Engineering Lab:
Dashboard to analyze resource utilization for Test Labs across the globe

➢ Before
  ➢ Manual report preparation for daily meeting
  ➢ Mostly aggregate data. No drill down capabilities
  ➢ Whiteboard displays for daily briefing meetings

➢ Benefits
  ➢ Standardization of test lab KPIs
  ➢ Historic trends enabled adjustment of target percentages to be realistic
  ➢ Clear visibility of issues with test equipment/labor
Use Cases

Resource Metrics for Engineering Lab:

- **Benefits**
  - Improved response time in addressing operational issues
  - Eliminated many whiteboards for daily briefing
  - Ability to customize/configure the displays as per requirements is a significant benefit
  - An estimated cost savings of $45,000 per year

“It is visually pleasant and has been strongly embraced by our department”
## Use Cases

### Daily OEE

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<thead>
<tr>
<th>Site</th>
<th>Lab</th>
<th>Previous Step Date</th>
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<th>Target</th>
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<th>≤75</th>
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<td>Total Running Hours</td>
<td>462,469</td>
<td>78,519</td>
<td>383,949</td>
<td>70,323</td>
<td>70,819</td>
<td>18,239</td>
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**Running/Iterations:** 383,949
**Total/Actual:** 114,381

**OEE Fact:** -115%

**Utilization:** -984%
Use Cases

Supplier Scorecards:
Dashboard to analyze supplier performance based on spend, savings, delivery, quality and diversity metrics

➢ Before
  ➢ No window into supplier delivery data
  ➢ Very manual process to evaluate supplier performance
  ➢ Low confidence in the data

➢ Benefits
  ➢ New concept of scorecard for suppliers
  ➢ Increased data literacy
  ➢ Global process standardization
Use Cases

Supplier Scorecards:

- **Benefits**
  - Holistic view of supplier performance across the globe.
  - Reinforced the need for proper updates related to shipments in source system.
  - Opportunity to review the scoring mechanism.
  - Automated generation of monthly supplier scorecard PDF (about 600 KB).
  - Opportunity of cost savings by selecting the right supplier.
Use Cases
Use Cases
Analytics in Digital Transformation

Rough Terrain Crane Axle
Analytics in Digital Transformation / IIoT

Use Cases:

- Shop floor display boards
  - Combination of Qlik dashboards and Mashup
  - Display has shop floor data, news/announcements, notifications, safety instructions etc.

- End of Assembly Line product validation (PoC)
  - Qlik dashboard for end of assembly line display where operator can enter/scan the part number and check if the part passed torque and angle validation
  - Quick decision making for sorting good and bad parts
  - Also provides trend of torque/angle/leak failure
A dashboard with good looking charts is not always the best.
Q & A

Khuzema Tikiwala

https://www.linkedin.com/in/khuzema-tikiwala
Thank you for attending!

We value your feedback! Please rate your speaker in the session details in the Schedule.