



PI System Business Integration

Presented by **Michael Luo**
Technical Consultant (Sydney)

Reliability
Millions of Streams
Real-time
Visualization
CBM
Scalability
Asset Framework
PI System
Analytics
Quality
IoT
Connectivity
Sensor-based Data
Big Data
Infrastructure
High Speed
Business Transformation
Security
Connected Services
Operational Intelligence
Regulatory Compliance
Enterprise Agreement
Business Impact
Enterprise
Process
Operational Efficiency
Time Series
Event Frames
Future Data
Energy Management
Streaming Data
Open System
Asset Health
Safety

Do more with what you have

Technology Megatrends



Mobility

By **2016**,
smartphones and tablets
will put power in the
pockets of **a billion**
global citizens.



Social

Millennials will make up
75% of the
workforce by **2025**



Cloud

70%
of organisations are either using
or investigating **cloud**
computing solutions



Big data

Digital content will grow to
2.7ZB in 2012,
up **48% from 2011**,
rocketing toward
8ZB by 2015.

OT/IT Convergence

Democratised data: “....information that once was available to only a select few is now available to everyone” ¹

A system to bridge these
2 converging worlds

Pain Points

- Prepare data for a range needs
- Operational insight
- Ensuring Security & Access



Pain Points

- Create insights from operations & business data
- Unfamiliar with time-series data

¹ <http://googleblog.blogspot.com/2008/09/democratization-of-data.html>



**Geospatial
Integration**

**Vehicle Management
& Tracking**

**Connected
Logistics**

**Emissions and
Environmental Monitoring
And Control**

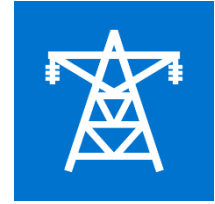


**Drilling
Optimisation**

**Leakage Detection
and Pipeline
Integrity Analytics**

**Fuel
Management**

**Regulatory
Compliance**



**Real-time Grid
Analytics**

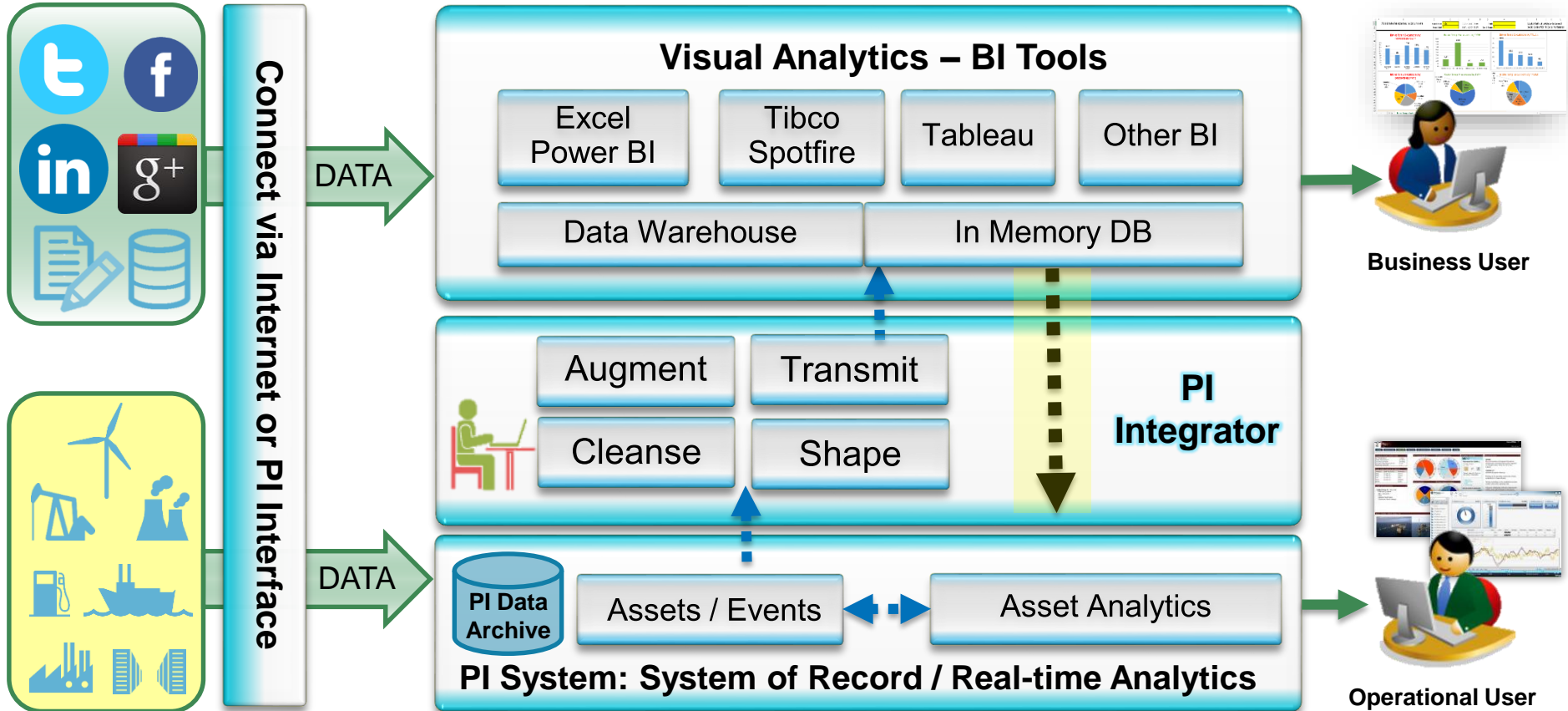
**Outage prevention
and management**

**Consumption and
Load Analytics**

**Demand Response
Management**

Many experts suggest that up to 80% of all time consumed in big data project can be consumed by smart people working out where and how to extract the data before deriving values from the data

PI Integrator for Business Intelligence



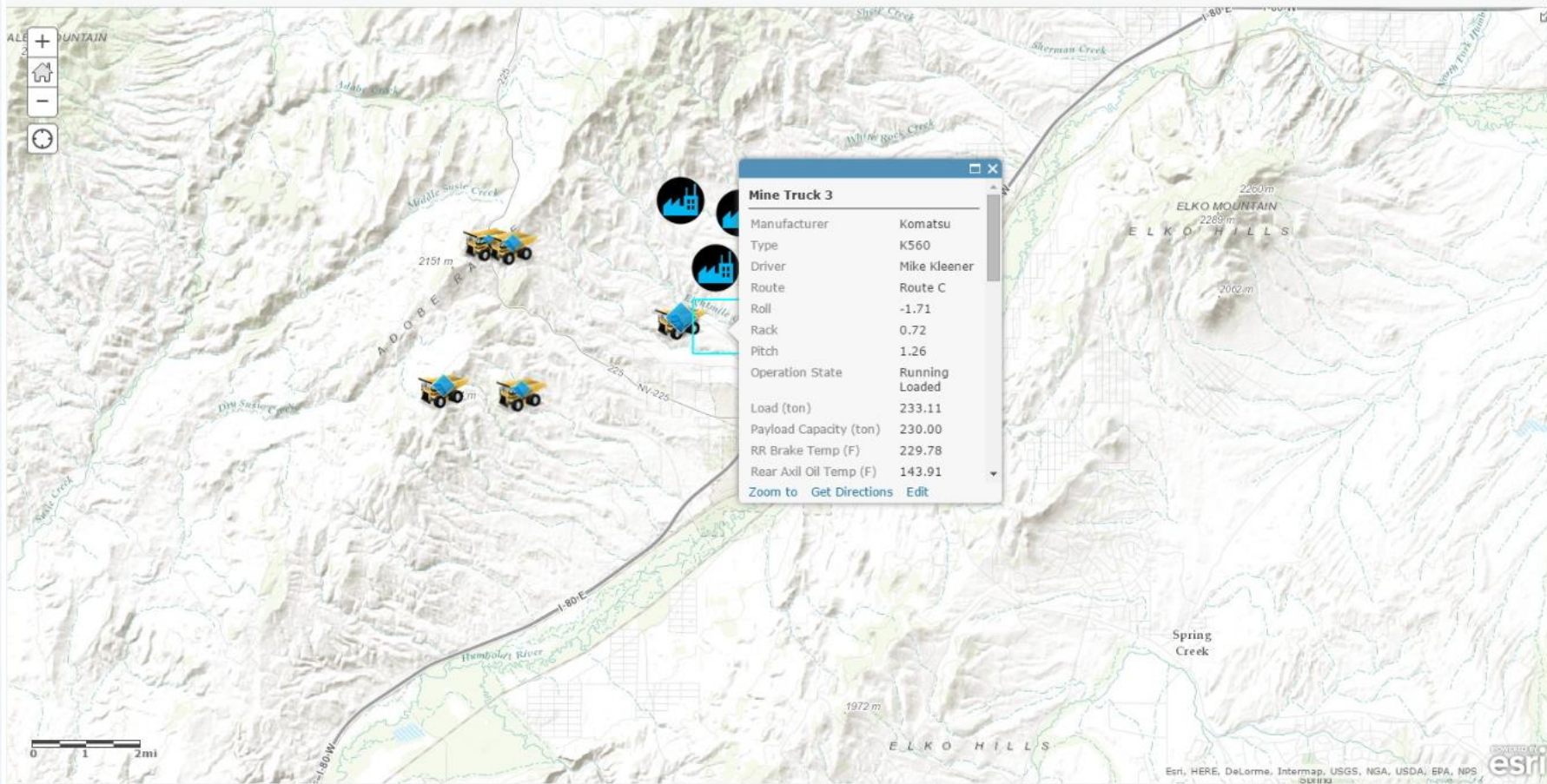
PI Integrator Suite

- **ESRI ArcGIS** (Available now)
 - Compatible with ESRI GeoEvent processor
- **BI Edition** (2015 Q3)
 - Works with any software with an ODBC data source connection
- **Data Warehouse Edition**
 - Create Facts & Measures in Microsoft SQL
- **SAP HANA Edition** (2015 Q4)
 - Automatically creates Virtual Tables via Smart Data Access (SDA)

Details Add Edit Basemap Analysis

Save Share Print Directions Measure Bookmarks

Find address or place



Esri, HERE, DeLorme, Intermap, USGS, NGA, USDA, EPA, NPS





My Workspace

Filter content

Dashboards

Oil and Gas Operations

Reports

You have no reports

Datasets

No datasets found

Oil and Gas Operations

Share Dashboard

Ask a question about the data on this dashboard

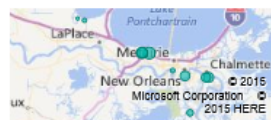
Total Production vs. Target

BY REGION



South Region

FIELD PRODUCTION



Process Utilization

BY PROCESS

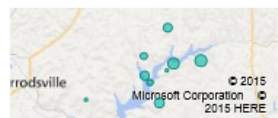


Refinery Scorecard

KPI	KPI Value	Plan Target	Plan Deviation
Conversion	10,651.5	10,752	-100.5
FCC Gasoline (R+...	14,481.6	14,448	33.6
FCC Gasoline RVP	2,066.4	2,100	-33.6
Feed N+2A	20,008.8	20,160	-151.2
Feedrate	5,663,192.2	5,688,816	-25623.8
Isomerate RONC	14,750.4	14,952	-201.6
Light Naphtha 90...	30,223.2	30,240	-16.8
Reactor Temperatu...	327,906.5	330,120	-2213.5
Vacuum Gas Oil 90...	171,864.0	173,040	-1176.0
Total	6,255,144.6	6,284,628	-29483.4

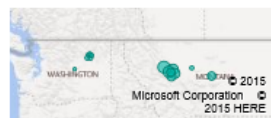
Marine Region

PI CORESIGHT



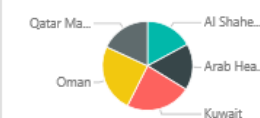
North Region

FIELD PRODUCTION



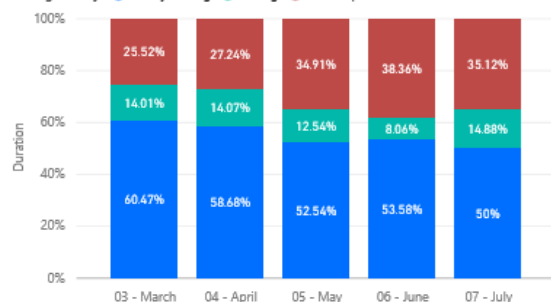
Crude Runs

BY CRUDE



Monthly Drilling Performance

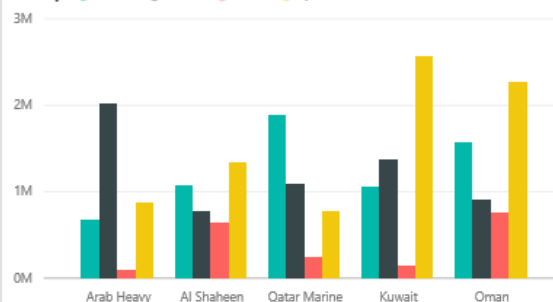
Drilling Activity ● Rotary Drilling ● Sliding ● Stick-Slip



Refinery Rates

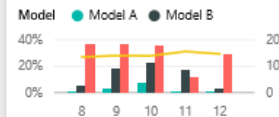
CRUDE RUNS

Refinery ● Bahrain ● Kuwait ● Oman ● Qatar



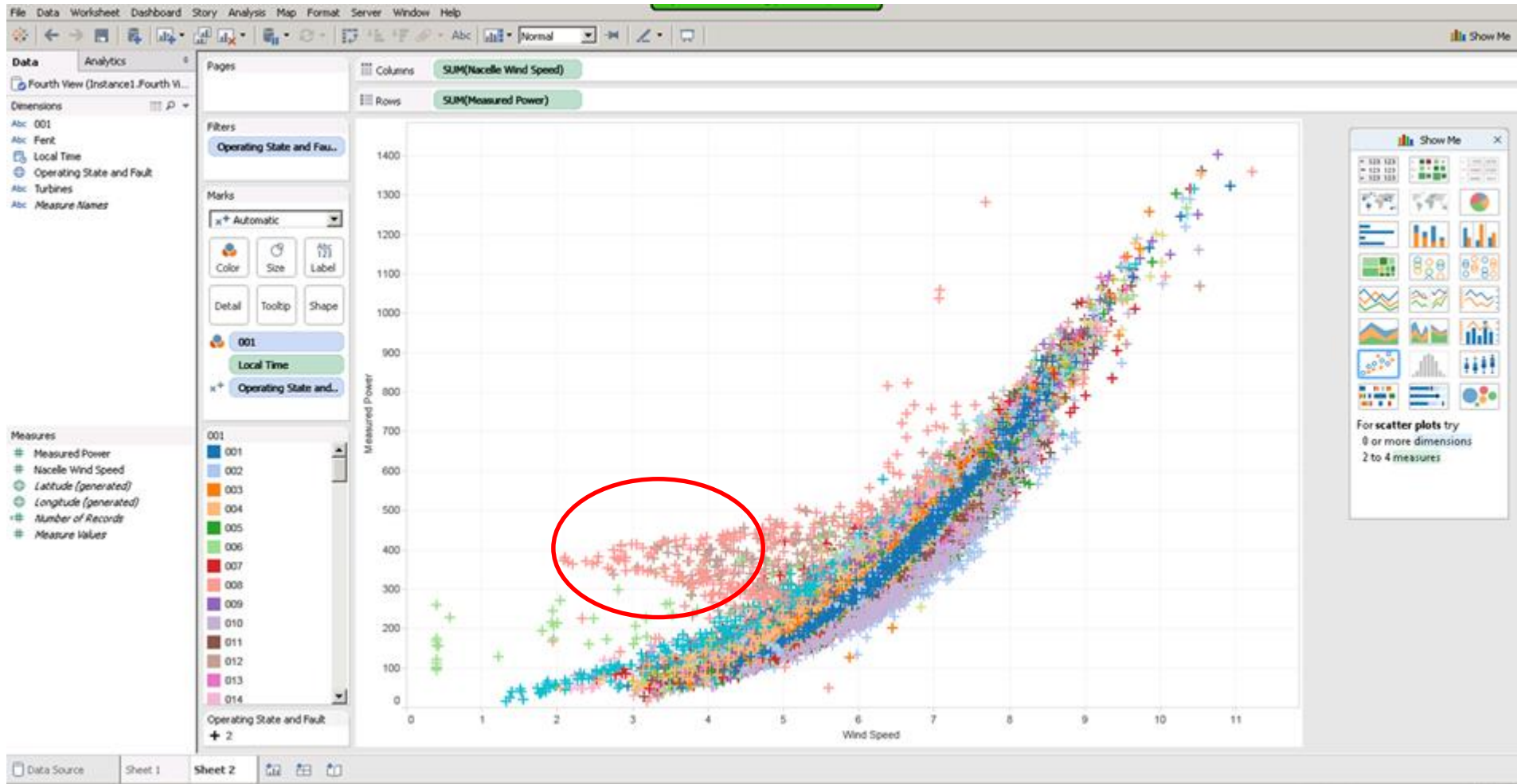
Asset Downtime

BY MONTH, MODEL



Product Inventory

Commodity Group	Net Volume
Distillate	308,870.20
Ethanol	42,726.94
Gasoline	835,106.18
Total	2,005,540.25



Transforming Business and Empowering People



Our managers and engineers are able to get a better idea of how the asset is performing.



Enables us to make faster and better decisions regarding asset performance, which should lead to better production and lower costs!



...spending less time copying and pasting and more time analysing the data.



How can You
Do more with what you have?

Next Steps?

- Release Target
 - Technical Deployment Details
- Start the Conversation Today
 - Architectural Review
 - AF Readiness
 - Data Aggregation
 - Security Model

Contact Information

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Questions

Please wait for the
microphone before asking
your questions



State your
name & company

Please don't forget to...

Complete the Survey
for this session



The **Power of Data**

DECISION READY IN REAL-TIME

Evaluation Form (Seminar Location - Date)

Name: _____ Company: _____

Email: _____

Quality and content of the presentations

Poor Good Excellent N/A

Welcome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Journey To Real-Time Operational Intelligence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Power of Connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tank Level Management System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the PI System to Aid in Troubleshooting Operational Aspects of Oil and Gas Well Drilling and Completion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unleash your Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on the Spot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wrap-up/Seminar Conclusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Quality and organization of the seminar

Choice of date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time allowed for lunch/breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choice of presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Break and time allowed for the presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado