How To Gain A Competitive Advantage by Actually Implementing Real-Time Data Analytics

Presented by:

Sebastian Titze

Terry Brown

BEUMERGROUP

MODEX 2020
GEORGIA WORLD CONGRESS CENTER
ATLANTA | MARCH 9-12
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Agenda

- Megatrend: Dematerialization
- Make Data Available
- Create Knowledge
- Actionable Takeaways
- Not the End of Story

Megatrend: Dematerialization

Sources: Forbes, 2019; Chini Mandi, 2019; USA Today, 2019

Megatrend: Dematerialization

Sources: © Filipe Pinto, 2010

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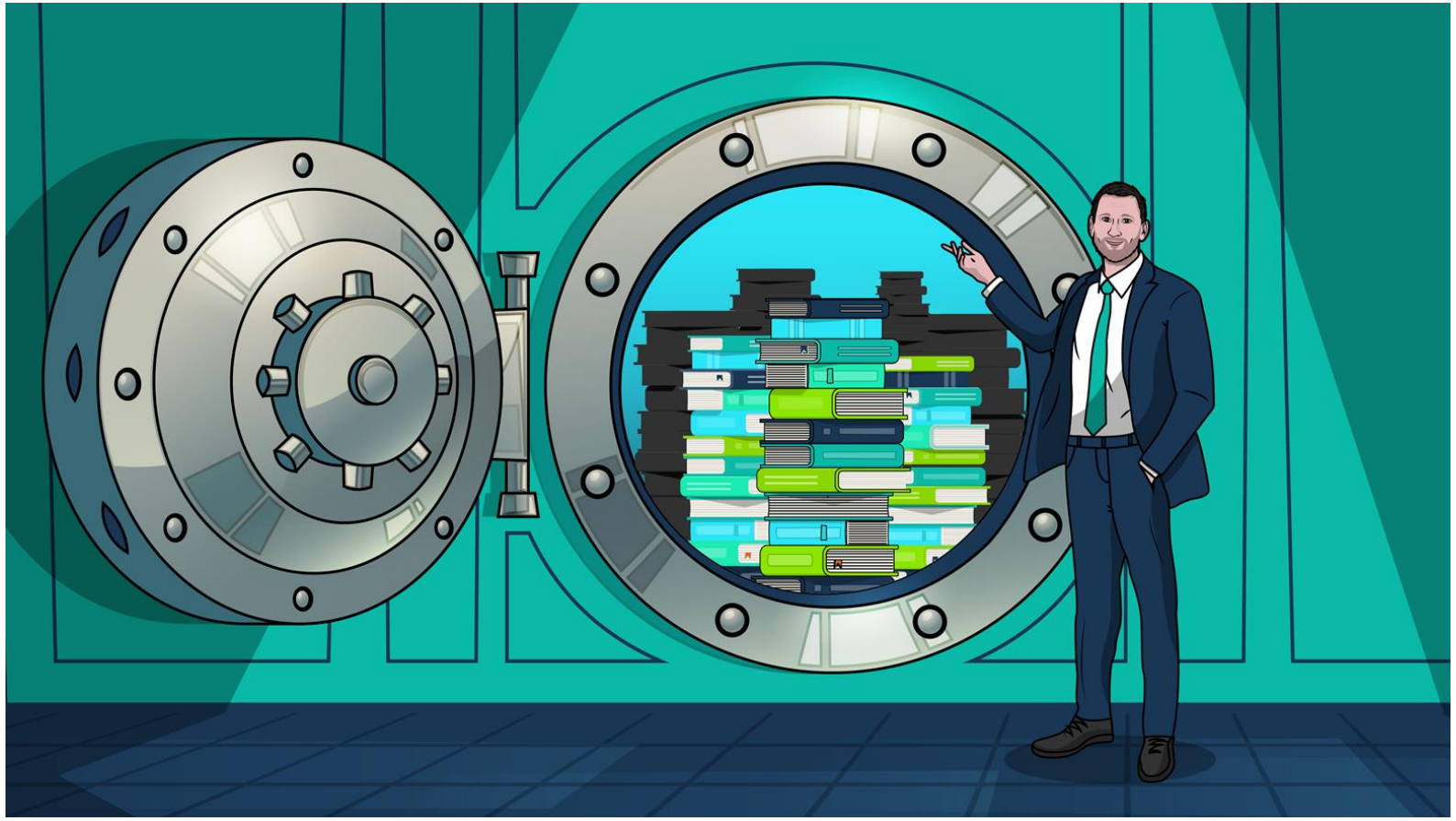
Megatrend: Dematerialization

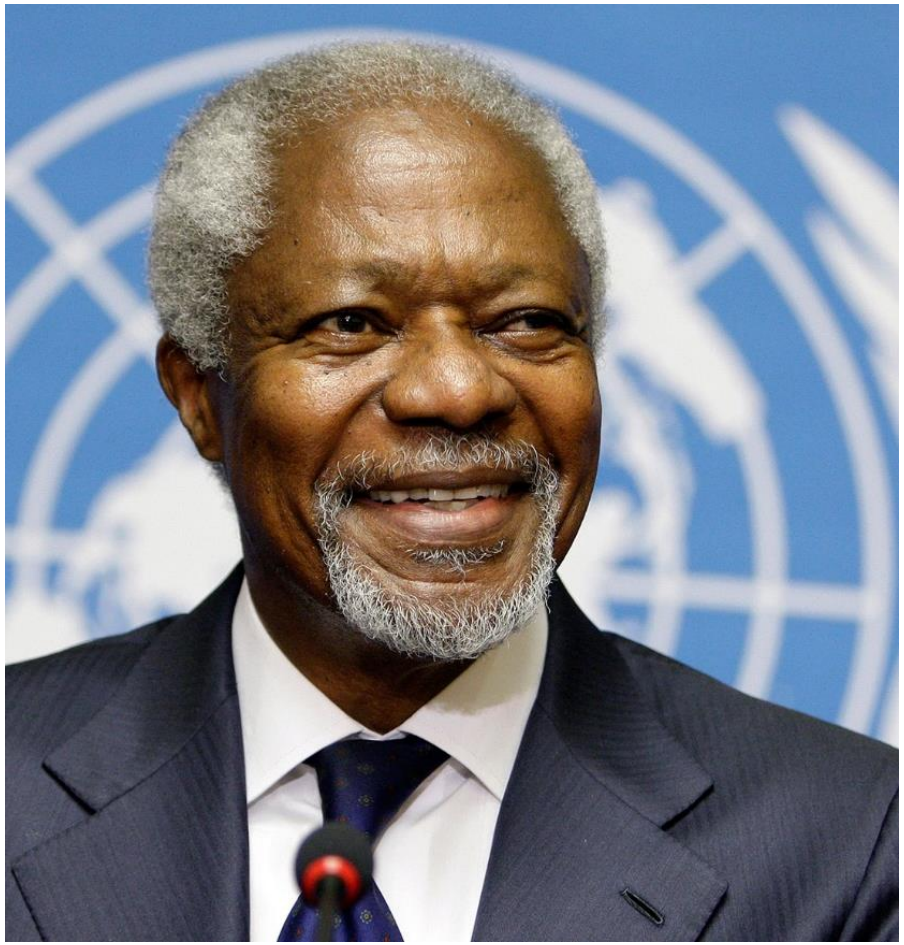


Welcome to the

Knowledge Economy

Source: Growth Engineering, 2019

Megatrend: Dematerialization



Knowledge is power.
Information is liberating.

Education is the premise of progress,
in every society, in every family.

Kofi Annan,

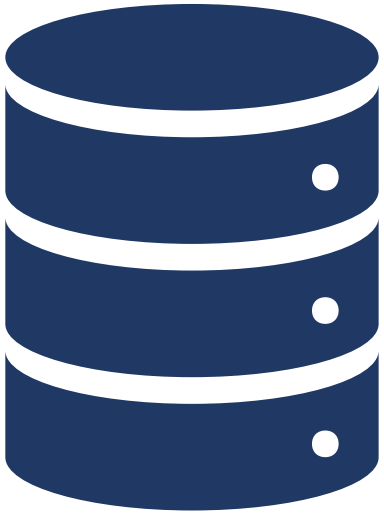
Seventh Secretary General of the United Nations

Source: Financial Times, 2019

Megatrend: Dematerialization

Source: National Science Foundation of Georgia, 2019

Make Data Available



API

Log Files

??

```
{ "_index": "statcom-Retailer-2019.12.18-000003", "_type": "_doc", "_id":
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"2020-01-28T18:21:59.790Z", "Year": "2020", "systemPartId": "induction#1", "docMeta": { "majorName": “Retailer", "timezone":
"Europe/London", "location": { "lat": 52.8975, "lon": -1.4232 }, "logstashTimestamp": "2020-01-28T18:07:14.815Z",
"kafkaTimestamp": "2020-01-28T18:07:14.419Z", "logstashHost": "9187f21a79f7", "minorName": “Retailer", "sequenceNumber":
215160265, "logFilename": "statcom-200128.log", "systemComponent": "CIS", "logPath": "G:\\systems\\retailer_cis" }, "event":
"ItemCreatedEvent", "HourOfDay": "18", "DisplayName": "SORTER.IND0102", "partId": "sorter#0.induction#1", "systemId":
"sorter#0", "globalId": "120134099", "YearWeek": "2020_W05", "DayOfWeek": "2 (Tue)", "DayOfMonth": "28", "Month": "01" },
"fields": { "docMeta.logstashTimestamp": [ "2020-01-28T18:07:14.815Z" ], "@timestamp": [ "2020-01-28T18:21:59.790Z" ],
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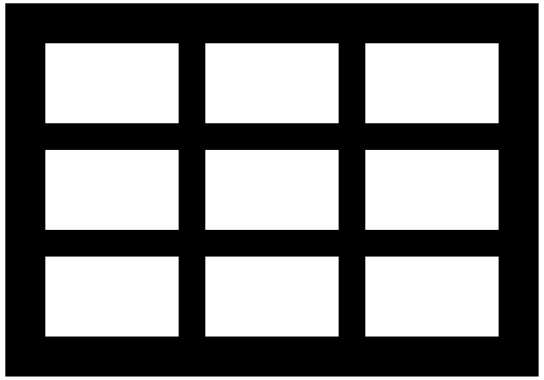
Step 2



Organize Data

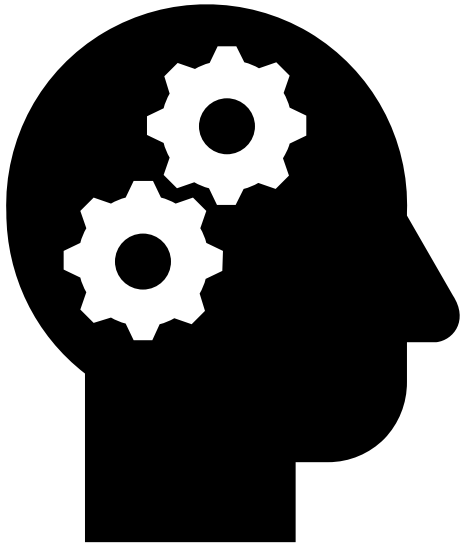
Demo-Single-Sorter: Discharge failures - Count grouped by Discharge Failed Reason over Time

View: Data

Download CSV

@timestamp per minute	sortationReason.keyword: Descending	Discharge Failed
12:36	ITEM_ON_ACTIVATED_CARRIER	1
12:36	TRAY_SPACING_H	1
12:37	ITEM_ON_ACTIVATED_CARRIER	1
12:38	ITEM_ON_ACTIVATED_CARRIER	1
12:39	ITEM_ON_ACTIVATED_CARRIER	1
12:40	ITEM_ON_ACTIVATED_CARRIER	2
12:42	ITEM_ON_ACTIVATED_CARRIER	2
12:42	CHUTE_BLOCKED	1
12:43	ITEM_ON_ACTIVATED_CARRIER	1
12:44	ITEM_ON_ACTIVATED_CARRIER	1
12:44	TRAY_SPACING_H	1
12:45	ITEM_ON_ACTIVATED_CARRIER	1
12:45	TRAY_SPACING_H	1
12:46	ITEM_ON_ACTIVATED_CARRIER	1
12:47	ITEM_ON_ACTIVATED_CARRIER	2
12:47	TRAY_SPACING_H	2
12:48	ITEM_ON_ACTIVATED_CARRIER	1

Step 3



Create Insights

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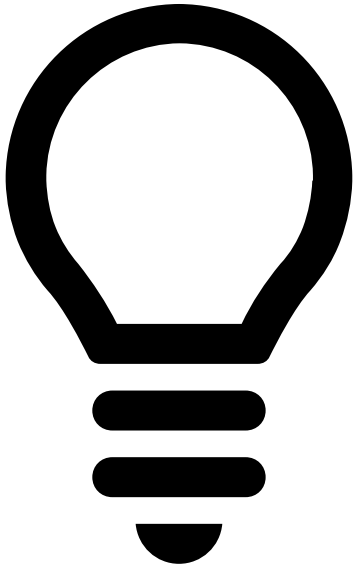
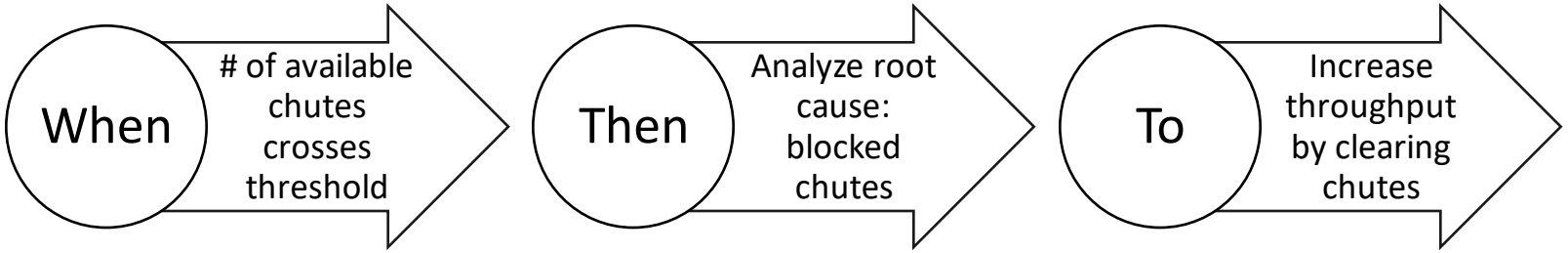
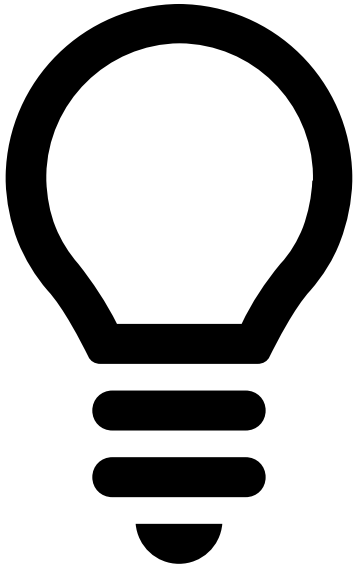
Create Knowledge



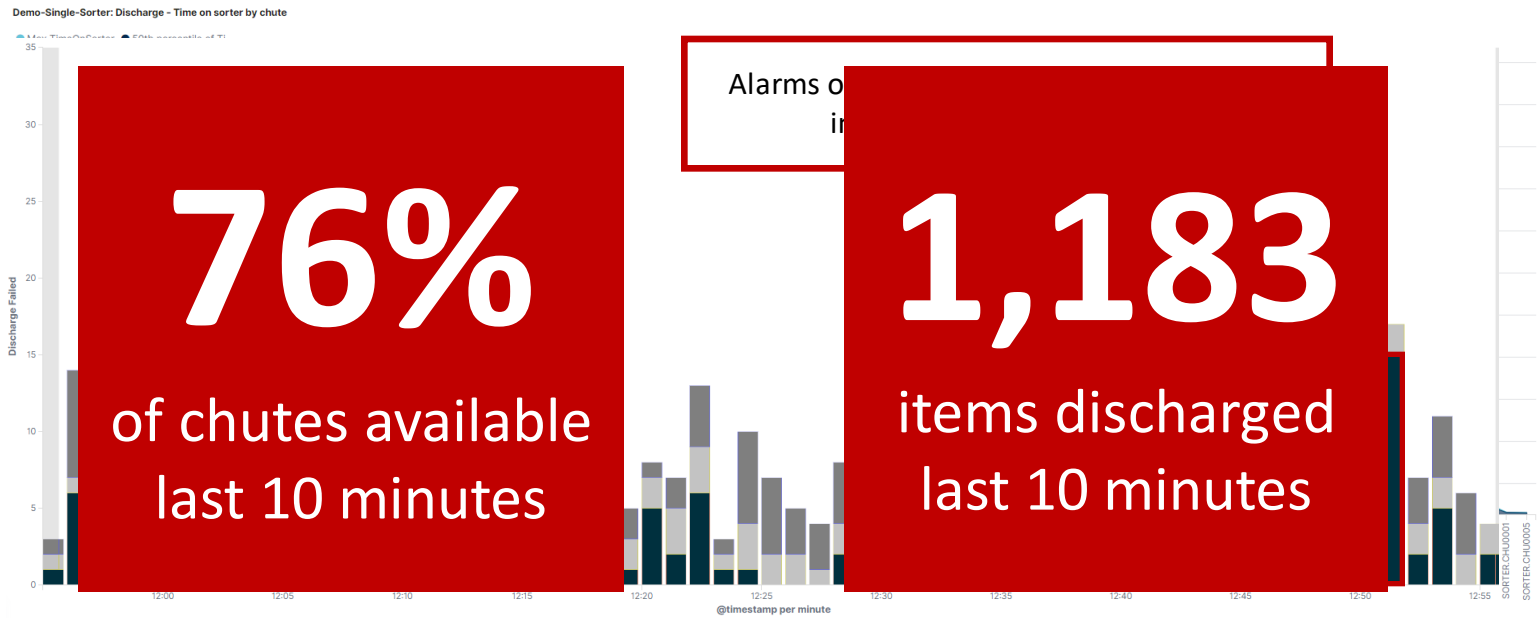
Create Knowledge



Create Knowledge



Create Knowledge



Actionable Takeaways

Improve Operations

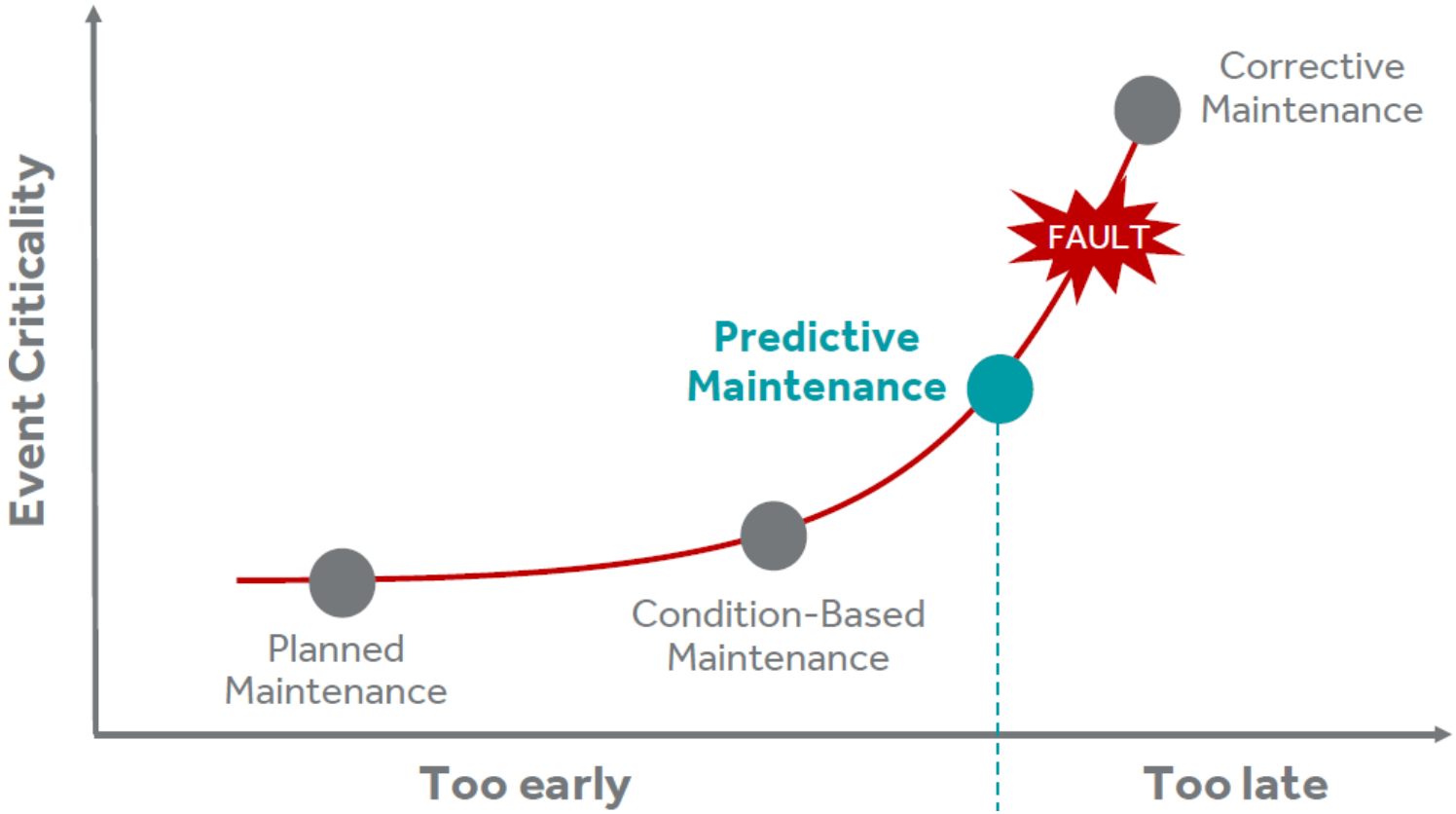
94%

of chutes available last 10 minutes

1,418

items discharged last 10 minutes

Not The End of Story



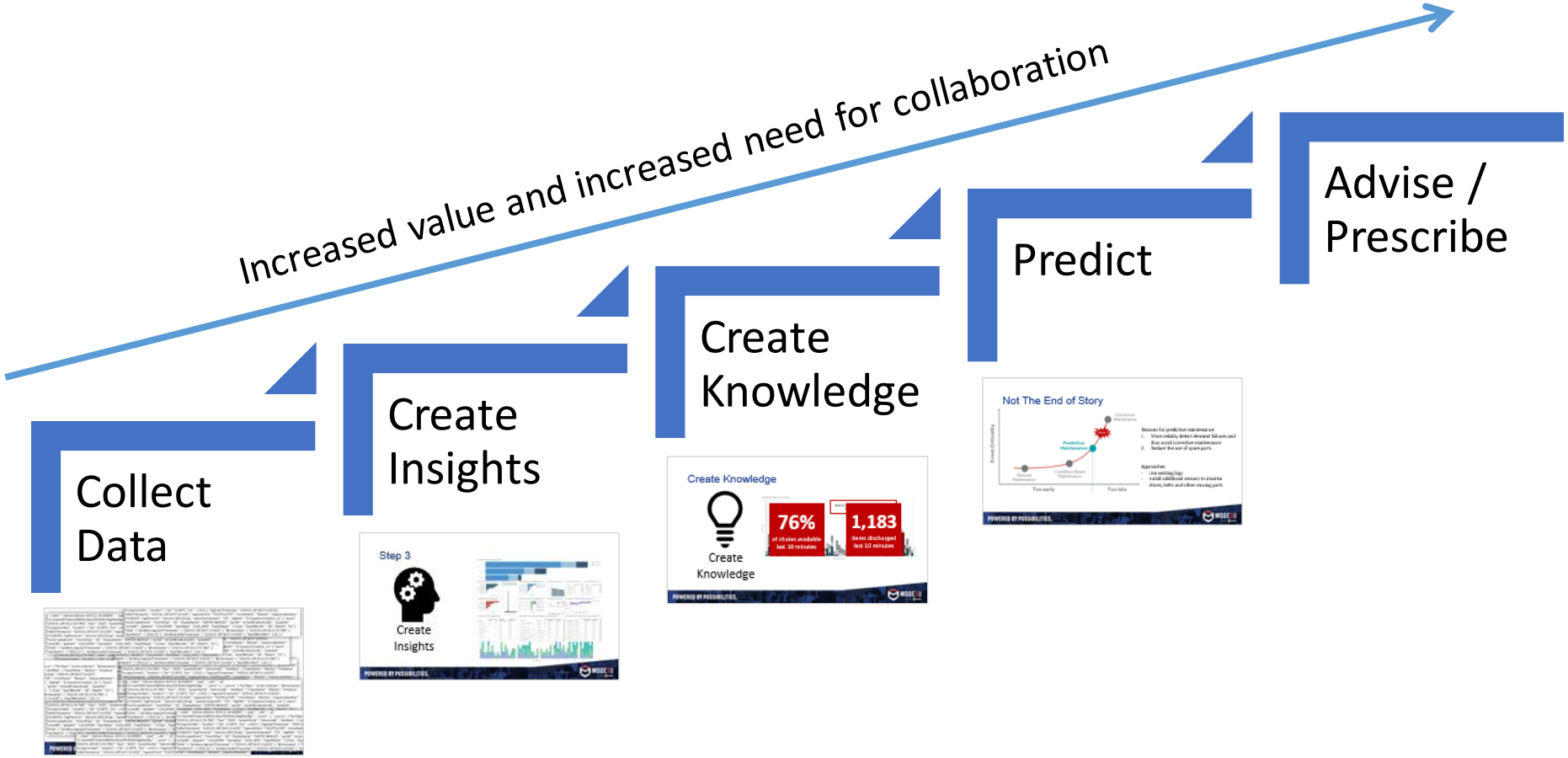
Reasons for predictive maintenance

1. More reliably detect element failures and thus avoid corrective maintenance
2. Reduce the use of spare parts

Approaches

- Use existing logs
- Install additional sensors to monitor drives, belts and other moving parts

Not The End of Story



Continue the Conversation

Sebastian Titze
BEUMER Group
Business Development & Strategy Manager
sebastian.titze@beumer.com

Terry Brown
BEUMER Group
Director of Sales, Sortation & Distribution
terry.brown@beumer.com

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Download a checklist of questions to get started today:

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Getting Started with Real-time Data
Checklist

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- ☐ How do I define success and what are the variables that lead success or stop me from being successful?
- ☐ What type of data can I collect?
- ☐ Which setup do I need to make data available at scale?
- ☐ How can data be organized to make use of it?
- ☐ Which data points can I connect and visualize to create insights?
- ☐ What do I learn about root cause effects from the different trends I analyze?
- ☐ How do I improve my operations based on the new knowledge?
- ☐ Can I find trends and outcomes before they will happen?
- ☐ How can I measure improvements in operating my equipment?