American Airlines

CONTEXTUAL ANALYTICS USING SPSS TEXT ANALYTICS AND COGNOS 11 IN THE AIRLINE INDUSTRY

Jay Solavaram
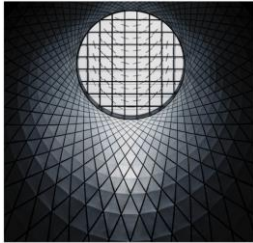**Tommy Sorrells**

FLIGHT FEEDBACK

- Team members can submit reports on service issues that may occur for any given flight

- The goal is automate the processing of comments on a daily basis to identify key trends and concerns

2/20/2018

TEXT MINING

AAdvantage AgentConcerns Baggage **Boarding** Cabin CabinInteriors Captain

Beverage Food Complaints DoubleProvisioning Entertainment

Equipment Exits HotelLimo Kits Lavatory MedicalNeeds **Passengers**

Seating SpecialIssues Supplies WirelessInternet ExePlatinum Gold

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Text Mining – Behind the scenes…

Sample Comment:

> We had 8 inoperative tablets, pax were not happy; we are having issues with these units.

We had 8 inoperative tablets, pax were not happy; we are having issues with these new units. "

Passengers

Entertainment   **Agent Concerns**

Negative Functioning

Negative Sentiment

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METHODOLOGY

TAXONOMY

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IBM SPSS Modeler Text Mining Model

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DASHBOARD

Using Cognos dashboards, American now has the ability to detect and address problems before they propagate.

Disclaimer – All data displayed here is simulated

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Analyzing SPSS Output

SPSS offers two formats of text analytics output:

Narrow:
- Consists of identifiers and key words
- One row for each key word.

Wide:
- Consists of identifiers and binary field
- One row per text

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Flt Date	Flt No	Depart	Arrive	Category
2017-06-29	2623	DFW	TPA	Beverage_Coffee
2017-06-29	2623	DFW	TPA	Food_FoodForSale_SnackBox
2017-06-29	2688	MIA	TGU	Supplies_Cart
2017-06-30	1045	SFO	ORD	Lighting_Seats

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Wide:
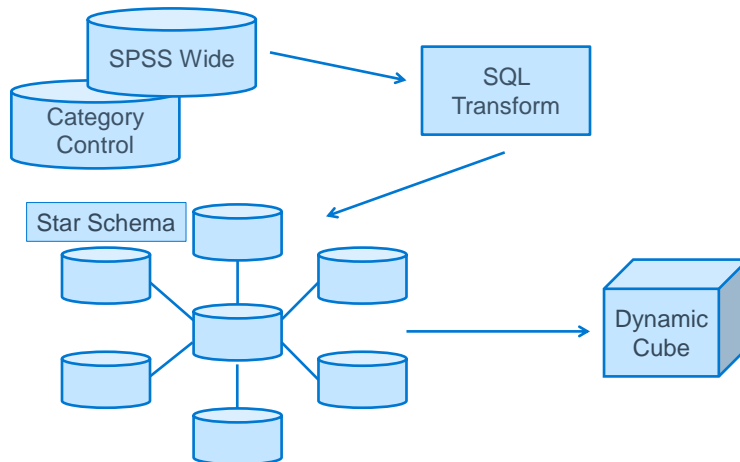- Consists of identifiers and binary field
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Flt Date	Flt No	Depart	Arrive	Beverage_Coffee	...	Food_FoodForSale_SnackBox	...	Lighting_Seats	Supplies_Cart
2017-06-29	2623	DFW	TPA	1	0	0	0	0	0
2017-06-29	2623	DFW	TPA	1	0	1	0	0	1
2017-06-29	2688	MIA	TGU	0	0	0	0	1	0
2017-06-30	1045	SFO	ORD	0	0	1	0	0	1

Data Transformation

RESULTS AND FUTURE SCOPE

Responsiveness is improved since dashboards allow for
responsible departments to see trends on a daily basis and
react rapidly.

Support for operational performance is improved by each airport
using results of text analysis to prioritize initiatives and
accelerate response.

Management is empowered by having a better view of frontline
issues on a daily basis rapidly.

Contextual Analytics gives American the ability to gather and
process data from other sources which will provide a more
complete picture of what our frontline employees are saying.

Questions?

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Thank you!