

Business Analytics and Data Driven Decision Making

Session#02: Lecture#03: Frameworks for Business Data Analytics

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DEAL Website: <https://www.torontomu.ca/tedrogersschool/digital-enterprise-analytics-and-leadership/>

Faculty Web: <https://www.torontomu.ca/information-technology-management/faculty-research/ravi-vatrapu/>



Three Stage of Analytics Adoption

	ASPIRATIONAL	EXPERIENCED	TRANSFORMED
Motive	<ul style="list-style-type: none"> •Use analytics to justify actions 	<ul style="list-style-type: none"> •Use analytics to guide actions 	<ul style="list-style-type: none"> •Use analytics to prescribe actions
Functional proficiency	<ul style="list-style-type: none"> •Financial management and budgeting •Operations and production •Sales and marketing 	<ul style="list-style-type: none"> •All Aspirational functions •Strategy/business development •Customer service •Product research/development 	<ul style="list-style-type: none"> •All Aspirational and Experienced functions •Risk management •Customer experience •Work force planning/allocation •General management
Business challenges	<ul style="list-style-type: none"> •Competitive differentiation through innovation •Cost efficiency (primary) •Revenue growth (secondary) 	<ul style="list-style-type: none"> •Competitive differentiation through innovation •Revenue growth (primary) •Cost efficiency (secondary) 	<ul style="list-style-type: none"> •Competitive differentiation through innovation •Revenue growth (primary) •Profitability acquiring/retaining customers (targeted focus)
Key obstacles	<ul style="list-style-type: none"> •Lack of understanding how to leverage analytics for business value •Executive sponsorship •Culture does not encourage sharing information 	<ul style="list-style-type: none"> •Lack of understanding how to leverage analytics for business value •Skills within line of business •Ownership of data is unclear or governance is ineffective 	<ul style="list-style-type: none"> •Lack of understanding how to leverage analytics for business value •Management bandwidth due to competing priorities •Accessibility of the data
Data management	<ul style="list-style-type: none"> •Limited ability to capture, aggregate, analyze or share information and insights 	<ul style="list-style-type: none"> •Moderate ability to capture, aggregate and analyze data •Limited ability to share information and insights 	<ul style="list-style-type: none"> •Strong ability to capture, aggregate and analyze data •Effective at sharing information and insights

And now, let us hear
about your organizational unit

[RECOMMENDATION 1]

First, Think Biggest

Focus on the biggest and highest-value opportunities

[RECOMMENDATION 3]

Make Analytics Come Alive

Embed insights to drive actions and deliver value

[RECOMMENDATION 2]

Start in the Middle

Within each opportunity, start with questions, not data

[RECOMMENDATION 4]

Add, Don't Detract

Keep existing capabilities while adding new ones

[RECOMMENDATION 5]

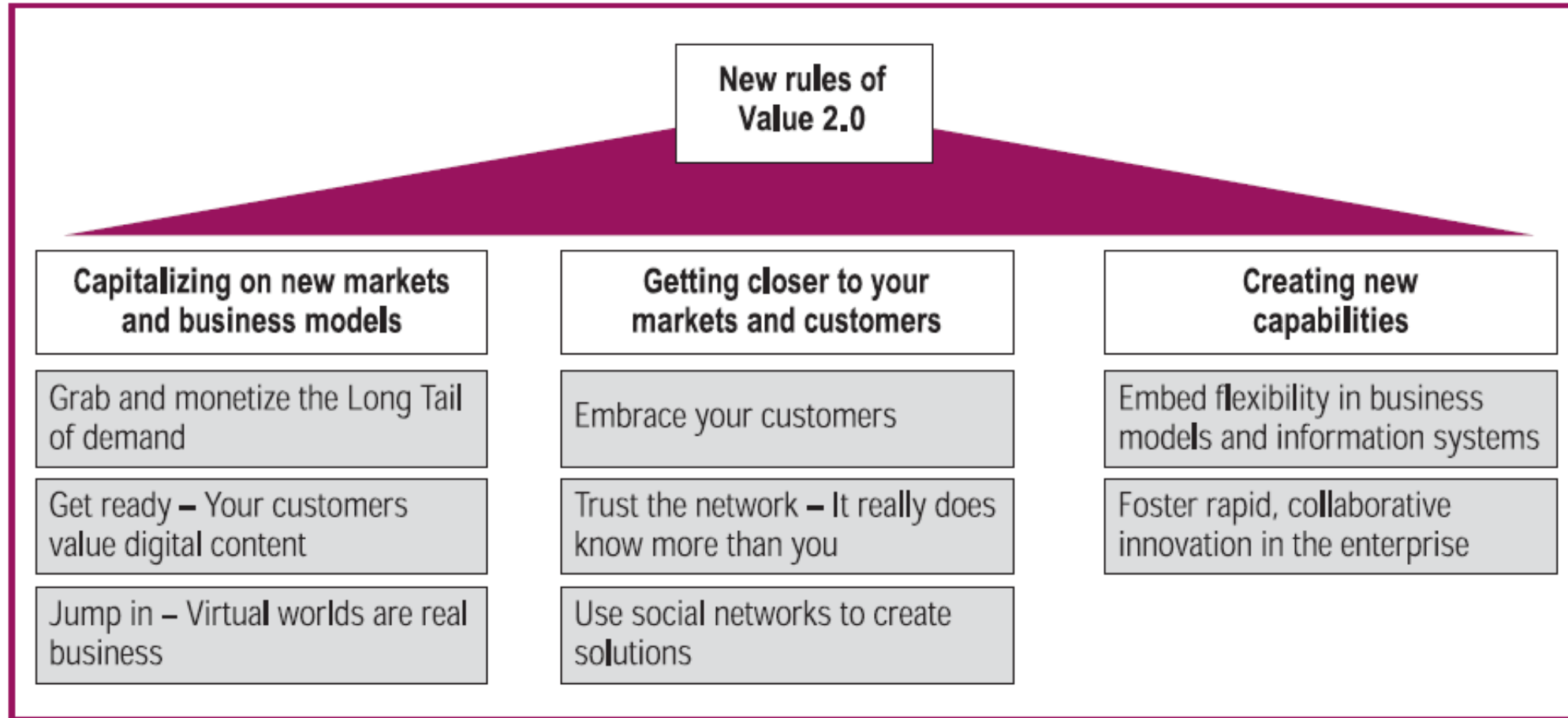
Build the Parts, Plan the Whole

Use an information agenda to plan for the future

Frameworks for Business Data Analytics

Opportunities: Business Value = In-House Data + Big Data

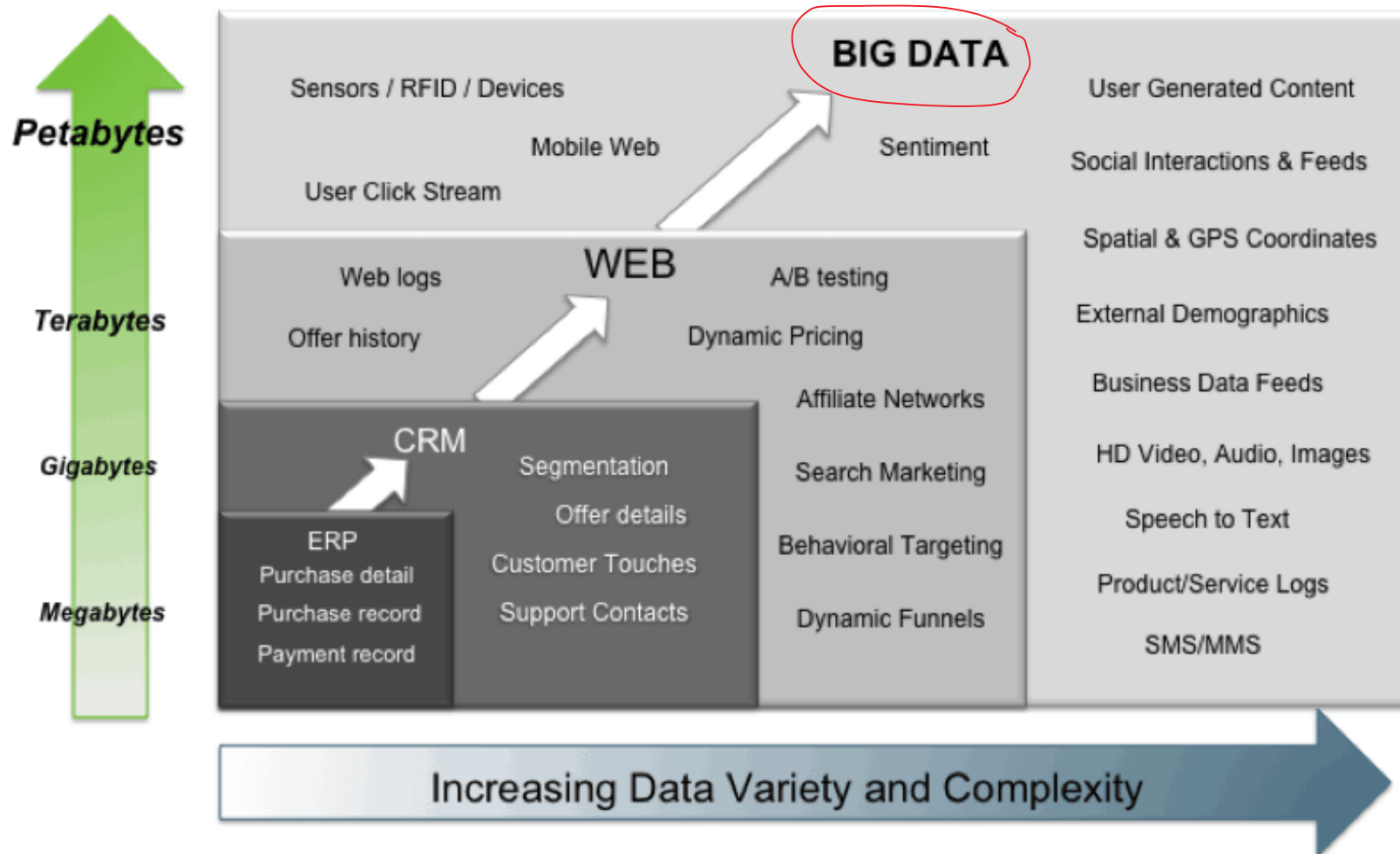
Porta, M., House, B., Buckley, L. & Blitz, A. (2008)



Joe Bugajski, VP & CDO in 2001

Key Challenge: How to Combine and Analyse In-House Data with Big Data?

Big Data = Transactions + Interactions + Observations



Source: Contents of above graphic created in partnership with Teradata, Inc.

BUSINESS DATA ANALYTICS FRAMEWORK

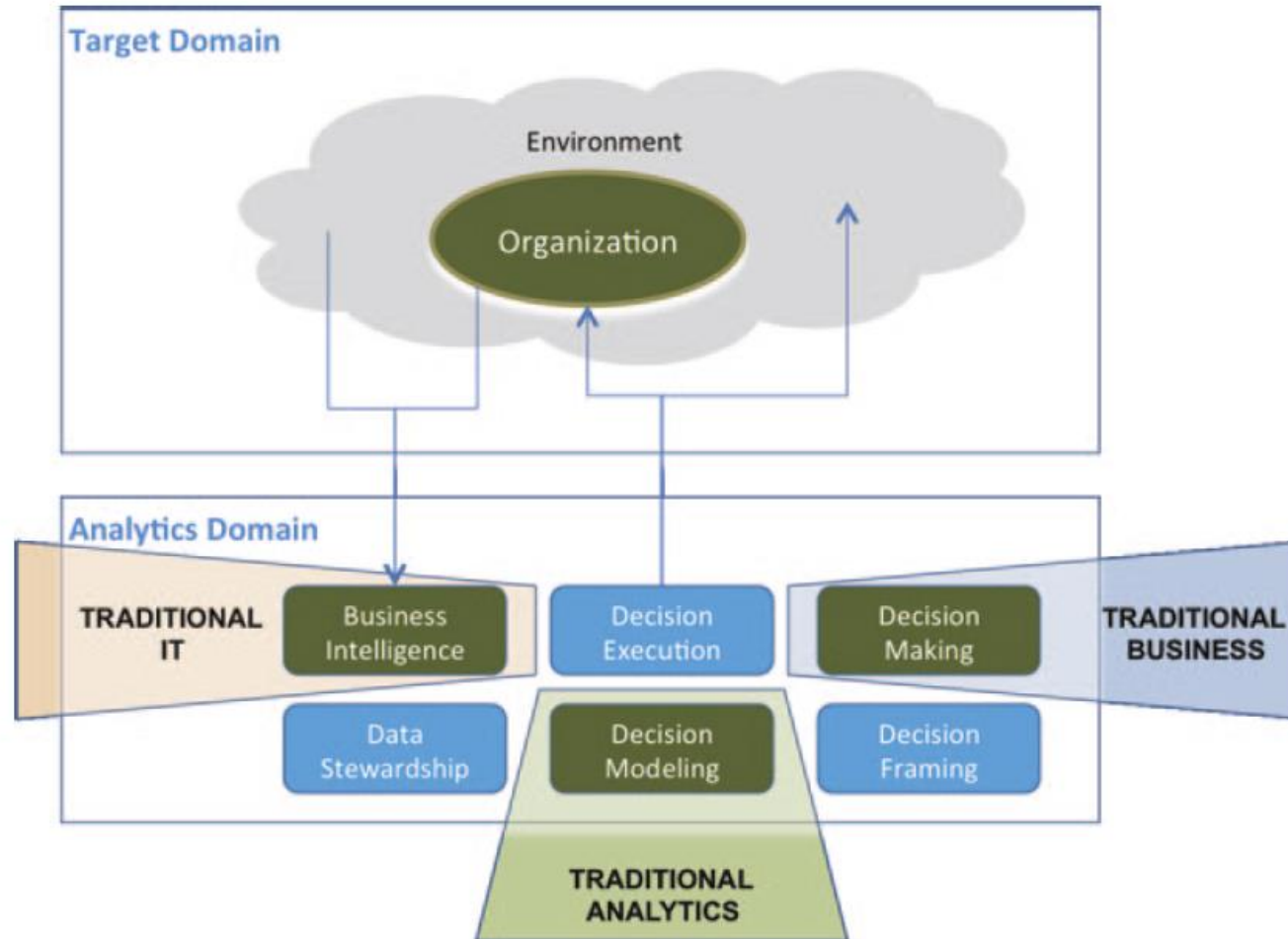


Fig. 1.2 A framework for analytics

Chapters 01, 07, 10 & 11 of Saxena, R. & Srinivasan, A. 2013. Business Analytics: A Practitioner's Guide, Springer New York.

BUSINESS DATA ANALYTICS: PATHWAYS

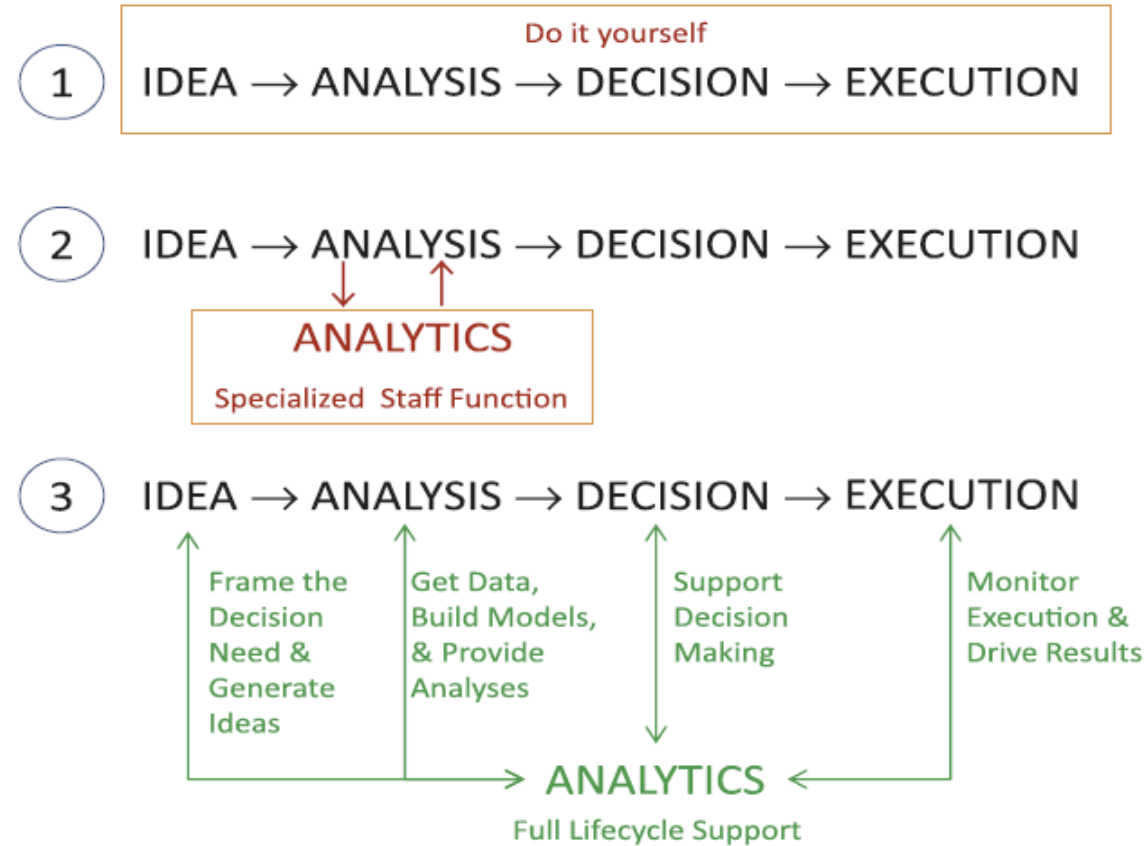
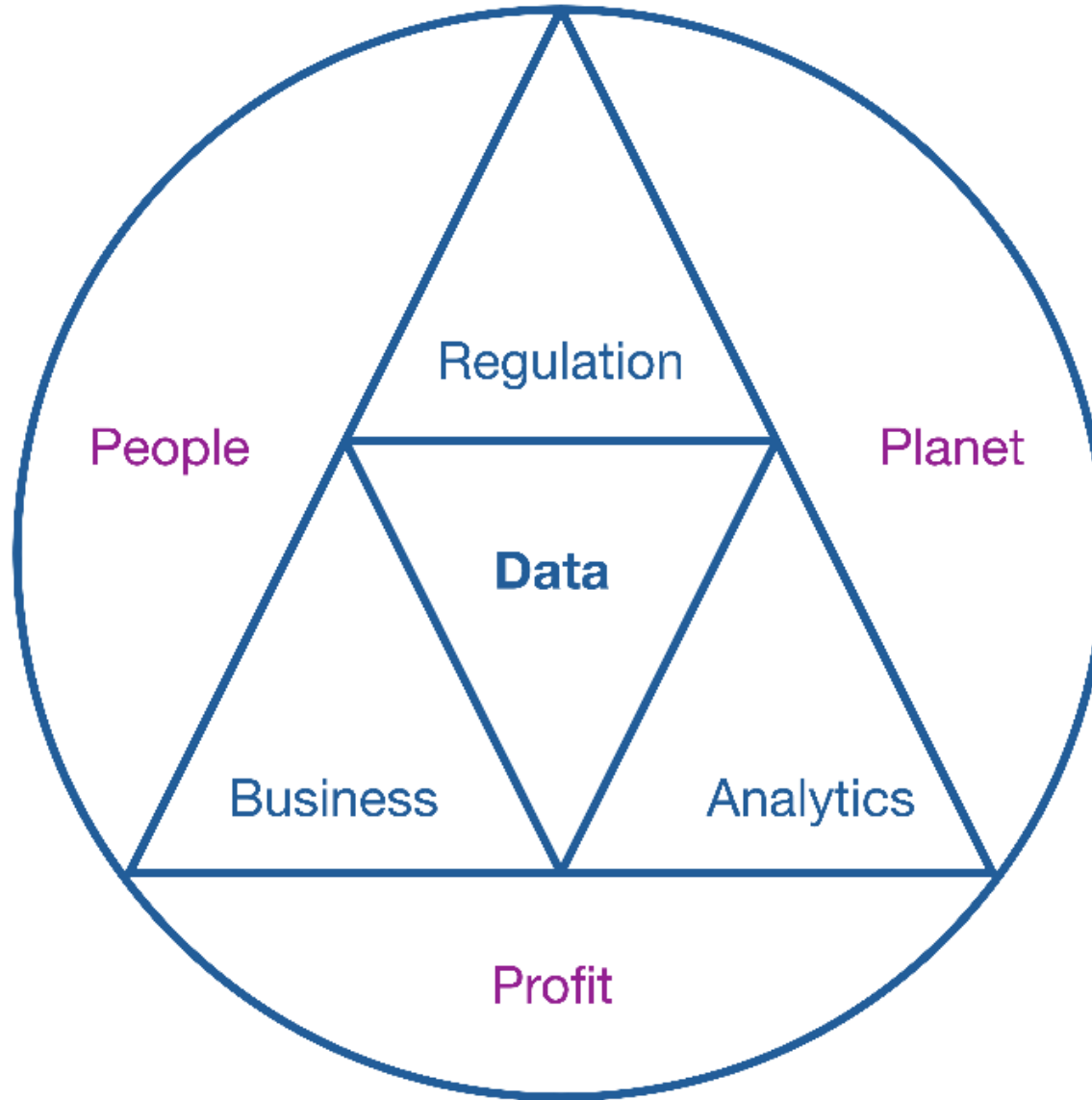


Fig. 1.1 Analytics pathways

cbsBDA Strategic Framework for Business Data Analytics



cbsBDA Reporting Framework for Business Data Analytics

Meaningful Facts

Face Validity
Blindingly Obvious
Water Flows Downhill
Makes Sense
Doesn't Make Sense
Interesting but Irrelevant
Interesting and Important
Contradictory
Eureka!

Actionable Insights

Continue Doing More
Continue Doing Less
Do Differently
Start Doing New
Stop Doing Old
Do Not Ever Do

Valuable Outcomes

Short-Term
Medium-Term
Long-Term

Sustainable Impacts

People
Planet
Profit

Business Value

Visual Analytics

ROSKILDE FESTIVAL

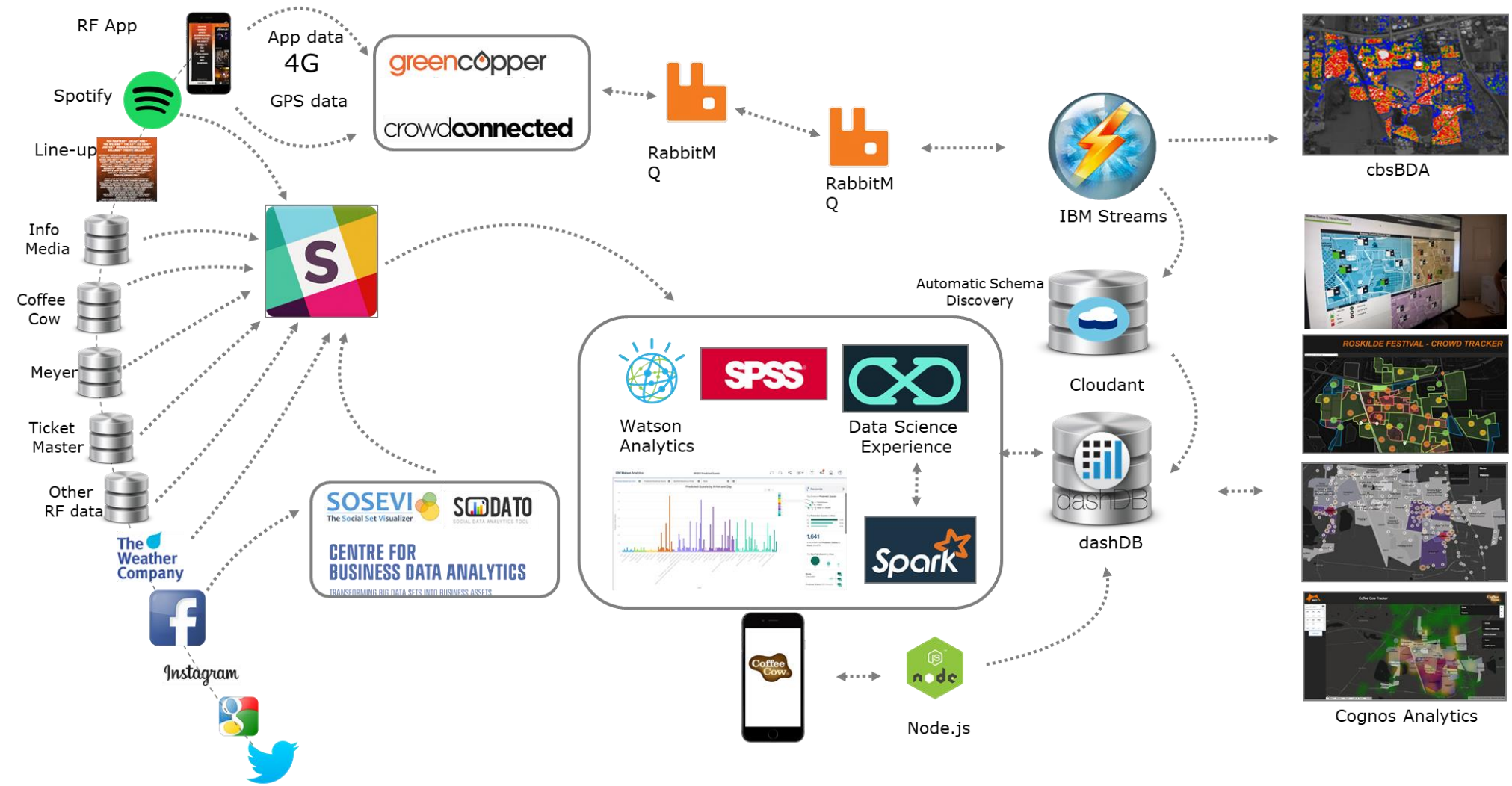


IT infrastructure - CBS BIG DATA LAB RF 2017

Rush hour: 1 GB/sec

Governance

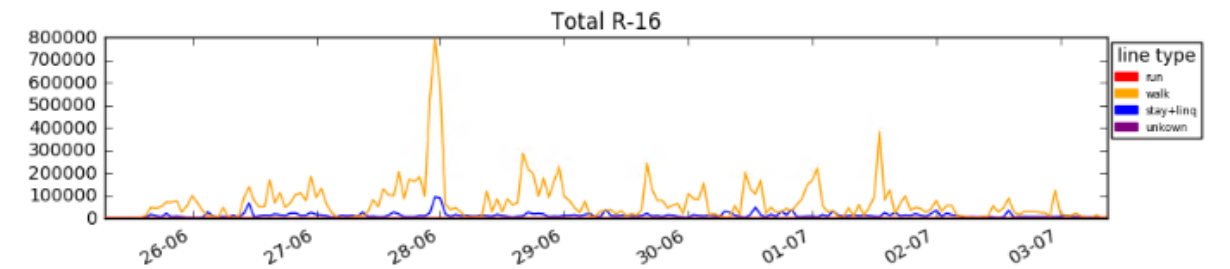
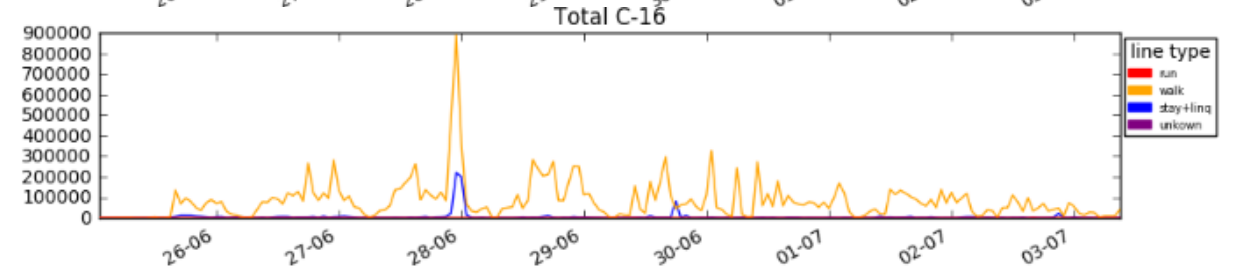
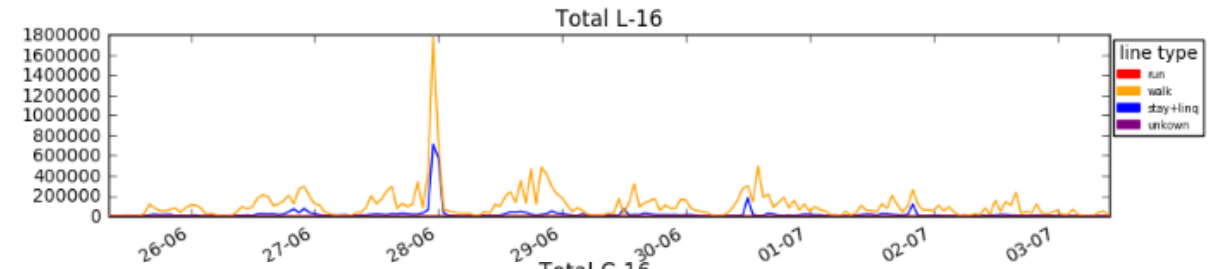
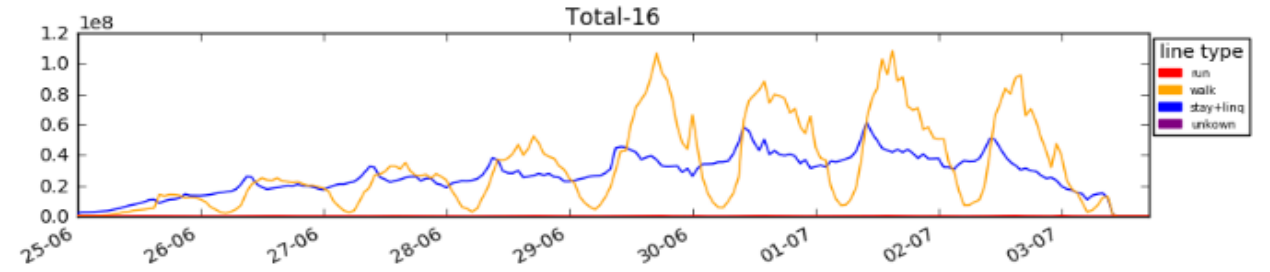
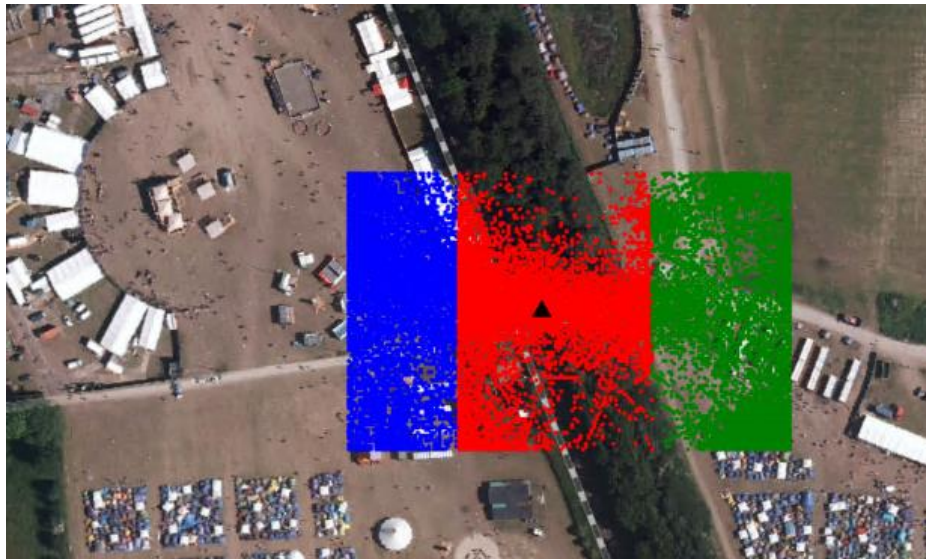
Ikke personhenførbare data



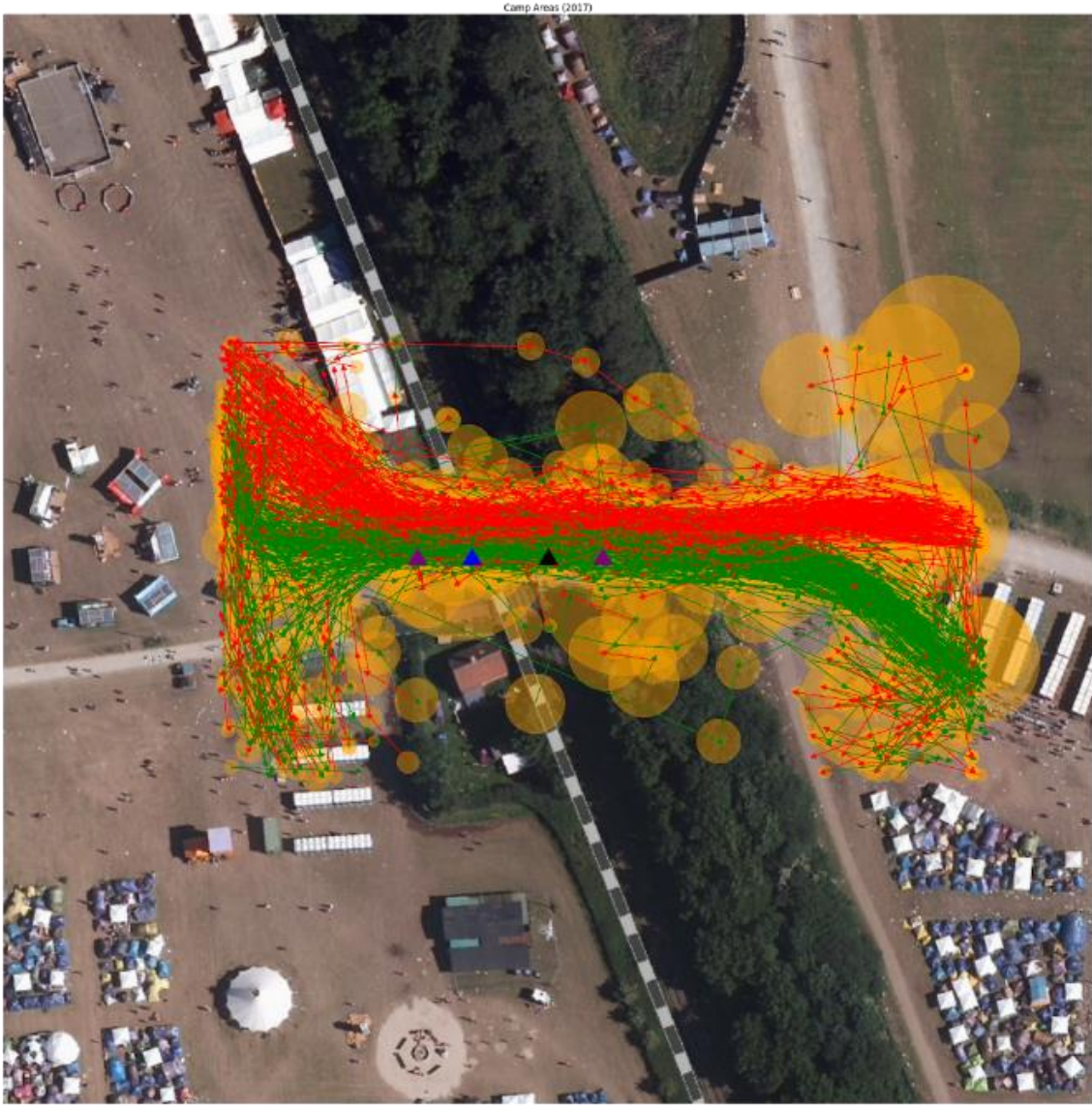
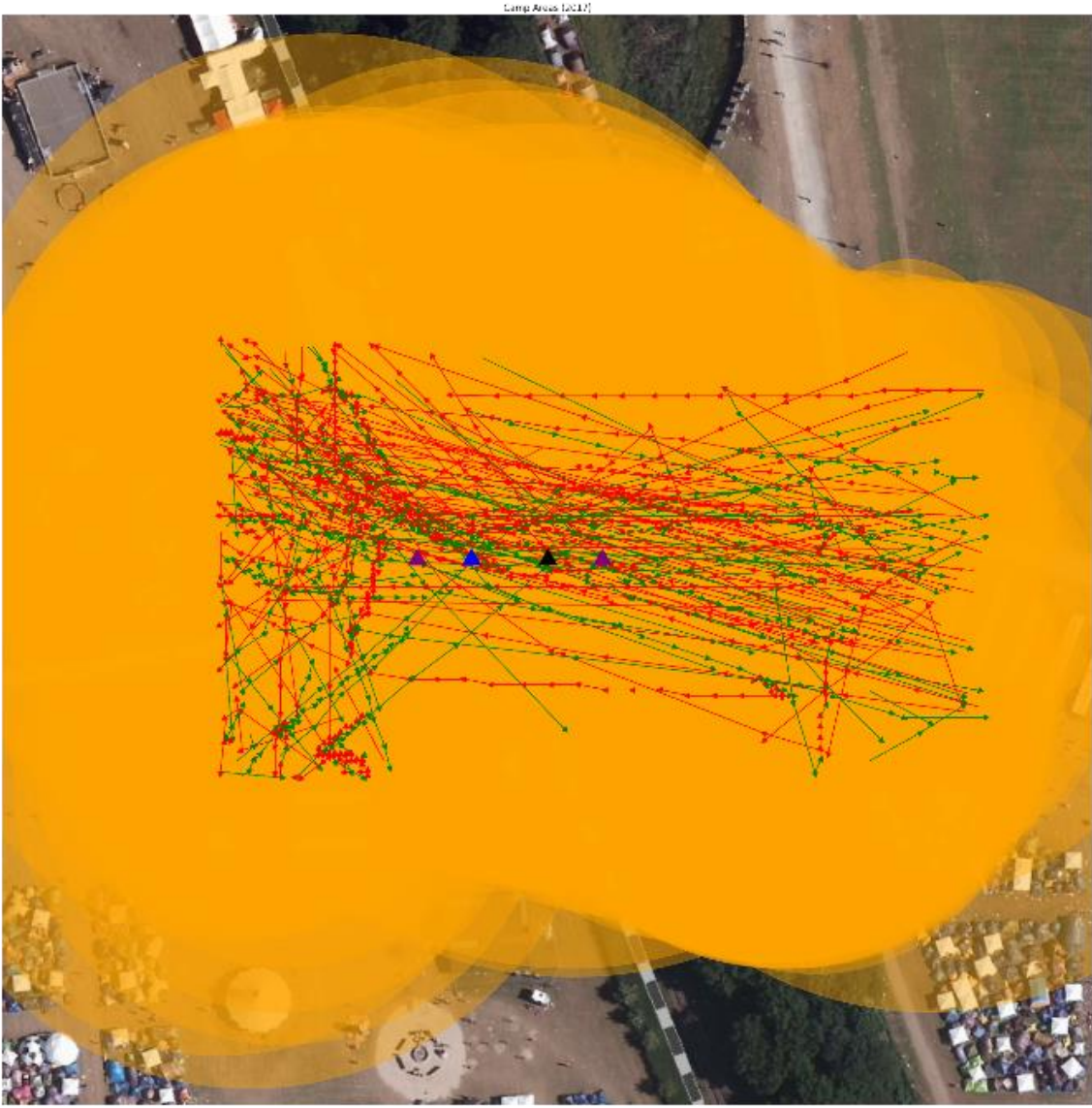
RF 16: The Bridge Incident



BoundBoxes Left, Center and Right of Bridge



RF: Bridge Trajectories: 2016 vs. 2017



Text Analytics

Business Data Analytics: AS IS

Sports Wireless Bluetooth Headset Carrying Case, Fit Jabra Sport Plus, Pulse, Step, Rox, Sony MDRAS200, MDR-J10, MDR-AS200 / Sweat Proof Wireless Headset Case
 \$9.73 | In Stock. Sold by GeekriaDirect and Fulfilled by Amazon. Gift-wrap available.

See all verified purchase reviews

Top customer reviews

★★★★★ **Perfect!!!**
 By B. B. Sizemore on March 4, 2017
 Color: Pink | **Verified Purchase**

I bought 3 of these in different shapes and sizes...one to hold my ipod, one to hold my wireless earphones and one to hold my wired earphones. They work great!!! You just have to measure what you want to store in them in order to know what size to order. It keeps my earphones tangle free. I know by the shape of the case what is in each one so when I get to the Y I pull out the one(s) I want to use.

Comment | Was this review helpful to you? Report abuse

★★★★☆ **Useful-ish**
 By Sarah W. on June 25, 2017
 Color: Green | **Verified Purchase**

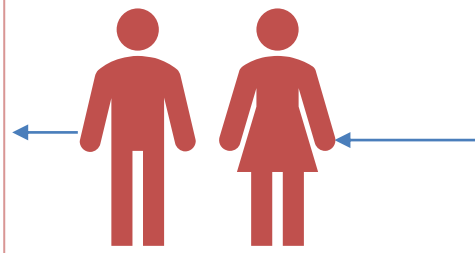
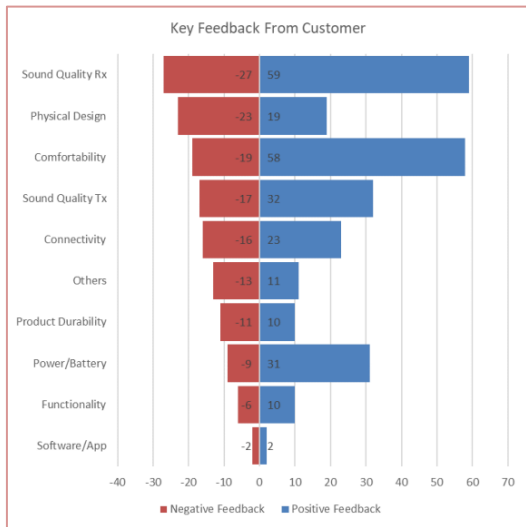
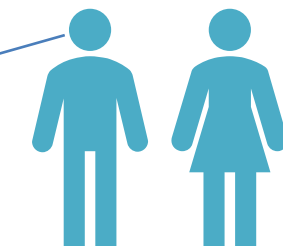
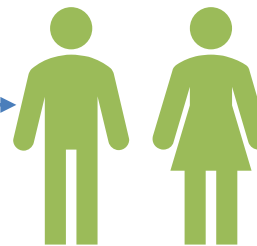
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Comment | Was this review helpful to you? Report abuse

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 Color: Black | **Verified Purchase**

The size and the protection of this product is what I needed. However, the outside material is slightly different from the image. Actual product has a polyester matte feeling instead of the patterned surface. Also, the inside is orange, not black.

Comment | 3 people found this helpful. Was this review helpful to you? Report abuse



R.No	Store	Product_Id	Review_Title	Comment	Rating	Feedback_Type	Key_Point
1	Amz US	1	I regret buying this Jabra Steel [even with huge d	I purchased this Jabra Steel after I ruined my Motorola Whisper trying to quickly rinse off some	3	0	Sound Quality Rx
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3	Amz US	1	Disappointed	No noise cancelling, did not recognize any voice commands. Returned for full refund. Surprised at	1	0	Sound Quality Rx
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Business Process: SHOULD BE

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\$9.73 | In Stock. Sold by GeekriaDirect and Fulfilled by Amazon. Gift-wrap available.

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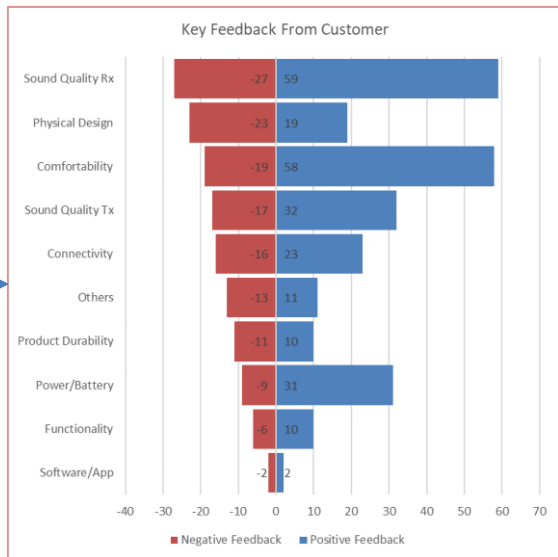
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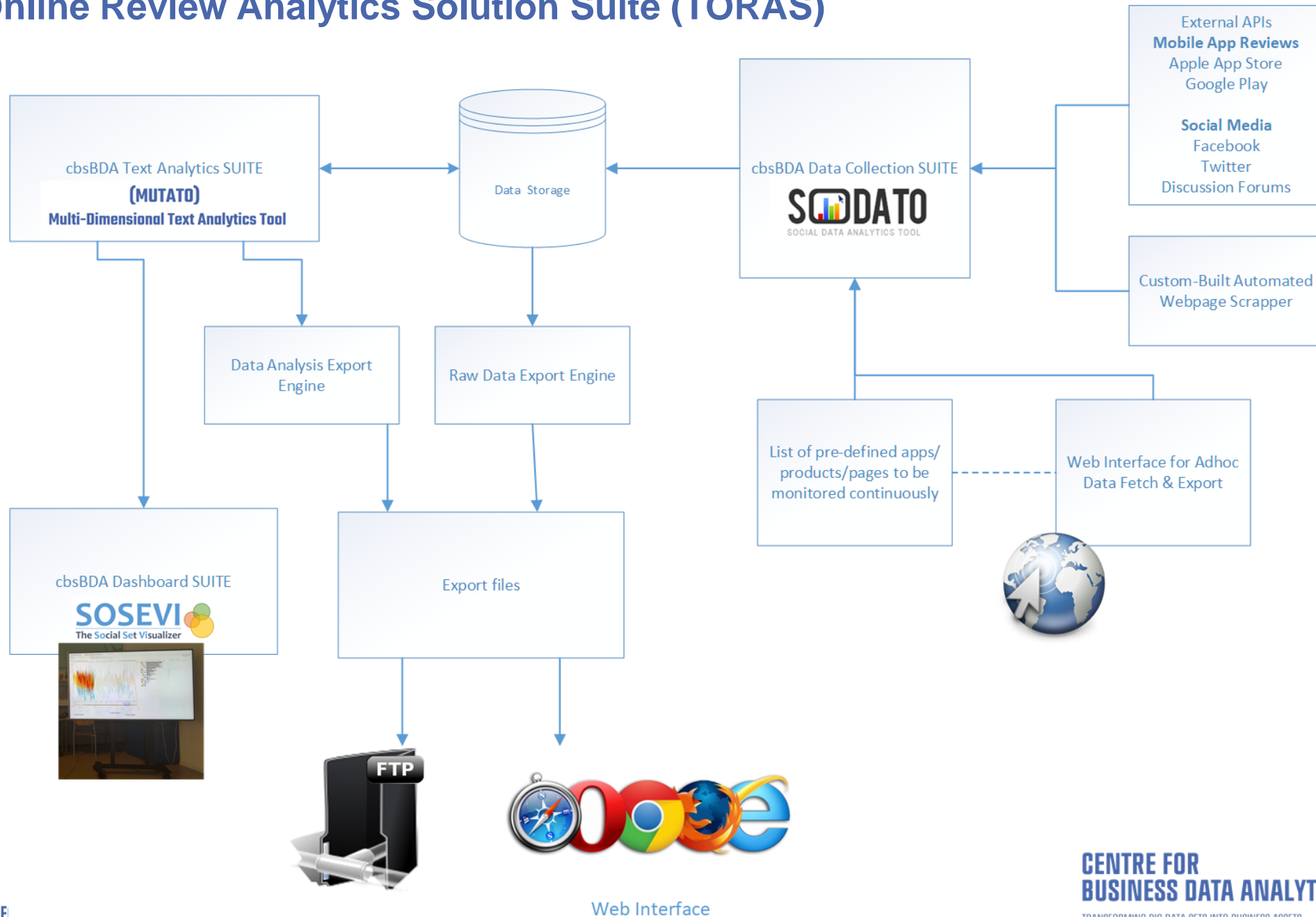


(MUTATO)
Multi-Dimensional Text Analytics Tool



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The Online Review Analytics Solution Suite (TORAS)

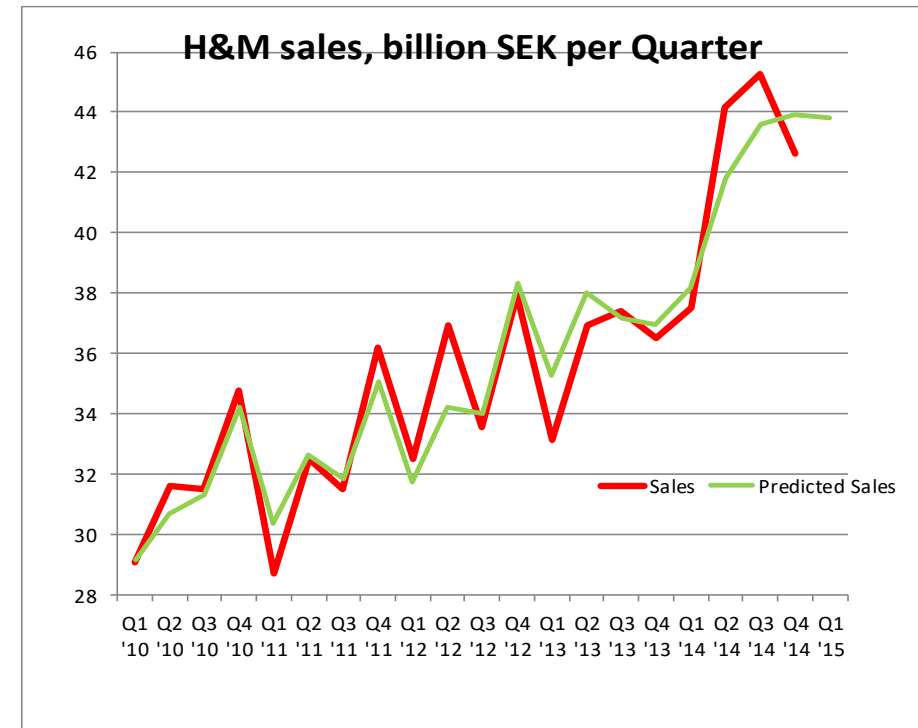
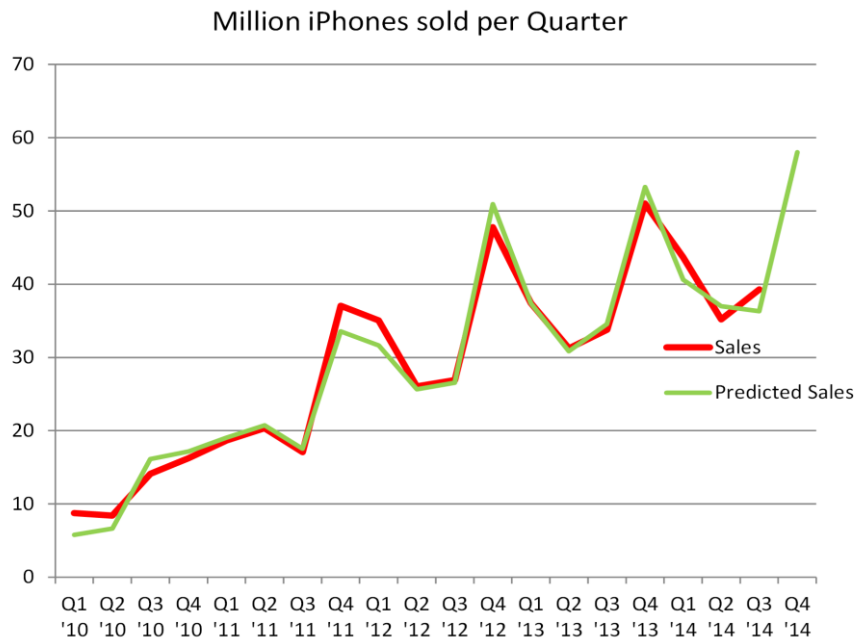


Predictive Analytics

Business Value: Sales and Revenue Predictive Models

Stages	AIDA	Hierarchy of effects
Cognition	Attention	Awareness Knowledge
Affect	Interest Desire	Liking Preference Conviction
Behavior	Action	Purchase

Company	Data Source	Time Period	Size of Dataset
Apple	Twitter	2007 → Oct 12, 2014	500 million+ tweets containing “iPhone”
H & M	Facebook	Jan 01, 2009 → Oct 12, 2014	~15 million Facebook events



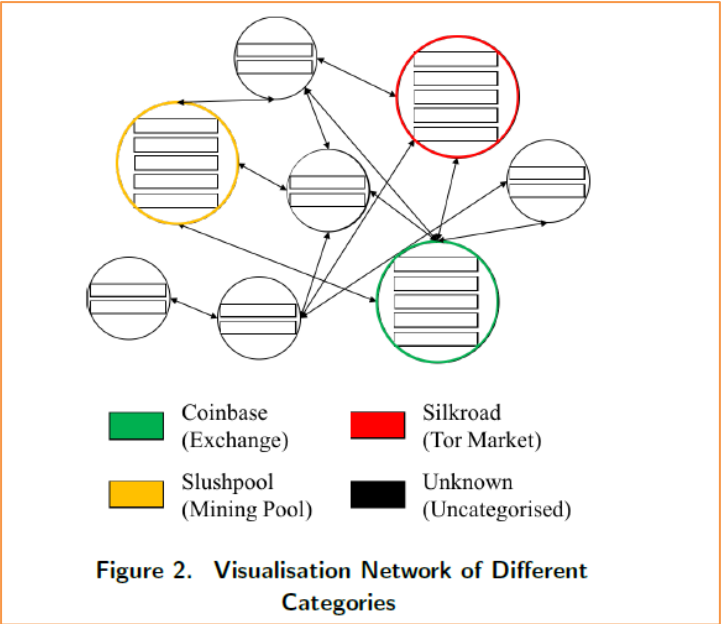


Figure 2. Data Preparation and Analysis Process

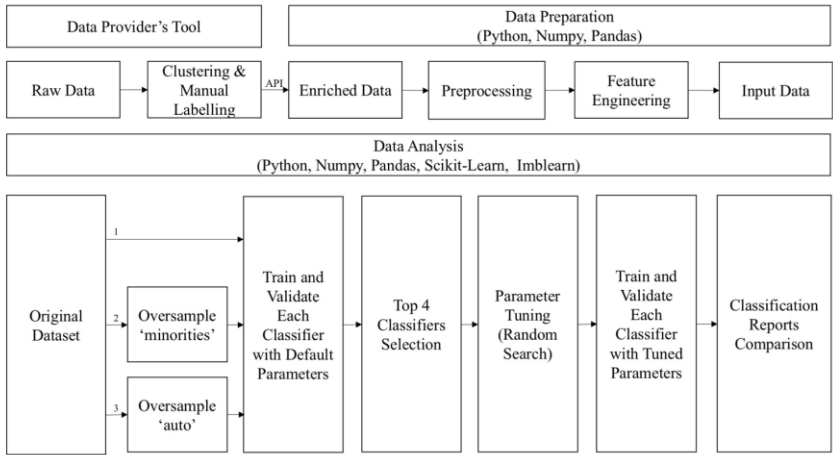


Table 5. Prediction Results

Address	RFC	ETC	BGC	GBC
add1	personal-wallet	personal-wallet	personal-wallet	exchange
add2	ransomware	personal-wallet	gambling	ransomware
add3	ransomware	personal-wallet	ransomware	exchange
add4	personal-wallet	personal-wallet	exchange	ransomware
add5	exchange	personal-wallet	gambling	ransomware
add6	ransomware	ransomware	ransomware	ransomware
add7	exchange	personal-wallet	ransomware	personal-wallet
add8	gambling	gambling	other	gambling
add9	exchange	other	exchange	exchange
add10	gambling	personal-wallet	gambling	ransomware
add11	exchange	other	exchange	exchange
add12	personal-wallet	personal-wallet	personal-wallet	personal-wallet
add13	ransomware	ransomware	ransomware	darknet-market
add14	personal-wallet	exchange	ransomware	ransomware
add15	ransomware	personal-wallet	ransomware	ransomware
add16	ransomware	personal-wallet	ransomware	ransomware
add17	exchange	personal-wallet	gambling	ransomware
add18	exchange	personal-wallet	exchange	exchange
add19	exchange	personal-wallet	gambling	ransomware
add20	exchange	personal-wallet	gambling	ransomware
add21	ransomware	personal-wallet	gambling	ransomware
add22	exchange	personal-wallet	gambling	ransomware

