Customer Analytics

By Olga Buchonina
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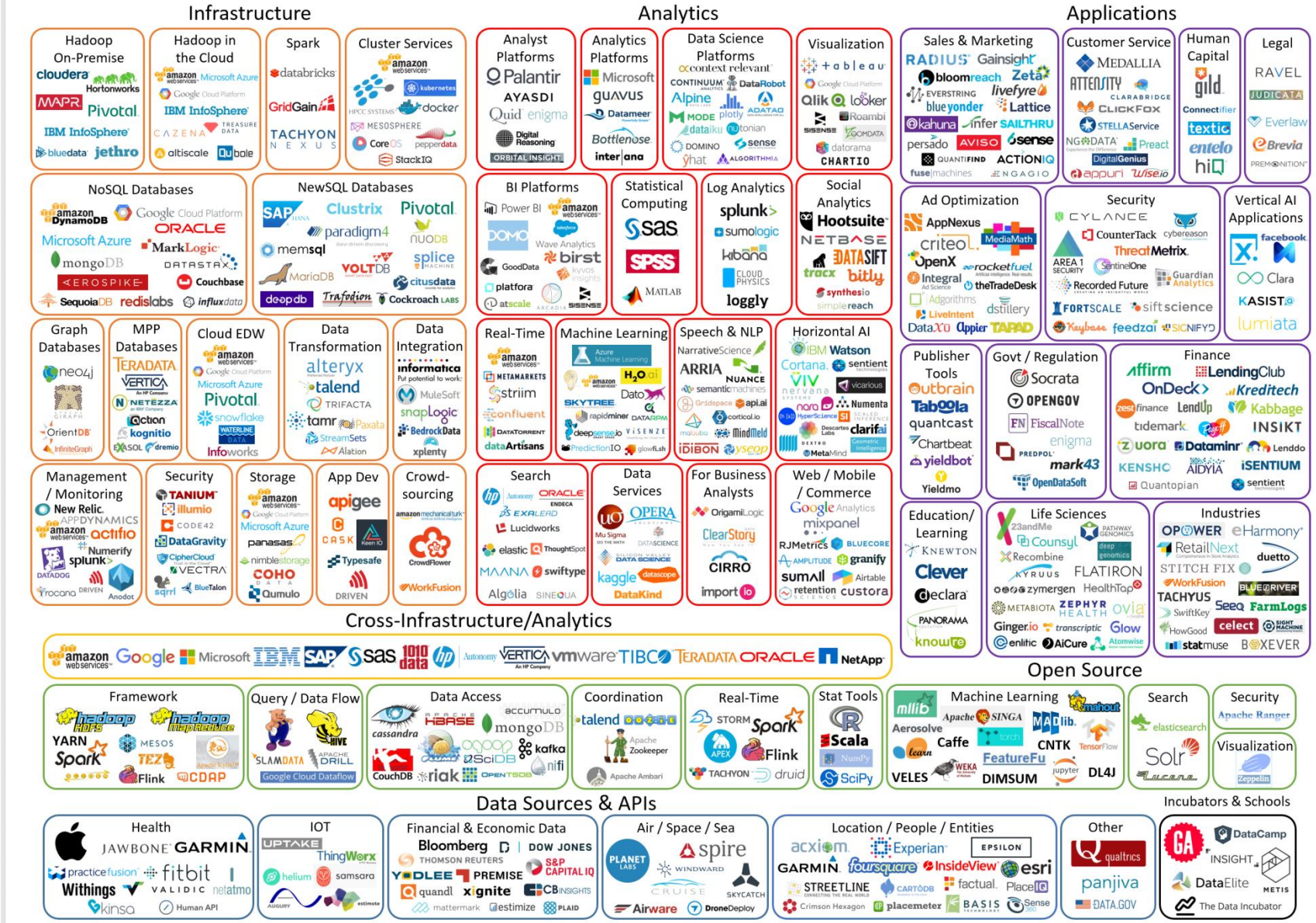
- Pi Day is celebrated on March 14th (3/14) around the world. Pi (Greek letter “π”) is the symbol used in mathematics to represent a constant — the ratio of the circumference of a circle to its diameter — which is approximately 3.14159.
- Pi has been calculated to over one trillion digits beyond its decimal point. As an irrational and transcendental number, it will continue infinitely without repetition or pattern. While only a handful of digits are needed for typical calculations, Pi’s infinite nature makes it a fun challenge to memorize, and to computationally calculate more and more digits.

Wiki Definition

- **Customer analytics** is a process by which data from customer behavior is used to help make key business decisions via market segmentation and predictive analytics. This information is used by businesses for direct marketing, site selection, and customer relationship management. Marketing provides services in order to satisfy customers. With that in mind, the productive system is considered from its beginning at the production level, to the end of the cycle at the consumer. Customer analytics plays a very important role in the prediction of customer behavior today

Big Data Landscape 2016 (Version 2.0)



Last Updated 2/12/2016

FIRSTMARK

Customer Analytics Models

	Descriptive	Predictive	Prescriptive
	What HAS happened?	What COULD happen?	What SHOULD happen?
What the user needs to DO	• Increase asset reliability • Reduce labor and inventory costs	• Predict infrastructure failures • Forecast facilities space demands	• Increase asset utilization • Optimize resource schedules
What the user needs to KNOW	• The number and types of asset failures • Why maintenance costs are high • The value of the materials inventory	• How to anticipate failures for specific asset types • When to consolidate underutilized facilities • How to determine costs to improve service levels	• How to increase asset production • Where to optimally route service technicians • Which strategic facilities plan provides the highest long-term utilization
How analytics gets ANSWERS	• Standard reporting - What happened? • Query/drill down - Where exactly is the problem? • Ad hoc reporting - How many, how often, where?	• Predictive modeling - What will happen next? • Forecasting - What if these trends continue? • Simulation - What could happen? • Alerts - What actions are needed?	• Optimization - What is the best possible outcome? • Random variable optimization - What is the best outcome given the variability in specified areas?
What makes this analysis POSSIBLE	• Alerts, reports, dashboards, business intelligence	• Predictive models, forecasts, statistical analysis, scoring	• Business rules, organization models, comparisons, optimization

Business value →

View of the Customer Experience Analytics today

WE LOVE OUR CUSTOMERS!!!!

…..

ARE WE?

https://www.youtube.com/watch?v=uLAkbNMvIWk&list=PLEPPAIRmgCSj34hDP7Jt4PGK_2p_i1m4G

https://www.youtube.com/watch?v=6M0TgEUbRBc&index=2&list=PLEPPAIRmgCSj34hDP7Jt4PGK_2p_i1m4G

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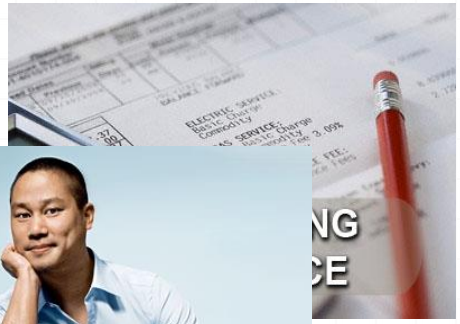
Business Organization



Focus: What is the problem?

Where we find the customers who will use your product?

What does it take to retain the customers and satisfy their needs?

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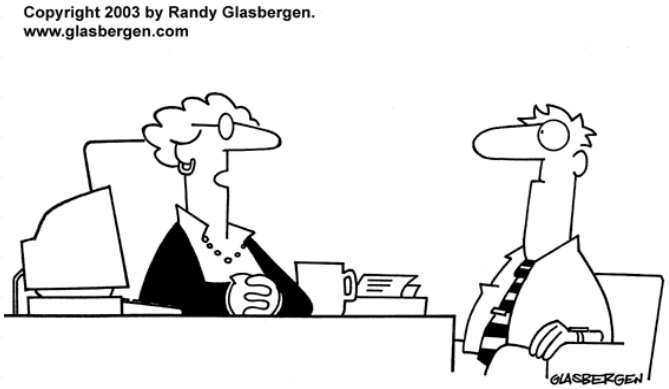

"You say this job takes you to Hell and back everyday I hear that Hell is inhabited by millions of lost souls. *How many have you signed up as new customers?!"*

How you can do it?

- **As unsexy and low-tech as it may sound, the telephone is one of the best branding devices out there**. (Tony Hsieh, CEO of Zappo's)
- By Sir Richard Branson:
  - **1. Be visible**
  - **2. Express passionate commitment to serving the customer.**
  - **3. Your company's employees are its greatest assets**
  - **4. Hire people who have the "Virgin" attitude**
  - **5. Empower your employees to solve problems and to make every experience great.**
  - **6. Engage in social media with a genuine voice.**
  - **7. Have fun.**

Why do we like things Free?

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Real Estate Team

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Los Gatos, CA 95030

http://www.sunnyvalerealestate.com

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Business value →

CLV (calculating lifetime value)

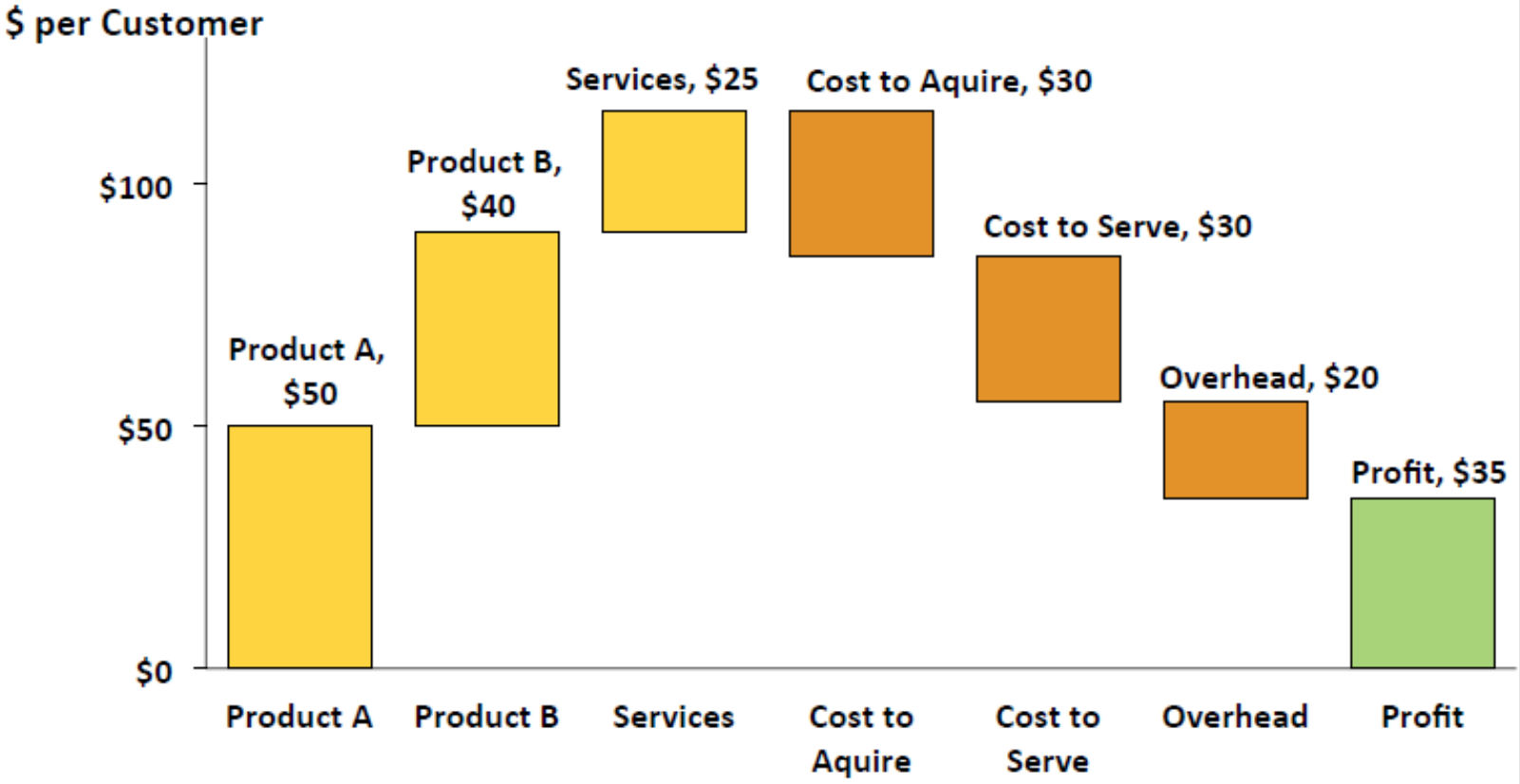
"There is only one valid definition of a business purpose: to create a customer"

(Peter Drucker, The Practice of Management, 1954)

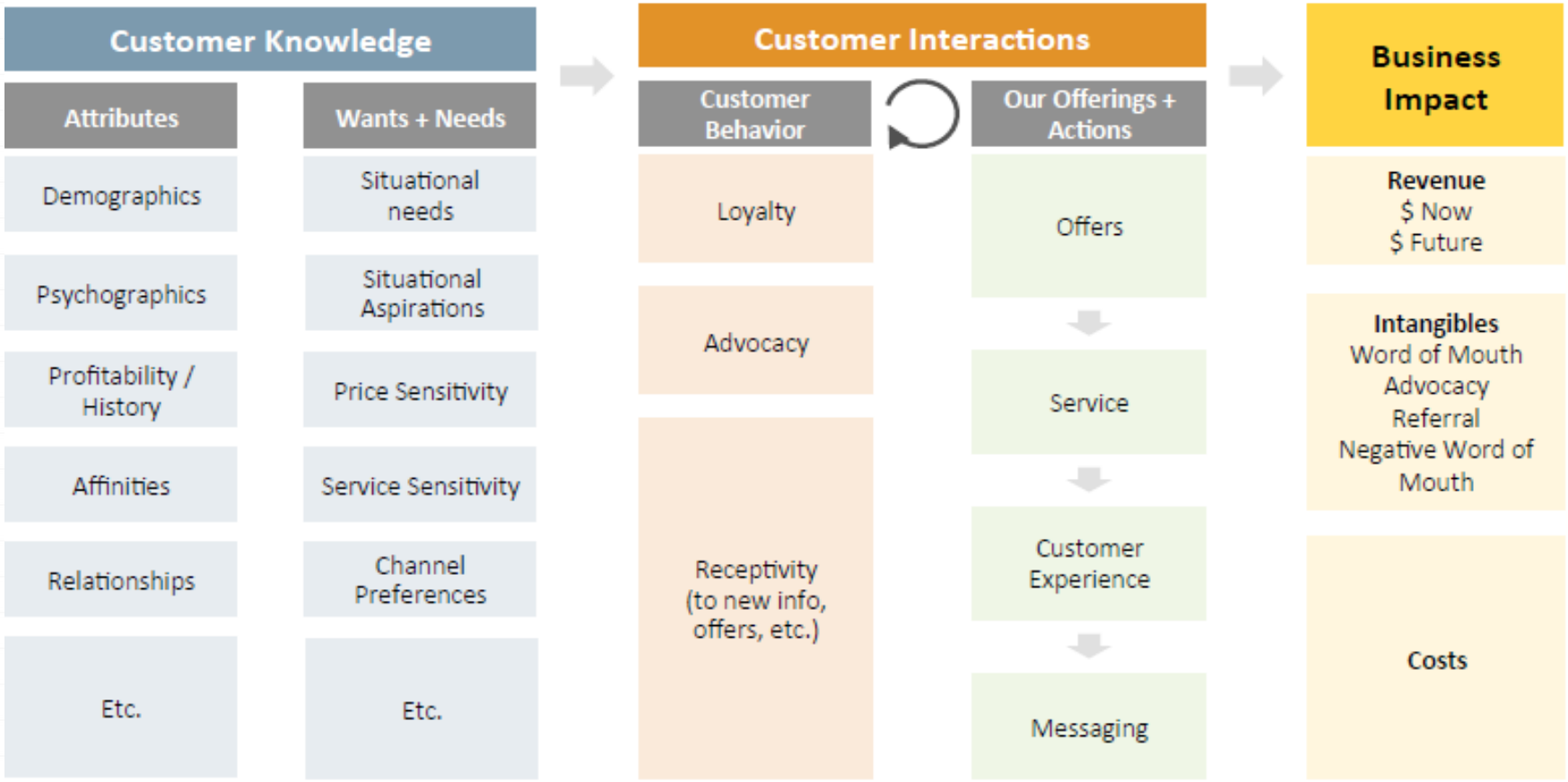
- Revenue per purchase
- X Frequency of purchase
- Customer lifetime
- Profit margin
- CLV =the accumulated profit or loss from each customer over the course of that customer's relationship with you.

Classic CPA Output: "Waterfall Chart"

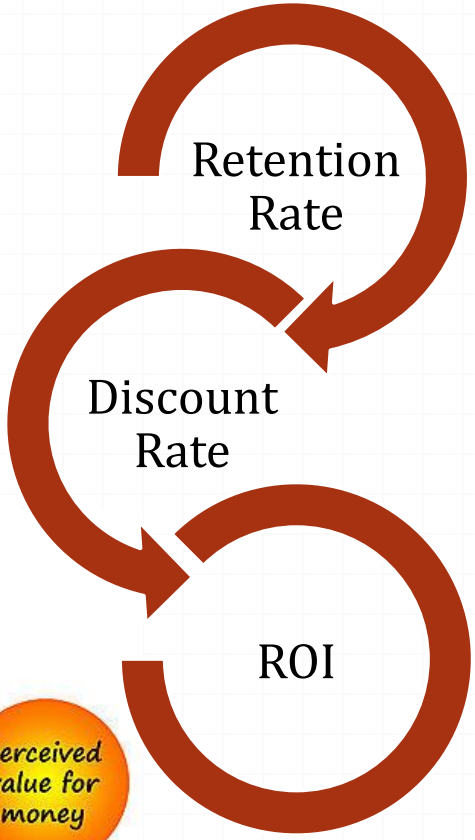
Key components of profit and loss per customer



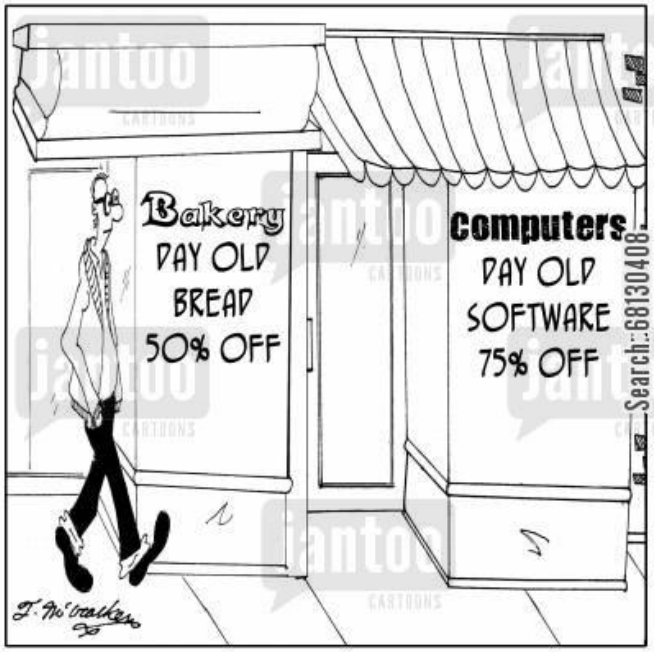
Managing Customer Lifetime Value



CLV

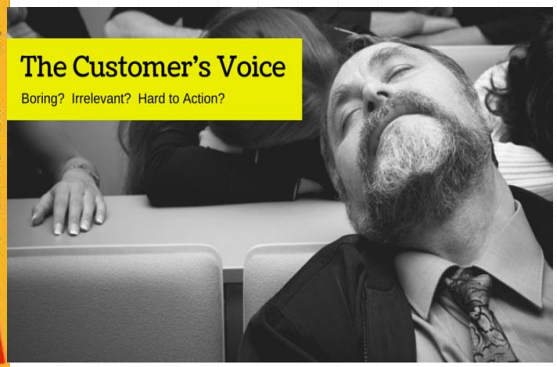


"And this is where our ROI became an IOU."



Customer Journey Analytics

Awareness → **Interest** → **Desire** → **Action**



Customer Journey

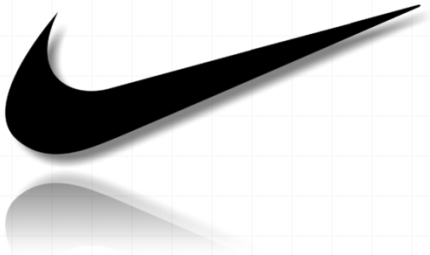
- Compare Odyssey by Homer Journey and Ernst Hemingway who was attributed with writing six-word story “ For Sale: baby shoes, never worn”.

Follow me home

- Awareness
- Consideration
- Preference
- Action
- Loyalty

How often should a consumer brand change it's brand identity?

- As little as possible. Consumers are fickle and forget easily. Your most important goal in all of branding is awareness and recall, and that becomes hard to sustain when your identity is in flux.



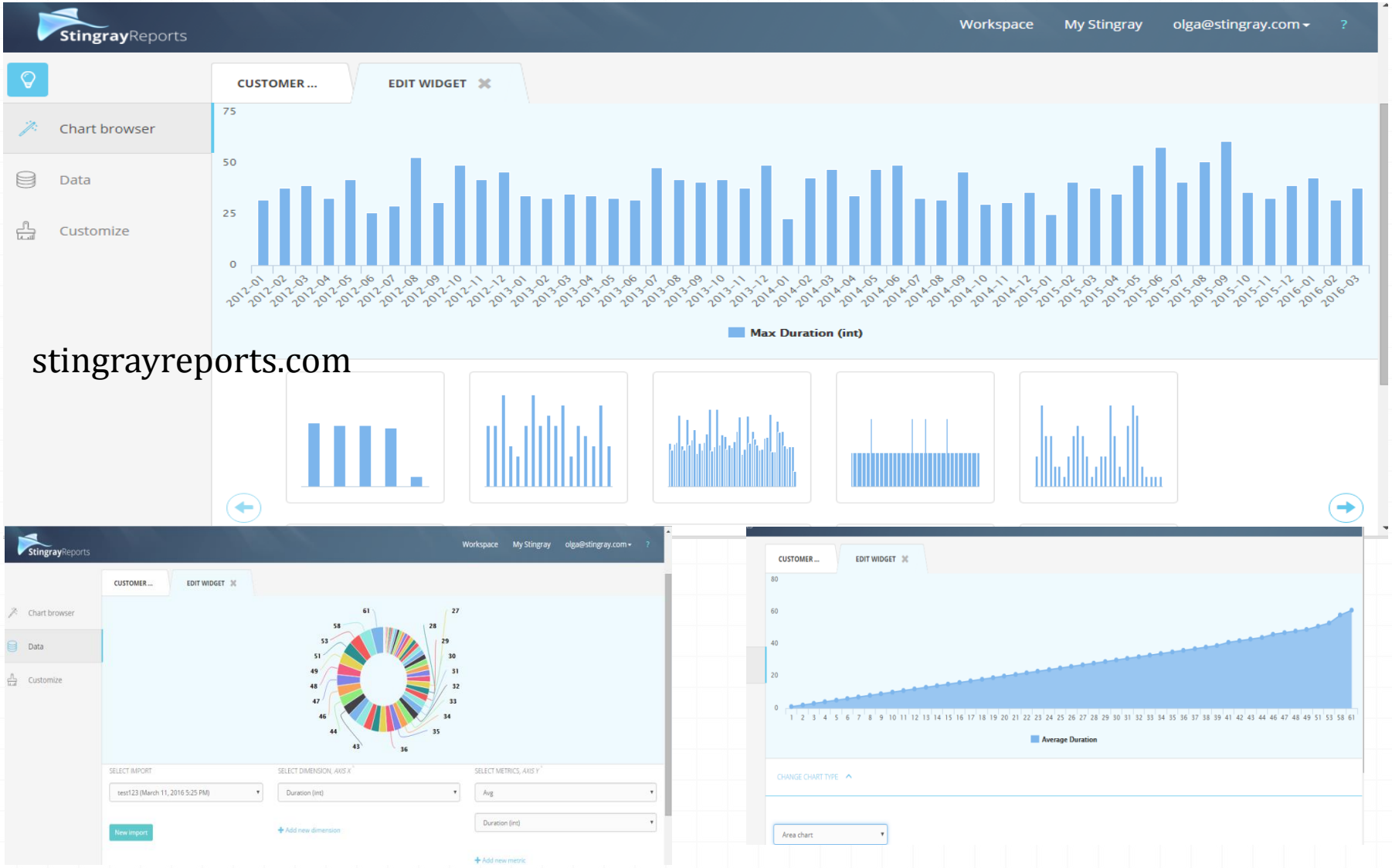
INNOVATION
PROTOCOL

Brand Awareness

- List mobile phone manufacturers
- List three makers and models of family sedans
- Name Four rental companies

Customer Satisfaction

- General satisfaction (relational)
- Attribute Satisfaction (transactional)
  - Theacsi.org – American Customer Satisfaction Index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CUSTOMER ...
EDIT WIDGET
Chart browser
Data
Customize
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stingrayreports.com
SELECT IMPORT
SELECT DIMENSION, AXIS X
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Add new dimension
Add new metric
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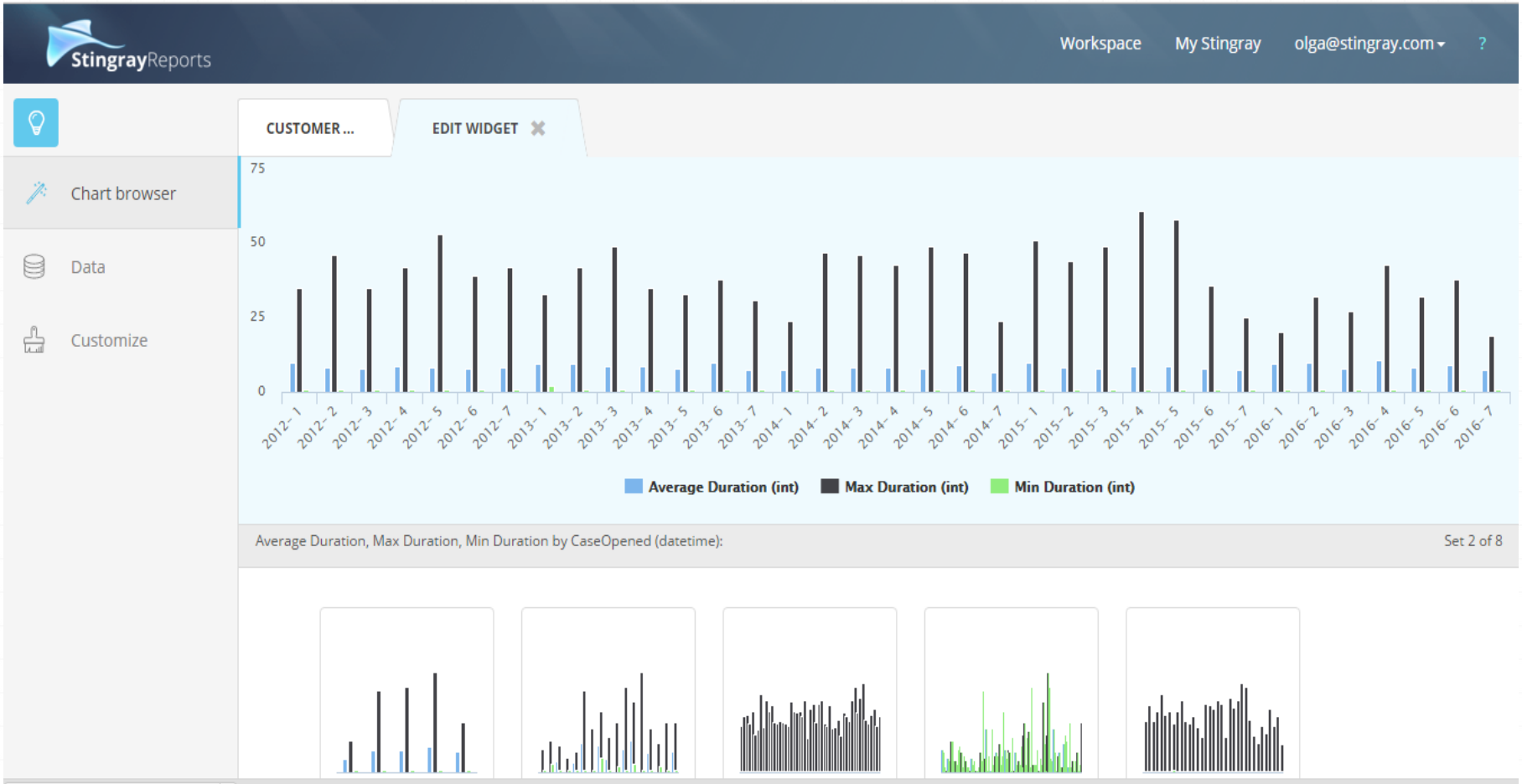
Area chart
Average Duration

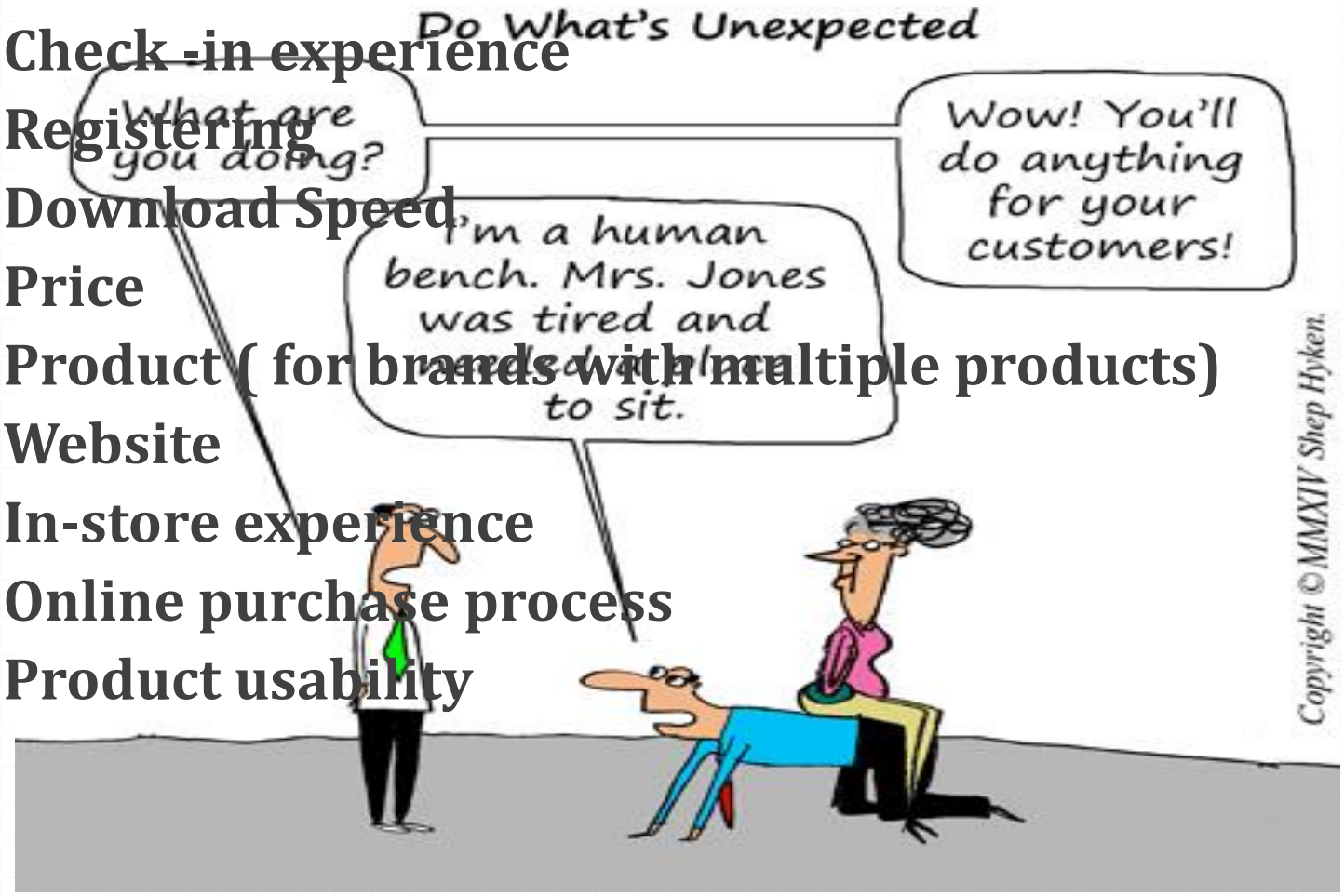
Customer Analytics Tool



- Predictive
- Descriptive
- Prescriptive
- Feedback

What makes the product “the IT”?

- Check -in experience
- Registering
- Download Speed
- Price
- Product (for brands with multiple products)
- Website
- In-store experience
- Online purchase process
- Product usability



Delighting Customers

Wow!

- **Measure attitude lift**
  - **National and enterprise**
  - **www.measuringu.com**

Multiple Regression Analytics

- Independent and dependent variables
- Magic quadrant is not the “IT” but it helps to see where you are based on set of variables

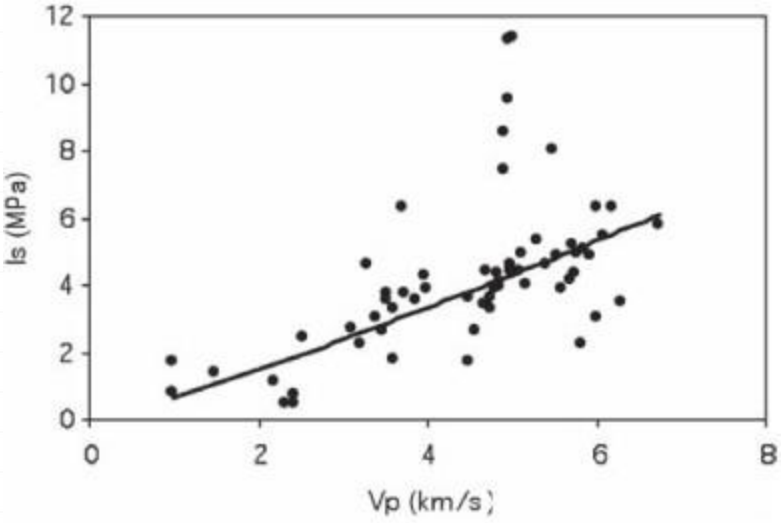
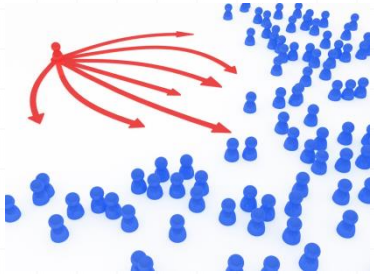


Figure 4—The relationship between the *P*-wave velocity and *Is* of rocks

Three R's

Reach × Resonance = Reaction



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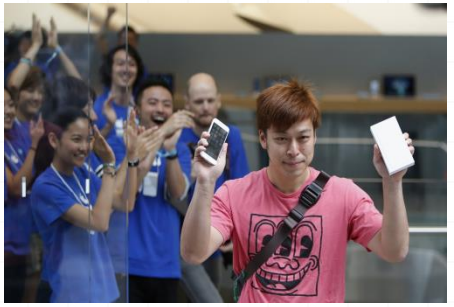
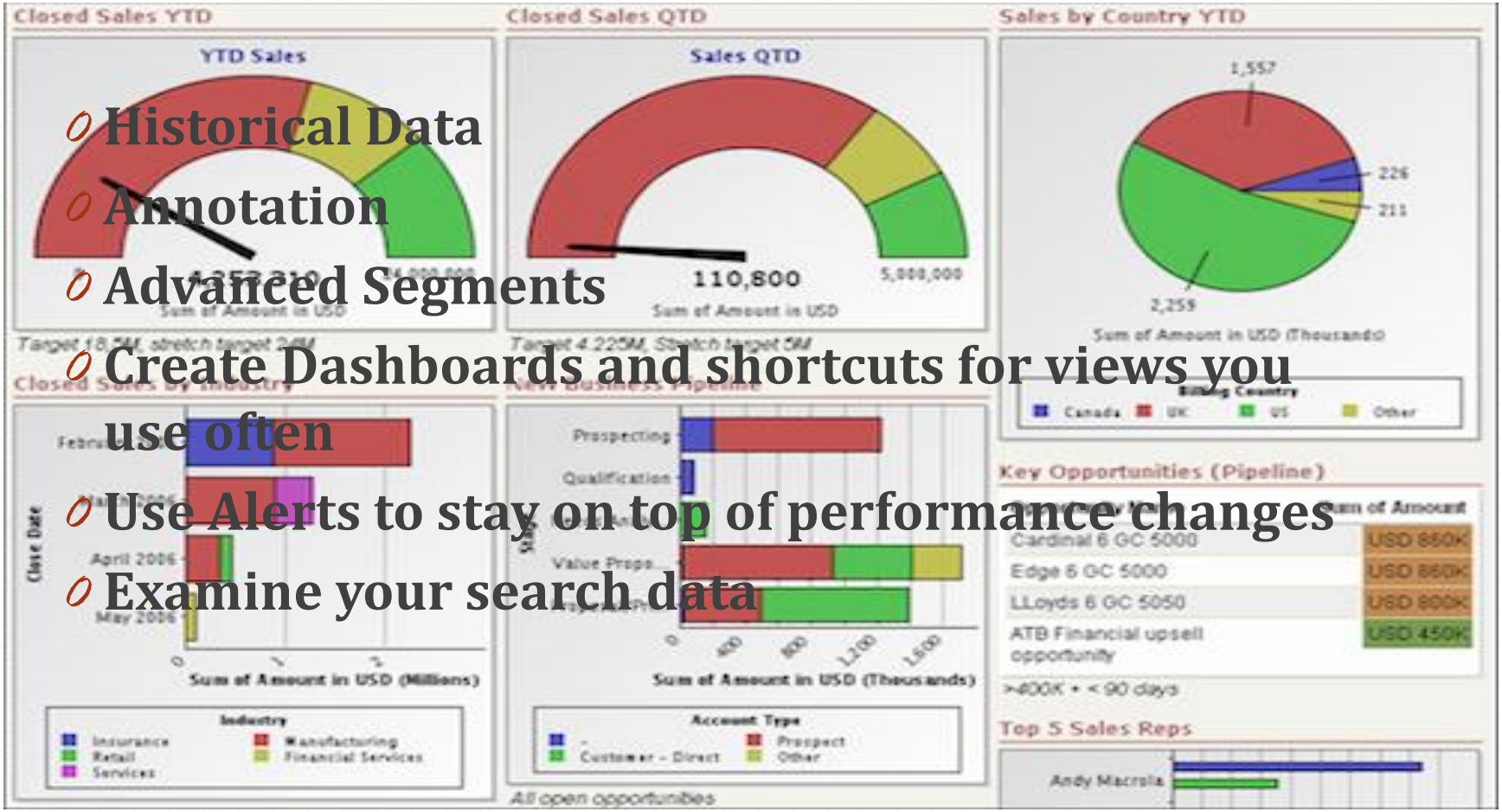


Your Goal?



- Historical Data
- Annotation
- Advanced Segments
- Create Dashboards and shortcuts for views you use often
- Use Alerts to stay on top of performance changes
- Examine your search data

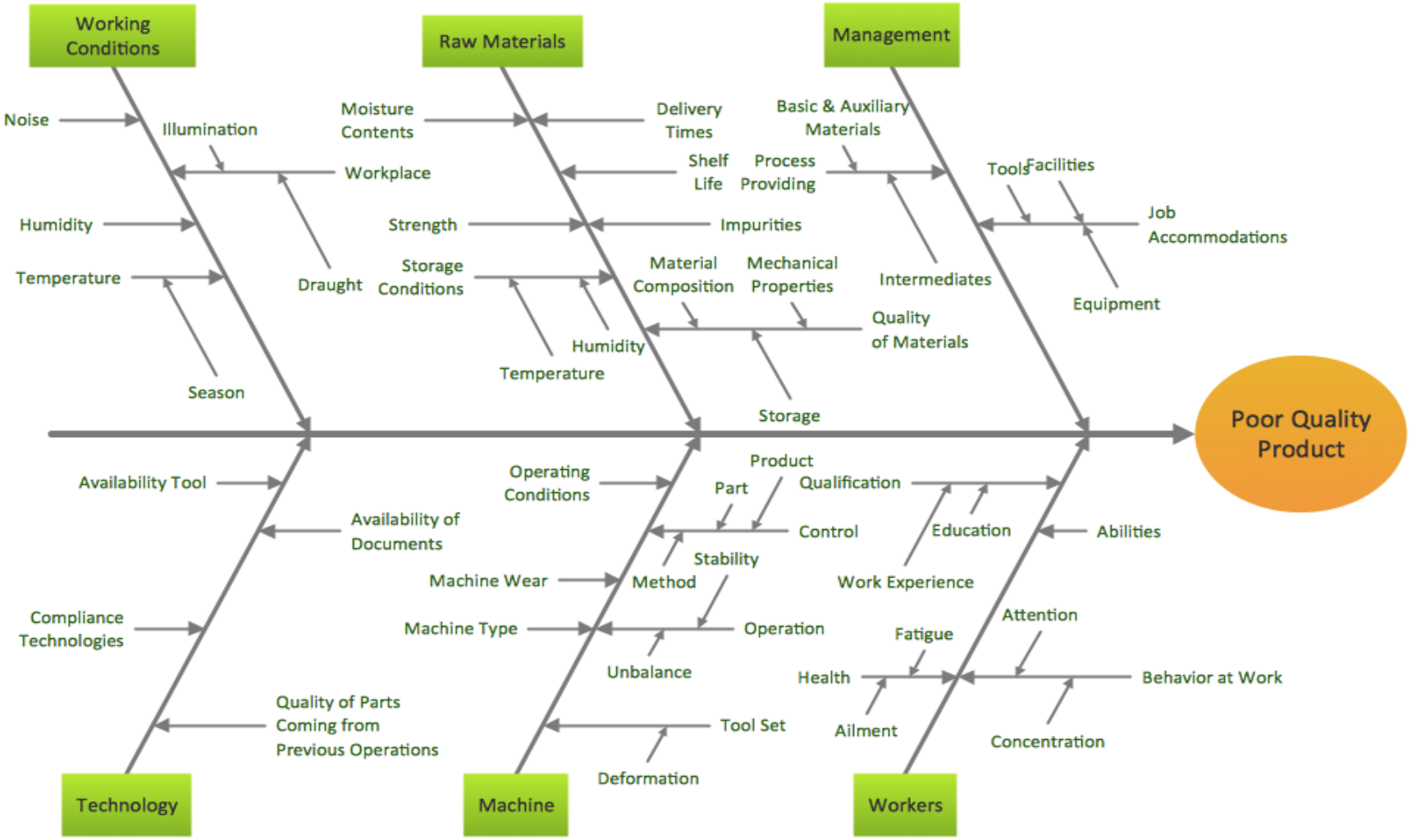
Post-Sale Behavior

Comcast transition experience

- Story
  - Door to door sales and good sales representative provide good incentive to switch
    - Gotcha's : hidden costs
  - Setup the installation time. Technician arrived and installed cable by routing it across the outside wall and roof: Result: unsightly cable in view and danger of cable being damaged. Plus installation did not work.
  - Outcome: 3 calls to customer support and unavailability to resolve the issue for a week (lack of resources)
  - Reservations with switch: customer support were mitigated by assurance and number of publications about Comcast actions to resolve the support team issues.
  - Notes: call was transferred 4 times, on-hold for over one hour and switching between while trying to resolve the issue. Call directly to Sales Rep to resolve the issue since Support was unable to resolve it.
  - Observation: Bill time - 5 calls about the bill which was due and requests to pay immediately.

  - Moral of the story: Customer or Revenue
  - Customer notes: Looking for an alternative provider
  - Comcast investment: Sales representative investment, marketing, accounting. What is missing : Customer satisfaction. With post-sales experience -> customer retention, bad publicity and free marketing
    - Compare with Zappos

Cause and Effect diagram



Emotions

- Recommendations for house repairs:
  - 5 contractors, willing to recommend only one

View on Apache Spark and new trends in Data Analysis

- 2015 was without a doubt the year of Apache Spark, an open source framework leveraging in-memory processing, which was starting to get a lot of buzz when we published the previous version of our landscape. Since then, Spark has been embraced by a variety of players, from IBM to Cloudera, giving it considerable credibility. Spark is meaningful because it effectively addresses some of the key issues that were slowing down the adoption of Hadoop: it is much faster (benchmarks have shown Spark is 10 to 100 times faster than Hadoop's MapReduce), easier to program, and lends itself well to machine learning. (by **Matt Turck VC at FirstMark)**

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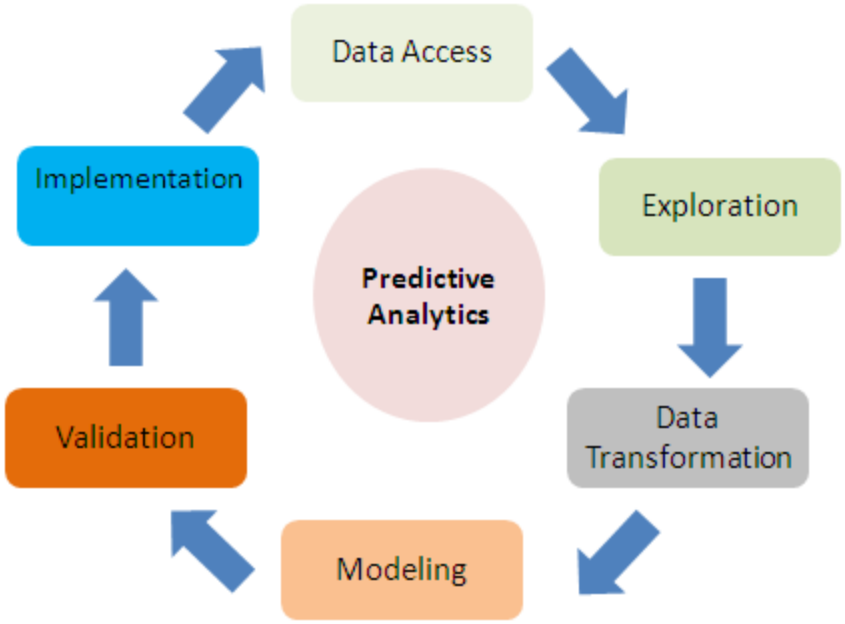
Predictive Modeling



- 1. C4.5
- 2. k-means
- 3. Support vector machines
- 4. Apriori
- 5. EM
- 6. PageRank
- 7. AdaBoost
- 8. kNN
- 9. Naive Bayes
- 10. CAR