How to Level-up your Analytics Team without Breaking the Bank

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Level(3)®

Who is Level 3 Communications?

A Global B2B Telecommunications Provider

NEARLY **$6.4** BILLION ANNUAL REVENUE

10,000 + GLOBAL EMPLOYEES

APPROX. **180,000** ROUTE MILES OF FIBER NETWORK

CONNECTING **55+** COUNTRIES ON 5 CONTINENTS
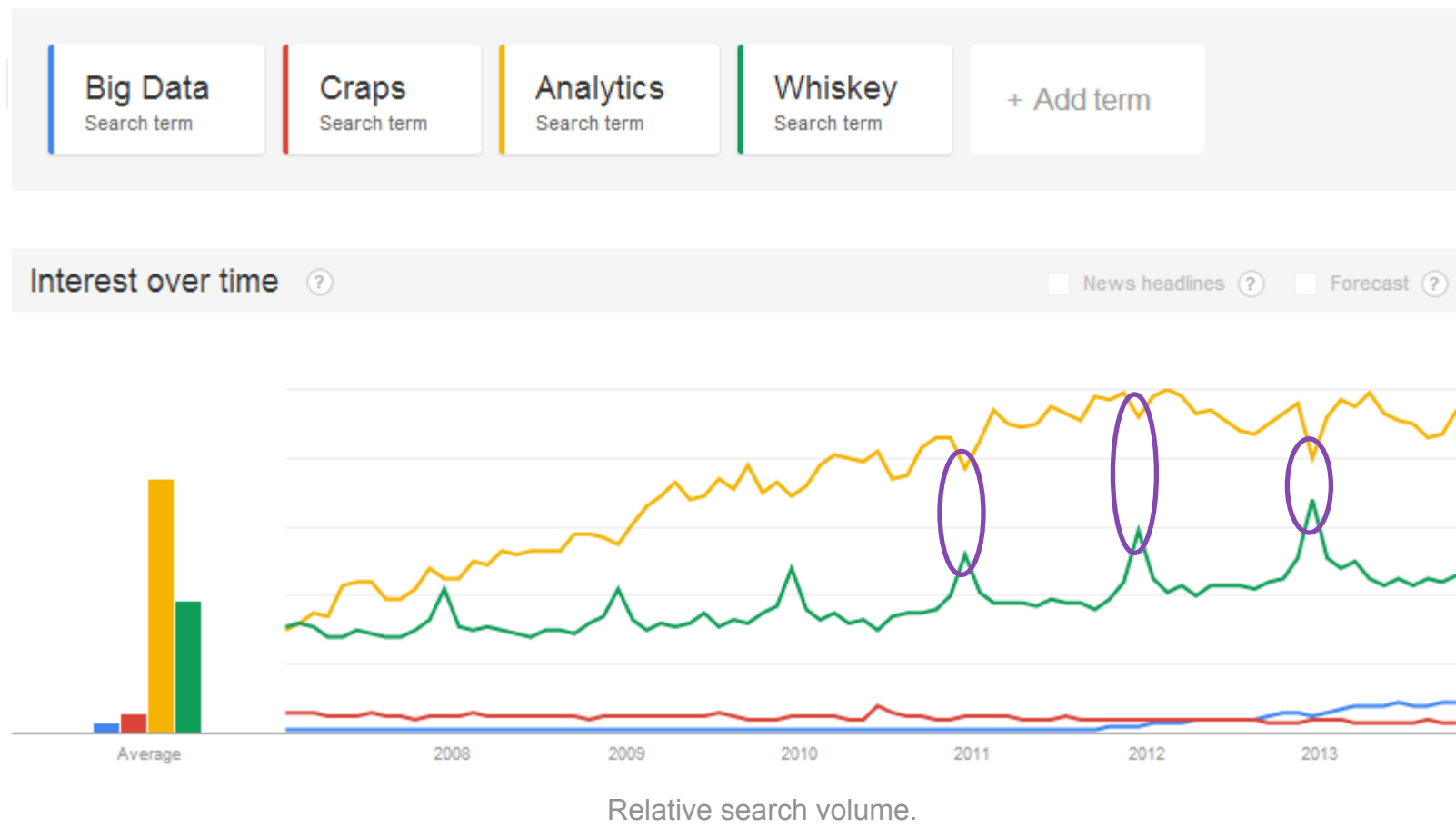
OPERATE IN **170** METRO MARKETS

26.8 TB+ GLOBAL IP AND CDN CAPACITY

MORE THAN **13 B** MINUTES PER MONTH IN VoIP TRAFFIC
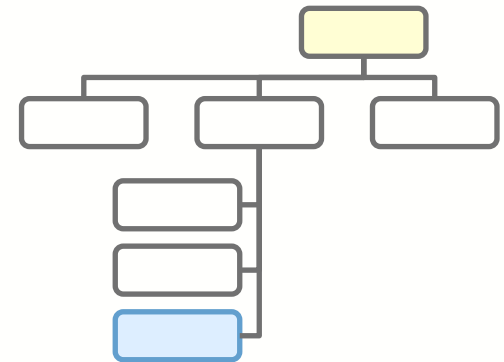
Analytics Advances & Popularity

Google Trends

Relative search volume.

What we do for Level 3

Global Financial Management Reporting

- Business Intelligence Development

  - Reporting / KPIs / Dashboards

  - Data Governance

  - Process Automation

  - Wanted: More Advanced Analytics

    - Predictive Analytics

    - Simulation

    - Optimization

This is a story about our journey.
Spoiler: We did it without breaking the bank!

Where we were starting from.
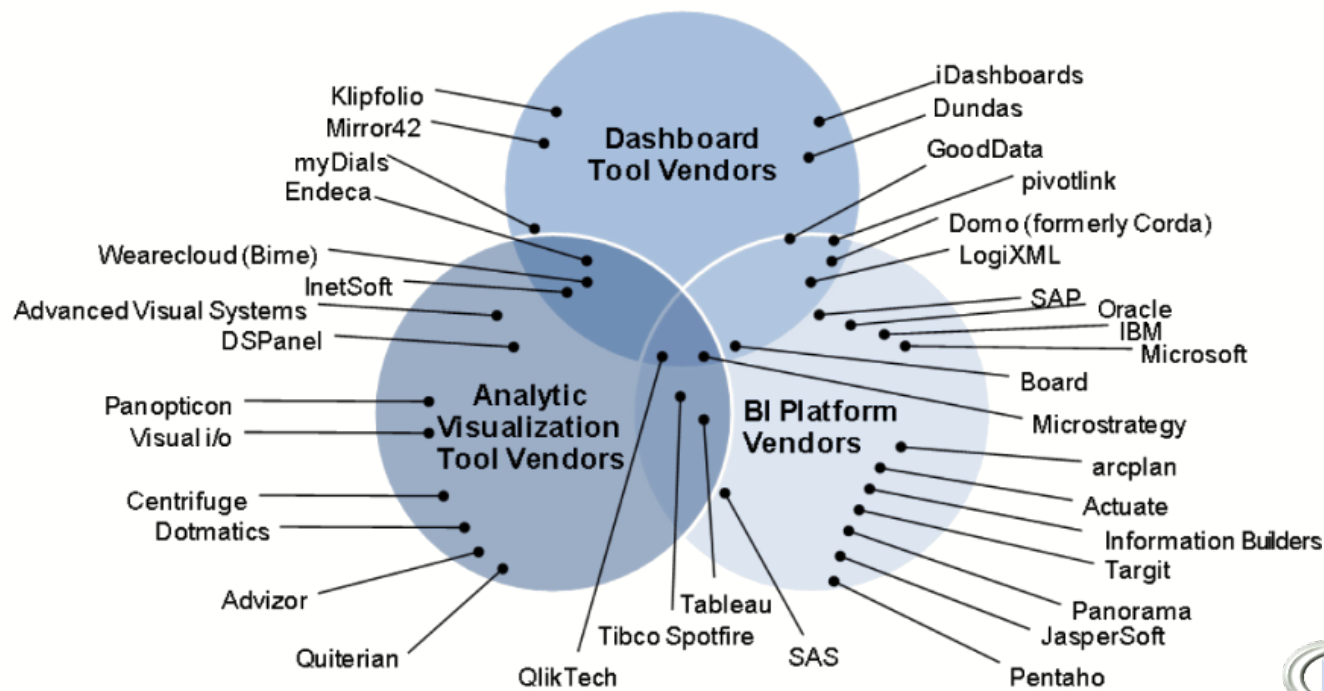
Tool & Skill Assessment

- What we had (People & Tools)

  - Existing BI suite

  - People Skills

    - Databases/Data Marts/Cubes

    - Web Application Development (front & back e

    - Data/BI Visualization

  - Needed: Statistical Tools for Analytics & Model Building
  - Needed: More Sophisticated Statistical Knowledge

Tool Gap

Needed: Statistical Tools for Analytics & Model Building

Source: Gartner - Who's Who in Interactive Visualization for Analysis and Dashboarding

Vendor meeting extravaganza!

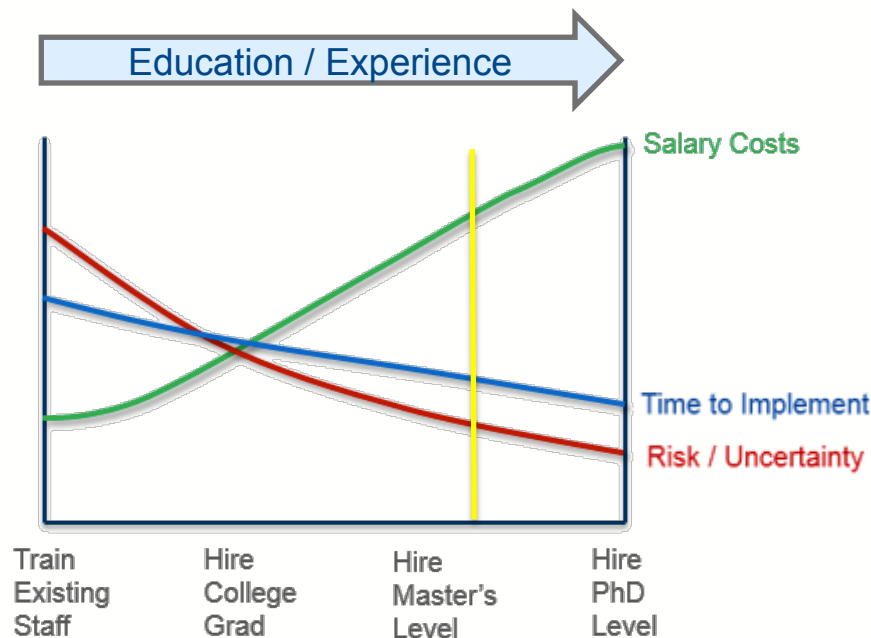Replacing our existing BI foundation was cost prohibitive.

We decided to add R to our BI suite for advanced analytics.

Stat Gap

Needed: **More Sophisticated Statistical Knowledge**

- Train Staff (Build) vs. Hire from Outside (Buy)

  - (If we were to hire, at what level of experience would meet our needs?)

Education / Experience

Salary Costs

Time to Implement

Risk / Uncertainty

| Train Existing Staff | Hire College Grad | Hire Master's Level | Hire PhD Level |

We hired a statistician between masters and PhD level.

Project & Process

Picking a project & following a process.

- For our initial project we decided to predict customer churn.
- To give our effort structure we adopted the CRISP-DM framework.
- Studied various hypotheses/theories causing customer churn.
- Consolidated and analyzed customer data.
- We transformed data & modeled, dozens of times.
- We heavily scrutinized candidate models.
- Once satisfied with model performance, we automated the scoring process.

CRoss
Industry
Standard
Process for
Data Mining
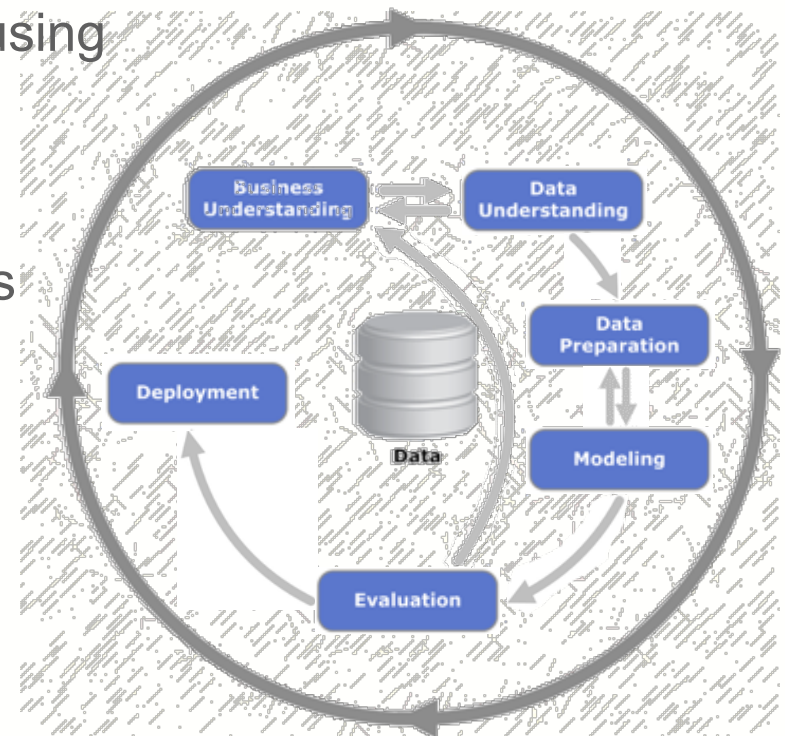
Other Projects
Leveraging new data & capabilities

- Customer Segmentation (Clustering)
- Customer Buying patterns (by segmentation)
- Customer Product suggestions (Cross Sell Models)
- Improved Customer Revenue Forecasting
- HR Analytics
- Text Mining

Lessons Learned

- Having someone on staff that is a PhD is an envious position, but there are still options if you find yourself without one.
- Open source tools don't have sales reps. Be sure to evaluate them in addition to vendor tools when looking for solutions.
- Pick a good first project. Make sure you plan how the results will be used, and build a project around it.
- There is no substitute for deep domain knowledge. Data mining without it could be slow going and fraught with potential errors.
- Prepare for your analytics to be met with skepticism. Education may have to be a cornerstone for adoption of your analytics efforts.
- Adding more advanced analytics to your BI teams can be done via a grass roots effort without a cost prohibitive investment.

Questions & Contact

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