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

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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 end)
    - Data/BI Visualization
  - **Needed:** Statistical Tools for Analytics & Model Building
  - ** Needed:** More Sophisticated Statistical Knowledge
Tool Gap

**Needed: Statistical Tools for Analytics & Model Building**

- We decided to add R to our BI suite for advanced analytics.
- Replacing our existing BI foundation was cost prohibitive.

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

We hired a statistician between masters and PhD level.
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.
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

- Adding more advanced analytics to your BI teams can be done via a grass roots effort without a cost prohibitive investment.
- Open source tools don’t have sales reps. Be sure to evaluate them in addition to vendor tools when looking for solutions.
- Having someone on staff that is a PhD is an envious position, but there are still options if you find yourself without one.
- 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.
Questions & Contact

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