The Secrets of Analytical Leaders: Insights from Information Insiders

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Secrets

Dan Ingle, Kelley Blue Book
1. Incremental development
2. Teamwork
3. One size doesn’t fit all

Amy O’Connor, Nokia
1. Data is a product
2. Create an ecosystem
3. Change management

Darren Taylor, Blue KC
1. Create the right team
2. Get executive support
3. Deliver a quick win

Eric Colson, Netflix
1. Eliminate coordination costs
2. Work fast, cohere later
3. Build with context

Tim Leonard, USXpress
1. Talk language of business
2. Let business present
3. Deliver quick wins

Kurt Thearling, CapitalOne
1. Curate the data
2. Statisticians are craftsmen
3. Manage model production

Ken Rudin, Zynga
1. Questions, not answers
2. Impacts, not insights
3. Evangelists, not oracles
Purple People

- Straddle business and technology domains
- Talk the language of business
- Run the analytical group like a business
- Recruit business people to work on their teams
- Manage “front” and “back” offices
What is analytics?

Analytics with a capital “A”

Analytics with a small “a”
Data Warehousing

Business Intelligence

Performance Management

Analytics

"Get the data"

"Use the data"

"Drive the business"

1990s 2000s 2010 2015

Data Warehousing

Business Intelligence

Performance Management

Analytics

"Get the data"

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Data Warehousing

Business Intelligence

Performance Management

Analytics

"Get the data"

"Use the data"

"Drive the business"
Analytics success framework

CULTURE
Data Treated as a Corporate Asset

PEOPLE
Analysts
Casual and Power Users
Data Developers

ORGANIZATION
Business-oriented BI
Embedded Analysts
Analytical Center of Excellence

ARCHITECTURE
Top-down
Structured
Bottom-up
Unstructured
Cross-functional Collaboration
Sandboxes

PROCESS
Development Methods
Project Management

DATA
Internal
External
Unstructured
Structured

Performance Measurement
Fact-based Decisions
Analytical Team

- **Hire** people with business knowledge and emotional IQ
- **Embed** analysts in departments
- **Practice** the principle of proximity
- **Empower** teams (Scrum) or individuals (Spanner) to build complete solutions
- **Foster** teamwork and trust
- **Allow** failure

Autonomy, mastery, purpose
Two Types

TOP DOWN

“Business Intelligence”
Corporate Objectives and Strategy

Data Warehousing Architecture
Predefined Metrics
Casual Users

Data Developers
Data architects, ETL developers, report developers, data administrators, DW administrators, technical architects, requirements specialists, trainers, etc.

BOTTOM UP

Analytics Architecture

Ad hoc queries

Power Users

Analysis and Prediction (Power Users)

Processes and Projects
“Analytics Intelligence”

Analysts (embedded)
Super users, business analysts, statisticians, data scientists, data analysts
Meet Your Analysts

**BUSINESS FOCUSED**
- Sam “Super User”
  - Answer ad hoc questions
  - Build reports/dashboards
- Beth “Business Analyst”

**DATA FOCUSED**
- Ann “Analytical Modeler”
  - Explore data statistically & visually
  - Create & maintain analytical models
- David “Data Scientist”

**HYBRID**
- Dan “Data Analyst”
  - Purchase, document, and organize data
BI/Analytical Center of Excellence

**Sponsors**

**Steering Committee (Executives)**
- Approve roadmap
- Secure funding
- Prioritize projects

**Business team** (“Business-oriented BI” team)
- Evangelize analytics
- Coordinate super users and depts
- Define best practices
- Define and document metrics
- Gather requirements
- Govern reports

**Technical team (Data developers)**
- Build and maintain the EDW and Hadoop
- Build semantic layer for BI tools
- Create complex reports and dashboards
- Develop model management platform
- Coordinate databases and servers w/ IT

**Departments**
- Super Users/Analysts

**BOBI Team**
- Data governance
- User support

**Director of BI/Analytics**
Deliver value fast

• “Death march”

• Scrum

• Spanner
Impact of specialists on development cycles

Week 1
Requirements Gathering

Week 2
Data Modeling

Week 3
ETL Development

Week 4
Development

Week 5
Development

Week 6
Development

Week 7
Development

Week 8
Development

Report Architecture

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Business-domain oriented roles

- Subj Area 1
  - ETL
  - Database
  - Reporting

- Subj Area 2
  - ETL
  - Database
  - Reporting

- Subj Area 3
  - ETL
  - Database
  - Reporting

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Change Management

• Kelley Blue Book
  – *Intuition-driven ➔ data-driven*

• Nokia
  – *Phones ➔ data services*

• Zynga
  – *Oracles ➔ evangelists*
Which platform do you choose?

Big Data = Transactions + Interactions + Observations

- Structured
- Semi-Structured
- Unstructured

Hadoop

Analytic Database

General Purpose RDBMS
BI Framework

Pros:
- Alignment
- Consistency

Cons:
- Hard to build
- Politically charged
- Hard to change
- Expensive
- “Schema Heavy”

Top Down - “Business Intelligence”
Corporate Objectives and Strategy

Reporting & Monitoring (Casual Users)

Data Warehousing Architecture
Predefined Metrics
Non-volatile Data

Analysis and Prediction (Power Users)
Processes and Projects

BI Framework

Pros:
- Quick to build
- Politically uncharged
- Easy to change
- Low cost

Cons:
- Alignment
- Consistency
- “Schema Light”

Analysis
Begets
Reports

Analysis and Prediction
Ad hoc queries
Volatile Data

Analysis
Begets
Reports
The new analytical ecosystem

Operational Systems (Structured data)
- Operational System
- Operational System
- Machine Data
- Web Data
- Audio/video Data
- External Data
- Documents & Text

Hadoop Cluster

Extract, Transform, Load (Batch, near real-time, or real-time)

Streaming/CEP Engine

Data Warehouse

Virtual Sandboxes

Free-Standing Sandbox

Analytic platform or non-relational database

Dept Data Mart

BI Server

In-memory Sandbox

 Alerts

Reports /Dashboards

Top-down Architecture

Bottom-up Architecture

Power User

Casual User
Questions?

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