Making it Stick:
The Secret to Developing a Data-Driven Culture

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Data Analytics?
Agenda

Data Analytics and Cultural Connections
Effecting Cultural Change
Cultural Success/Failure
Practical Application
“Big” and “Little” Data

**Data**
Information in raw or unorganized form (such as numbers or symbols) to represent an idea

**Big Data**
Datasets whose size is beyond the ability of typical database software tools to manage and analyze the information

**Little Data**
Anything that is not big data

Isson & Harrition, 2013; McKinsey Global Institute, 2011; Business Dictionary, 2017
Characteristics of Big Data

Volume

Data Complexity

Velocity

Variety
What is Analytics?

*Scientific process of transforming data into insights for making better decisions*

*In order to*

- Discover
- Explore
- Visualize
- Communicate

*patterns or trends in data*
Components of Data Analytics

Source: Bergman, S. M. (2016, December). Applied data analytics: It is not all about the numbers. Presentation made to the Appalachian State University Walker College of Business, Boone, NC.
Components of Data Analytics

...But it’s the people who drive results
LET’S TALK THEORY

Organizational & Individual Level
Approaching Change from 4 Perspectives

- **Humanistic**
- **Behavioral**
- **Psychodynamic**
- **Cognitive**

People are inherently capable of change, but need enabling structure/strategies.

Adapt approach to consider emotional state of change implementers.

What are the desired behaviors?

To achieve alignment, there must be a link between organizational and individual goals.
The Organizational Level

Lewin (1947, 1948)

Unfreeze → Change → Refreeze

Change Model

Forces for Change

Resistance to Change

Current State

Desired Future State

Forces for Change

The Organizational Level

_Schein (1980) – An elaboration on Lewin’s Change Model_

**Unfreeze**
- Create the motivation to change

**Change**
- Learn new concepts and new meanings for old concepts

**Refreeze**
- Internalize new concepts and meanings

The Individual Level

Unfreeze

Learning Anxiety

Survival Anxiety

Current State

Forces for Change

Forces for Change

Resistance to Change

Resistance to Change

Desired Future State


Components of Data Analytics

Technology
Mathematics
Methodology
People
Business

Source: Bergman, S. M. (2016, December). Applied data analytics: It is not all about the numbers. Presentation made to the Appalachian State University Walker College of Business, Boone, NC.
Components of Data Analytics

People

Source: Bergman, S.M. (2016, December). *Applied data analytics: It is not all about the numbers.* Presentation made to the Appalachian State University Walker College of Business, Boone, NC.
People Determine Culture

Depth

Breadth

Value

https://www.oreilly.com/ideas/being-data-driven-is-all-about-the-culture
People Determine Culture

Depth

*How far-reaching are data-gathering processes?*

[https://www.oreilly.com/ideas/being-data-driven-is-all-about-the-culture](https://www.oreilly.com/ideas/being-data-driven-is-all-about-the-culture)
People Determine Culture

Breadth

How is data **used** and **viewed** across the organization?

https://www.oreilly.com/ideas/being-data-driven-is-all-about-the-culture
People Determine Culture

**Depth**
How far-reaching are data-driven processes and practices?

**Breadth**
How is data used and viewed across the organization?

**Value**
What resources and training are invested in leveraging data as a strategic asset?

https://www.oreilly.com/ideas/being-data-driven-is-all-about-the-culture
Real World ROI

316 Decision-Makers | Organizations with Revenues ~$500 million

RESULTS:

<table>
<thead>
<tr>
<th></th>
<th>Revenues</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3%</td>
<td>1-3%</td>
<td></td>
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</tbody>
</table>

How Significant is 1-3%?

3% x 500 million = $15 million
Wholesale Distributors Inc.

Gamification Project

**Goal:**
- Production Up
- Safety Incidents Down
- “Miss Picks” Down

**Solution:**
- Competition with Prominently Displayed Results
- Education around Business Value
- Employee Involvement and Input

**Result:**
- Employee Engagement Up
- Productivity Up
- Safety Incidents Down
- Miss Picks Down

**Production Goals**
- 95% → 100% → +40%
40% Of Data Initiatives Fail

Why?

Cultural Roadblocks

Reluctance to practice data-driven decision making

Data deployed in isolation

Absence of a clear business-case

Frontline employees not on board

Lack of communication

Meds-R-Us

Disconnect Between Corporate Culture & Site Culture

- Perceived Utility
- Accountability
- Improvement

### KPI Visualization

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
<th>Change</th>
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<tbody>
<tr>
<td>Absolute Deposit</td>
<td>8,360</td>
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<tr>
<td>CSHA Deposit</td>
<td>4,161</td>
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<tr>
<td>Average Impact</td>
<td>5,792</td>
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<tr>
<td>Identity Interval</td>
<td>8,727</td>
<td></td>
</tr>
<tr>
<td>ROI</td>
<td>41</td>
<td>-10%</td>
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<tr>
<td>Net Profit</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Net Margin</td>
<td>1,224</td>
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</tr>
<tr>
<td>Net Income</td>
<td>353</td>
<td></td>
</tr>
<tr>
<td>Net Loss</td>
<td>333</td>
<td></td>
</tr>
<tr>
<td>Net Income in Last Quarter</td>
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<td></td>
</tr>
<tr>
<td>Net Loss in Last Quarter</td>
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<td></td>
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<tr>
<td>Cost of Goods</td>
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<tr>
<td>Selling, General and Administrative Expenses</td>
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<td>Export</td>
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<tr>
<td>Imports</td>
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<tr>
<td>Days to Admit</td>
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<td>1</td>
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<tr>
<td>Days to Discharge</td>
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<tr>
<td>Expenditure Excluding Administrative Exp</td>
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<td></td>
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<tr>
<td>Annual Expenditure</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>Operational Expenditure</td>
<td>41</td>
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</tr>
</tbody>
</table>

Expenditure includes Administrative Expenses
Practical Application

Unfreeze

Current State/Future Vision

Change

Change Leaders

Refreeze

Communication

Practical Application

Unfreeze

Communication, Communication, Communication

Change

Training and Employee Development

Refreeze

Employee Involvement & Empowerment

Practical Application

Unfreeze
Align HR processes to support new “current state”

Change
Remove obstacles to new standard

Refreeze
Remain flexible and aware of need for future change

Questions?

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References

- https://www.slideshare.net/RIZWANKHURRAM/lec2-part2