The Light and Dark Side of HR Analytics

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Helping companies use data to solve business challenges and enhance decision-making

Career history in:

- Automotive engineering,
- Supply chain/procurement,
- Human resources analytics (HRA)
Today…

Typical applications of HR Analytics (HRA)

Concerns, ethical considerations and challenges associated with HRA
• Analytics on crime patterns allow Police to assign their sparse resources based on probable crimes.

• Result? Reduction in crime through targeted patrols.
Value in Analytics

- Analytics in transportation.
- Optimized bus routes, train schedules, UPS/FedEx routes, airlines routes.
Value in Analytics: A Case Study

Inventory = money tied up that the business can’t use

- How much inventory should we carry for each product?
- Approach: Look at ordering patterns of customers for the past few years? Trend?
- Result: 33% of products were ordered once every year. End of life? New product?
  - Balance in-stock for customer service with cost of inventory and supplier lead times.
AI Examples

- “Single” to “In a relationship,” 2 weeks before you do
- Predict your level of intelligence
- Whether you are depressed?
- Recognize your face... sort of...
Smart Diaper

- Chip
- Takes a sample, analyzes it, sends the data to the cloud
- Predicts an infection before you see any physical symptoms
- Sends an alert to your mobile device
Whether you’re studying people or machines:

- What are the business questions you are trying to answer.. or business problem you’re trying to solve?
- If we can act on the results of our analytics, what is it worth to do so?
Optimization of Machines
Optimization of People

If I create a predictive algorithm to optimize some aspect of my employees, how easy is it to adjust people?

Define metrics?
When you put a sensor on a machine, it rarely objects… when you put a sensor on people…
Case Study: Newspaper Company

Was there an opportunity to reduce office space by replacing dedicated offices with “hotel sites?”

- Decided to measure how much time reporters spent at their desks
- A sensor was installed under the desks
- What happened?
Catch 22 for People Studies

Employees found the sensors

Catch 22

• If you told employees about the sensors, they would likely behave differently, producing inaccurate data.

• Not telling employees about the sensors destroyed the trust between employer and employee.
Analytics within HR

...tackles business questions of value throughout the employee life-cycle

• How do we optimize recruitment efforts?
• What drives turnover (people leaving)?
• How do we forecast demand for future talent?
• How do we measure the success of HR?
Wearable Devices

- Heart rate
- Sleep patterns
- Exercise records (or the lack thereof)
Wearables

Employer assumes:

- If employees are aware of their own data from wearables, that they will act to improve their health.
- Improved health will reduce the cost of company-provided health care.
Question

- Who owns the data collected?
- Employees wonder if their health premiums will increase if they show “bad data.”
Catch 22

Employees who may benefit the most = Employees who may fear it the most
The Challenge of New Technology

Product creation based on the good it can do.
Discovery of how it can be misused.
The creation of regulations.

The risk is in the time between creation and regulation.
Business Questions

What key talent are we losing to external companies?

Who is the biggest threat?

Analytics

Developed dashboard to view competitive terminations

Dashboard revealed several key job categories and experience levels being targeted

Actions

Focus groups / surveys with identified targeted roles.

Take action on identified root cause(s).
Example: Pay action, career advancement, etc.

Focus + Prioritization = VALUE
Retirement Risk Models

- Who is likely to retire?
- Are they in a key role?
  - What is our plan to maintain continuity of key positions?
  - Do we need to plan for knowledge transfer?
    - Plan for knowledge transfer
    - Opportunity for “friendly redundancy?”
Reporters and governments may be well-intentioned, but they do not understand what reported diversity metrics are actually measuring, and therefore their conclusions are false. Corporations must perform proper diversity analytics to explain public misinterpretations.
Diversity and Pay Equity

Gender pay gap ≠ gender pay equity

**Equity**
- Is there equal pay within a job role?
- Are men and women promoted fairly?
- Hired fairly?
- Leave in the proportions we expect?

**Pay Gap Metric**
- What is the median pay value for men and for women?
- More than this metric is needed to explain diversity within a company
## Case Studies

| A global technology company was struggling to increase the diversity of its workforce for several years | A global e-reader/tablet company > 25% gender pay gap metric |
| Data analysis and creation of predictive models for diversity | Statistical analysis of gender fairness in hiring, performance reviews and compensation |
| Dashboards to monitor progress | Salary gap had nothing to do with gender |
| Gender diversity targets moving 10 times faster now | Report was fully disclosed by the CEO to employees and the public |
Good Intentions

Fairness across groups:
- Race
- Color
- Religion or creed
- National origin or ancestry
- Sex
- Age
- Physical or mental disability
- Veteran status

Fairness within processes:
- Hiring
- Promotions
- Training and development
- Transfers
- RIFs (layoffs)
- Performance appraisals
- Balanced terminations
Recommendations

- Companies, especially STEM companies are attempting to address opportunities across gender
- Put fairness tests in place to ensure this doesn’t inadvertently impact another employee group

STEM = Science, Technology, Engineering, Math
Opportunities for Efficiency/Focus

Do you recruit college grads? STEM grads?

Current methods:
- Attend many on campus events
- Restrict hiring to local schools
- Accept applications
- Hope you’ve hired a high-performer

Opportunity:
- Data analysis to see where your high-performers come from with good acceptance rates
Worker Safety Studies

Factors affecting safety

- Training hours, weather
- Age/gender
- Weekday, hours into shift

- Fewer safety incidents
- Fewer fines,
- Lower medical costs,
- Lower legal costs

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Factors of Job Success

**Hypothesized Characteristics of Success**

- Degree type
- Years of Experience
- Geographical location
- Prior training classes
- Relationship building skills
- Time spent making phone calls, attending meetings, answering emails

**Hypothetical Result**

- MBA / Engineering
- 5+ Years of Experience
- Have taken sales training
- Spend at least 20 hours/week in meetings

**Hypothetical Actions**

- We train our low performers on the missing factors
- We instruct our hiring staff to seek these skills in new employees*

*Seek legal advice first.
## Turnover

### Hypothesized factors driving the likelihood that an employee will leave the company

- Demographics
- Commute time
- Performance rating
- Salary market ratio

### Hypothetical Result

- <2 Years of Experience
  - Age 20-30
  - Commute more than 1 hour to work
Benefits of HR Analytics

Worker Safety
Recruitment
Hiring
Promotions
Diversity
Terminations

Increased worker satisfaction
Increased productivity

Cost savings
Lower cost of turnover
Reduced cost of safety fines
Reduced legal costs
Regulations and Trends

DATA PROTECTION IN HUMAN RESOURCES

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Trends

Protection
- GDPR
- Anti-spam laws
- California Privacy Act

Transparency
- EEO Reports
- UK Gender Reports
- Canada Federal Reporting
- GDPR
GDPR: May 25, 2018

- Data protection regulation put in place in the EU but...
  - Extends to those that do business with the EU
  - Extends to mailing lists that are open to members of the EU
- Breach notification is mandatory when a data breach is likely to “result in a risk for the rights and freedoms of individuals”
- **Within 72 hours** of first having become aware of the breach
GDPR: May 25, 2018

- The right to be forgotten
  - The right to be forgotten from the HR system of a former employer
  - The right to be removed from a mailing list (which hasn’t been the same as unsubscribing)
- Assign data privacy officers
California Consumer Privacy Act

- Summer 2018
- Grants California residents a broad range of European-like privacy rights
- Effective January 1, 2020
- Anticipate other states to follow
How Sensitive HR Data is Released

- HRIS system
- Applicant tracking system
- Performance system
- Talent management system

How is sensitive data released?

- Restrict access to systems
- Restrict access to download of sensitive fields
- Risk = emailing sensitive values AFTER an authorized person downloads it from an HR system
The State of HR Data

HRIS? Payroll?
Am I here?
Am I in the Cloud?

TM? PM?

LMS? Finance?

Hello? Can we talk?

Let's talk!

Data Warehouse

Hello? Can we talk?

Let's talk!

How often can we talk? Every minute? Day?

Data Visualization Tool
Self-service Dashboards

Challenges:

- Multiple data sources*
- Data cleanliness
- Consistency of definitions
- Education on how to interpret the data*
HR Skill Set Challenge

- HR does not have prior credibility of being a numbers-driven function
- HR leaders can’t envision the value in analytics
- Few data analysts have business acumen to educate these leaders

Provide us with worker insights

Tell us about your business problems
The Changing CHRO

An increasing number of new CHROs are coming from outside of HR… (Ops, Finance, Engineering)
Summary

- It is possible to apply analytics to your workforce
- There is value in doing so
- You need to be careful in planning what you will study and your ability to act on the results
- Disparate HR systems yield many of the same data challenges as we see in other functional areas
- HR is slowly transitioning over to becoming more data-driven in its decision-making