Analytics and Predictive Modeling to Inform HR Policy and Transformation
A Case Study
“People are our greatest asset”
“Are you truly optimizing your Human Capital investment?”
Advances in information technology and analytic methods are making it possible for organizations to manage investments in human capital in a way that can have a measurable impact on business performance.
### A new era of human capital management

<table>
<thead>
<tr>
<th>TODAY</th>
<th>TOMORROW</th>
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</thead>
<tbody>
<tr>
<td>What employees <strong>say</strong></td>
<td>What employees <strong>do</strong> based on actual behavior</td>
</tr>
<tr>
<td>What Human Capital programs <strong>cost</strong></td>
<td><strong>True returns</strong> on investment</td>
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<tr>
<td>What others <strong>do</strong></td>
<td>What <strong>works for us</strong></td>
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</tbody>
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UnitedHealth Group profile

- Preeminent health and well-being company
- Multiple business segments – $75B in revenues

- 70,000 employees – global footprint
  - Customer service representatives
  - Clinical professionals
  - Sales personnel
  - Actuarial experts

- Frequent, significant acquisitions
# The transformation journey

<table>
<thead>
<tr>
<th>Phase 1</th>
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<tbody>
<tr>
<td><strong>Define</strong></td>
<td><strong>Implement</strong></td>
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<td><strong>Control/Optimize</strong></td>
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**Phase 1: Define**
- 1999
  - Research
  - Benchmarking
  - Strategic Design
  - Process design
  - Vendor selection

**Phase 2: Implement**
- 2000
  - Outsourced Service Center
  - IVR
  - Basic self-service
  - Policy standardization
  - Reduction of HR employees
  - Unproven technology

**Phase 3: Analyze/Improve**
- 2001 – 2004
  - Streamline vendors
  - eLearning
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  - Knowledge management
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**Phase 4: Control/Optimize**
- 2005 +
  - Analytics
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**Human Resources**
From **Labor Cost** to **Strategic Assets**
From **HR Function** to **Strategic Competence**
From **Compliance** to **Risk Mitigation and Governance**
From **Owning the People** to **Supporting managers** with tools to identify, develop, retain Top Talent
Smaller, more focused HR function

- Payroll
- Employee Relations
- Retirement Savings
- Absence Management
- Health & Welfare
- Communications

Strategic HC Function
- Responsible for coordinating key corporate-wide human capital initiatives (e.g., leadership, retention, diversity)
- Clearinghouse for HC expertise
- Setting Corporate HC policy
- Learning and Development
- Executive Compensation

- 401(k)
- Recruiting
- Integrated Disability (STD, LTD, WC)
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- Knowledge Base
- Employee Self Service
- Manager Self Service
- Request a Leave
- Web Case Manager
- Call Prompter

Self-Service
- General information and FAQs
- Basic research
- Advice, if appropriate
- Process transactions
- Send forms

Help Desk
- Complex solutions and transactions
- Conducts in depth research
- Resolves issues
- Processes and poor reviews transactions

Specialists & Case Managers
- Policy interpretation
- Development of policy and strategy
- Corporate Human Capital support
- Operational oversight

Senior Managers

Integrated Case Management
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- Internal Labor Market
- Compensation efficiency
- Human Capital Strategy
- Business outcomes
The Internal Labor Market:
The core of a data-driven approach

- Like all employers, UnitedHealth Group operates its own unique internal labor market

- The internal labor market is defined by how we recruit, hire, train, develop, compensate, transfer, promote, coach, retain

- The internal labor market should create two desired sets of outcomes
  - Workforce outcomes
    - Employee engagement, enhanced workforce capability, and a strong performance culture
  - Business outcomes
    - Growth, profitability, high levels of customer service
An ILM map: “Mapping” the flows that determine what your workforce is and what it is becoming

Hires

- Level 8: 11 hires
- Career level: 5 levels
  - 5: 190 hires
  - 4: 312 hires
  - 3: 116 hires

Promotions

- Level 8: 81 promotions
- Career level: 3 levels
  - 3: 85 promotions

Exits

- Level 8: 16 exits
- Career level: 3 levels
  - 3: 86 exits

Lateral moves: 186 moves
## Managing the ILM requires good data

### Facts
- Counts, rates

### Delivers...
- Current-state information such as:
  - What is our turnover rate?
  - How many promotions did we make?
  - What are our spans of control?

### Uses
- Reporting (internal and external)
- Tracking progress toward goals
- Monitoring trends

### Other
- Business intelligence tools

### Dashboards for Monitoring

### Deep-Dive Analytics
- Proven inferences about cause-and-effect relationships
- Answers to questions such as:
  - Why do people quit?
  - Do lateral moves make employees promotable?
  - What experiences drive employee engagement?
- Strategy-making
- Forecasting
- Problem-solving

- Statistical modeling techniques
1. **Correlation**
   A practice and individual performance must be related

2. **Time (directionality)**
   The event or condition must precede measured performance

3. **Isolation**
   Other factors that could influence promotion are identified and accounted for

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We test how events in a prior year – e.g., a move between segments – affects outcomes in the following year.

We isolate impact through statistical modeling, requiring results to be robust across several tests.
A typical, simple relationship is plagued by “noise” – and can produce misleading findings. With appropriate controls, findings will be more accurate.

Modeling serves to clarify complex relationships.
Data from multiple sources is brought together to inform decision making.

- Labor Market Data
- Market and Industry data
- External Market Database
- HRIS and Payroll
- HRO Data (e.g., benefit selection, absences, web “hits”)
- Other Internal Sources (e.g., applicant files; training inventory)
- HC Management Database
- COMMON DATA PLATFORM
- Performance Database
- Company or business unit financials
- Data on quality and operational performance
- Customer Data
- Business Impact Modeling
- The Scorecard
- Human Capital Tracking Metrics
How do we BUILD talent?
Modeling result #1: Mobility makes promotion more likely …

- Tenure: -5 yrs
  - Grade promotion: -15%
  - Level promotion: 8%

- Performance: N vs M
  - Base pay rate inc in prior yr: 5%
  - Level promoted in prior yr: 18%

- Performance: E vs M
  - Changed segment and job in prior yr: 25%
  - Changed segment not job in prior yr: 13%
  - Changed job not segment in prior yr: 7%

- Mobility’s impact on promotion

Percentage change in promotion probability:

-120% -100% -80% -60% -40% -20% 0% 20% 40% 60% 80% 100% 120%
Modeling result #2: … But moving to a new segment also makes voluntary turnover more likely.

- Tenure: +5 yrs
  -46% change in turnover probability

- Performance: N v M
  -18% change in turnover probability

- Performance: E v M
  -37% change in turnover probability

- 9-block leader
  -46% change in turnover probability

- Base pay rate inc in prior yr: +5%
  -7% change in turnover probability

- Bonus in prior yr: +$5,000
  0% change in turnover probability

- Changed segment and job in prior yr
  23% change in turnover probability

- Changed segment not job in prior yr
  18% change in turnover probability

- Changed job not segment in prior yr
  10% change in turnover probability

- Ever acquired
  0% change in turnover probability

- Unemployment rate: +1%
  4% change in turnover probability

Mobility’s impact on voluntary turnover
Looking across models generates key insights

**PAY DRIVERS**
- Age (10 yrs older)
- Levels from Sup (+1)
- Rating: E v M
- Tenure in Job (1 more yr)
- Org Tenure (10 more yrs)
- Unemployment Rate (+5 %-pts)
- Rating: N v M

**TURNOVER DRIVERS**
- Levels from Sup (+1)
- Rating: Needs Improvement
- Promoted (Grade) in Yr
- Tenure in Job (1 more yr)
- Base Pay (+10%)
- Stock Option Amount (+10%)
- Rating: Excellent
- Stock Option Receipt

**Increases turnover**
- Unemployment Rate (+5 %-pts)

**Decreases turnover**
- Levels from Sup (+1)
- Rating: Needs Improvement
- Promoted (Grade) in Yr
- Tenure in Job (1 more yr)
- Base Pay (+10%)
- Stock Option Amount (+10%)
- Rating: Excellent
- Stock Option Receipt

**Increases pay**
- Salary Increase (+10%)

**Decreases pay**
- Salary Decrease (+10%)
- Age (10 yrs older)
- Levels from Sup (+1)
- Rating: E v M
- Tenure in Job (1 more yr)
- Org Tenure (10 more yrs)
- Unemployment Rate (+5 %-pts)
- Rating: N v M
Modeling result #3: Promotion increases likelihood of turnover

**TURNOVER DRIVERS**

- Levels from Sup (+1)
- Rating: Needs Improvement
- Promoted (Grade) in Yr
- Tenure in Job (1 more yr)

**PAY DRIVERS**

- Base Pay (+10%)
- Stock Option Amount (+10%)
- Rating: Excellent
- Stock Option Receipt
- Age (10 yrs older)
- Levels from Sup (+1)
- Rating: E v M
- Tenure in Job (1 more yr)
- Org Tenure (10 more yrs)
- Unemploy Rate (+5 % pts)
- Rating: N v M
### Modeling result #4: External conditions drive pay

#### Turnover Drivers

<table>
<thead>
<tr>
<th>Decreases turnover</th>
<th>Increases turnover</th>
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<tbody>
<tr>
<td>Levels from Sup (+1)</td>
<td></td>
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#### Pay Drivers

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Modeling result #5: Equity receipt reduces turnover

**TURNOVER DRIVERS**

- Levels from Sup (+1)
- Rating: Needs Improvement
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- Tenure in Job (1 more yr)
- Base Pay (+10%)
- Stock Option Amount (+10%)
- Rating: Excellent
- Stock Option Receipt

**PAY DRIVERS**

- Age (10 yrs older)
- Levels from Sup (+1)
- Rating: E v M
- Tenure in Job (1 more yr)
- Org Tenure (10 more yrs)
- Unemploy Rate (+5 %-pts)
- Rating: N v M
Modeling result #6: “Supervision” drives turnover and cost

**TURNOVER DRIVERS**
- Levels from Sup (+1)
- Rating: Needs Improvement
- Promoted (Grade) in Yr
- Tenure in Job (1 more yr)
- Base Pay (+10%)
- Stock Option Amount (+10%)
- Rating: Excellent
- Stock Option Receipt

**PAY DRIVERS**
- Age (10 yrs older)
- Levels from Sup (+1)
- Rating: E v M
- Tenure in Job (1 more yr)
- Org Tenure (10 more yrs)
- Unemployment Rate (+5 % pts)
- Rating: N v M
So, how do we BUILD talent?

- Encourage transfers
- Provide value to “career” employees
- Increase developmental support
Lessons learned

- Say-Do problem
- Intuition and benchmarking can be dangerous
- Human capital is unique
- Large scale HR outsourcing can support strategic decision making
Questions?