OPTIMIZING PROJECT STAFFING: THE CONVERGENCE OF ANALYTICS AND TECHNOLOGY

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Questions
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Feedback
Please take the time to fill out the feedback form at the end of this webcast so we can continue to improve.
TODAY’S AGENDA

- Introduction: Who is ABM and Where is it Heading?
- The Matching Problem: Understanding the Challenge
- The Solution: ABM’s Unified Workforce® Technology
- The Analytical Foundation: Business Impact Modeling®
- Outcomes of Actions Taken by ABM
- Key Learnings
THE MATCHING PROBLEM
WHAT’S THE CHALLENGE? WHAT’S THE OPPORTUNITY?

Human capital management must effectively address three core challenges:

- Secure the *right* workforce – employed or contingent – from the external labor market – “the external labor market matching problem”
- Efficiently allocate that workforce to the right assignments, jobs and roles – “the internal labor market matching problem”
- Motivate that workforce to perform effectively – “the incentive problem”

The marriage of analytics and technology permits the development of a solution that permits efficient management of all three challenges together.

Most “big data” solutions have been focused on improving recruitment and selection processes to address the challenges of external labor market matching. The UW approach focuses on improving the efficiency of internal labor market matching in a way that strengthens performance incentives as well.
IN ECONOMIC TERMS, OPTIMIZING HUMAN CAPITAL BOILS DOWN TO EFFECTIVELY MANAGING LABOR STOCKS AND FLOWS

Labor Stocks:
The extent, quality and composition of your organization’s labor assets.

- What is the appropriate mix of skills, knowledge, experience, capabilities and other productive attributes required to deliver on your organization’s business needs? What, if anything, will need to change moving forward?
- To what extent does your organization need to buy, build or rent the requisite workforce requirements?
- On which practices do you rely most to shape and secure your right workforce, i.e., recruitment/selection, training & development, contingent staffing, performance management, retention?

Labor Flows:
The productivity of those workforce assets that convert the stocks of capability into effective labor services.

- How is human capital deployed, i.e., how is work performed? Specifically, how is available talent – whether employees, contractors or other forms of contingent labor – matched to jobs, roles, assignments?
- What motivates your employees or contingent labor to perform? What engages them?
- To what extent do you direct the work of employees through close supervision versus incentivize them to self-select the right level of effort and diligence to perform on the job?
YOU ARE MANAGING A PRODUCTION PROCESS THAT CONVERTS LABOR STOCKS INTO LABOR FLOWS THAT DRIVE BUSINESS VALUE | TEMPLATE

**Organization of Work**
(schedule, staffing, location)

**Supervision and Performance Management**

**Training and Development**

**Information Flow**

**Employment Proposition**
(total rewards: pay, benefits, careers, work conditions)

- **Employee engagement**
- **Workforce productivity**
- **Culture and community**
- **Quality**
- **Customer value**

- **Attitudes**
  entrepreneurship; creativity; innovativeness; risk tolerance; team orientation

- **Attributes**
  health and welfare; education; demographics

- **Capabilities**
  skills; know-how; knowledge and expertise

**Labor Stocks**

**Practices/Enablers**
Practices/enablers will inform labor stocks over time

**Labor Flows**

**Outcomes**

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YOU ARE MANAGING A PRODUCTION PROCESS THAT CONVERTS LABOR STOCKS INTO Labor Flows that drive business value | Technical Services

- **Attitudes**: creative; curious; humility; positive; trustworthy
- **Attributes**: Detailed; diligent; flexible; quality; safety-focused; tenure
- **Capabilities**: expertise; experience; intuition; knowledge; skill (to activity); student; teacher

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- **Organization of Work**
  (merit based distribution)

- **Supervision and Performance Management**

- **Training and Development**
  (contextual and formal)

- **Employment Proposition**
  (individual and team motivation; performers’ opportunity; conditions)

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- **Information Flow**

- **Practices/enablers** will inform labor stocks over time

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- **Contract retention**
- **Customer value**
- **Indispensable expertise**
- **Profitability**
- **Service quality**

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- **Labor Stocks**
- **Labor Flows**
- **Outcomes**

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YOU ARE MANAGING A PRODUCTION PROCESS THAT CONVERTS LABOR STOCKS INTO LABOR FLOWS THAT DRIVE BUSINESS VALUE | SEMI-TECHNICAL SERVICE

Attitudes
- hard worker; humility; friendly; positive; trustworthy; welcoming

Attributes
- approachable; attention to detail; discretion; presentable; punctual

Capabilities
- skills (to activity); teacher; student; knowledge; expertise; experience

Organization of Work
(merit based distribution)

Supervision and Performance Management

Training and Development
(contextual and formal)

Information Flow

Employment Proposition
(individual and team motivation; performers’ opportunity; conditions)

Attitudes
Supervision and Performance Management
Training and Development
Information Flow
Employment Proposition
Organizations of Work

Practices/enablers will inform labor stocks over time

Labor Stocks
Practices/Enablers
Labor Flows
Outcomes

Customer value
Conscientious workforce
Culture and community
Profitability
Workforce engagement
Revenue growth
Service quality
<table>
<thead>
<tr>
<th>Turning Pain Points Into Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing peak and contingent labor requires manual effort and is often inefficient</td>
</tr>
<tr>
<td>Identifying and assessing qualified talent—in terms of organizational fit and job readiness—is difficult to get right and costly</td>
</tr>
<tr>
<td>Scrambling to find resources to fill service gaps due to unforeseen absenteeism and attrition</td>
</tr>
<tr>
<td>Constructing teams based on availability and organizational hierarchy, potentially overlooking candidates better suited for the request</td>
</tr>
</tbody>
</table>

Expand capability to manage and deploy your workforce by optimizing the stocks and flows of internal and external resources
THE SOLUTION: UNIFIED WORKFORCE
OUR JOINT PROPOSITION: UNIFIED WORKFORCE

Technology

- Enable flexible staffing and smart matching of the right employee—in terms of skills, experiences, and interests—to the right activities/projects
- Proactively manage disparate labor pools on a single platform
- Provide ongoing learning and assessment opportunities to support career development and ensure pre-qualified talent

Analytics

- Define optimal staffing models, calibrated to your organization’s unique internal labor dynamics
- Identify key drivers of team productivity and employee engagement to determine how best to compel behavior
- Incorporate modeling results into technology platform, continuously refining the points engine to compel behavior and drive success
UNIFIED WORKFORCE
PERPETUAL PERFORMANCE

objective points of measurement

socially influenced community

leverage points tactically
MATCHING AND MOTIVATING
DISTRIBUTING WORK

Service required
Device based request

Jan
owner

Ed
dispatch

WO# 2322
Sensor

WO# 42871

WO# 9286
Airflow

push

Lee
HVAC E2

Kim
ELEC P8

Wo# 2322
Sensor

Wo# 42871

Wo# 9286
Airflow

Business
Financial
Logistics
Office Rules
Skill Verification

Pull

Dan
MRO F9

Joe
ENRG P4

Lee
HVAC E2

Bob
HVAC F3

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CORE DESIGN POINTS

Unified Workforce

Organizational EQ
- Reliability loop
- Loyalty
- Ownership
- Recognition

Trust
- Community
- Relevance
- Failure loop
- Boundaries

Collective Intelligence
- Perpetual learning
- Agility
- Quality loop
- Risk reduction

Contextual Insight
- Asset centric
- Perspective
- Confidence
- Success loop
THE ANALYTICAL FOUNDATION: BUSINESS IMPACT MODELING®
BUSINESS IMPACT MODELING® WAS THE METHODOLOGY DEPLOYED TO QUANTIFY DIRECT LINKS BETWEEN HUMAN CAPITAL MANAGEMENT AND BUSINESS RESULTS

An HR practice’s effect on productivity is determined by examining the relationship between the practice and productivity across work groups and over time.
IT IS BASED ON SOUND STATISTICAL ESTIMATION METHODS THAT HELP ISOLATE AND MEASURE THE IMPACT OF A GIVEN PRACTICE OR ATTRIBUTE

*Three conditions* must be met to show that a human capital factor drives a workforce/business outcome:

1. **CORRELATION**
   
   The factors are related

   Tenure **YES** Profitability

2. **TIME (Directionality)**
   
   One *precedes* the other

   Tenure **YES** Profitability
   
   Month 1 → Month 2

3. **ISOLATION (Controls)**
   
   Other factors are *ruled out*

   Tenure **YES** Profitability
   
   Size of operation
   
   Turnover
   
   Age
Implications of these persistent effects are profound:

- The effects are much more sizable, stable, and enduring than ever realized
- They are dominated by human capital issues
- A powerful human capital strategy provides a sustainable competitive advantage – unlike the effects of capital and technology which appear to be much more easily competed away
USE EXAMPLE MOST RELEVANT TO AUDIENCE. FOR INSTANCE, USE BANK EXAMPLE IN APPENDIX FOR FS FIRMS.
In this financial services company, human capital factors explain a large fraction of the variance in performance across branches and regions.

Performance variance driven by people factors

<table>
<thead>
<tr>
<th>Metric</th>
<th>% of explained variance accounted for by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGI per FTE</td>
<td>... demographic factors only</td>
</tr>
<tr>
<td>Pretax income per FTE</td>
<td>... demographic factors only</td>
</tr>
<tr>
<td>Total customer retention</td>
<td>... all human capital factors</td>
</tr>
<tr>
<td>Retention of key customers</td>
<td></td>
</tr>
<tr>
<td>Market share</td>
<td></td>
</tr>
<tr>
<td>Average revenue per customer household</td>
<td></td>
</tr>
</tbody>
</table>

Business performance metric
ANALYSIS DEMONSTRATED THE IMPORTANCE OF EMPLOYEE TENURE IN THE FRONT-LINE JOBS

- Grow firm-specific human capital (+1 year of service) $15m from increased revenue
- 2 percentage points of market Revenue gain $40m
- Greater market share $25m from new customers and increased revenue

...general human capital has no such impact
SIMILAR MODELING OF THE DRIVERS OF PROFITABILITY HELPED THIS EDUCATIONAL SERVICES FIRM IDENTIFY WHICH ROLES GENERATED THE HIGHEST VALUE

- Has an Assoc. Manager
- Greater proportion of part-time employees (15% vs 10% of staff)
- More rehires in month (1 vs 0)
- More new hires in month (3 vs 1)
- Has a Local Specialist
- More unit employees (25 vs 19)
- Higher ratio of household disposable income (1.23 vs 1.2)
- More customers 50k 5-17 within 5-10 miles (30,000 more)
- Higher percentage of college educated customers (85% vs 80%)
- More customers 50k 5-17 within 5 miles (10,000 more)

The models on which these results are based control for employee attributes, seasonality, staffing, and location. The model predicts profit level of units in the next month.
SELECTED RESULTS FROM MODELING AT ABM
WHAT WE DID AT ABM

• Rigorous analytics help identify optimal staffing or projects and thereby informs UW

• Overall objective was to examine the extent to which specific workforce factors explain differences in productivity across projects
  – Once the impact of these variables was quantified, a "true cost" model was developed to represent the economics of outsourcing an organization’s blue collar labor under different conditions

• For purposes of this study, we defined profitability as pre-tax net income

• Various factors were examined to isolate statistically significant factors which predict monthly variation in profit levels
KEY FINDING: WHILE LARGER PROJECTS TEND TO BE MORE PROFITABLE, OPTIMAL PROJECT SIZE VARES BY BUSINESS LINE

IMPACT OF HEADCOUNT ON PRE-TAX INCOME

<table>
<thead>
<tr>
<th>Business Unit 1</th>
<th>Business Unit 2</th>
<th>Business Unit 3</th>
<th>Business Unit 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>lowest optimal headcount</td>
<td>highest optimal headcount</td>
<td>Percentage (%) Impact on Pre-tax Net Income</td>
<td></td>
</tr>
</tbody>
</table>

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KEY FINDING: OPTIMAL USE OF PART-TIMERS ALSO VARIES ACROSS BUSINESS LINES

IMPACT OF FULL-TIME UTILIZATION ON PRE-TAX INCOME

<table>
<thead>
<tr>
<th>Business Unit</th>
<th>Lowest Optimal % FT</th>
<th>Higher FT utilization always favorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Unit 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Unit 3 (n/s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Unit 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
KEY FINDING: TENURE IS A SIGNIFICANT DRIVER OF PROFITABILITY IN ONLY TWO OF THE BUSINESSES – A FINDING MIRRORED IN ESTIMATES OF TURNOVER COST

IMPACT OF TENURE ON PRE-TAX INCOME

*same optimal years of tenure, but different impact*
OUTCOMES OF ACTIONS TAKEN AT ABM
WHAT WAS DONE WITH THESE RESULTS?

• Execution of Integrated Facilities Solutions
  – Identification of areas of consistency across the enterprise, facilitating a “one-ABM” approach
  – Identification and prioritization of crucial differences requiring more tailored approach to each business line

• Commitment to “Unified Workforce” Model
  – Identification of optimal project sizes within the business lines established basis for enterprise effort to enable, technologically, flexible, adaptable staffing and enhancement of the Unified Workforce Platform
  – Demonstrated value of creating and deployment internal labor market matching mechanism to get the right talent:
    - To the right project
    - At the right time
    - At the right cost

• Development and Deployment of Specific Tools
  – True cost estimator
    - To enable objective, quantitative assessment of the value of outsourcing blue collar labor to ABM, optimize delivery and set pricing parameters
    - To help avoid engagements that would not deliver value to both ABM and its customers
ANALYTICAL RESULTS STRENGTHENED THE BUSINESS CASE FOR IMPLEMENTING UW

logic: [ platform approach ] allows [ incremental component value ] leading to a [ holistic solution ]
In addition to supporting UW, modeling results served as the basis of a spreadsheet tool that quantifies the value of outsourcing in specific cases and provides pricing parameters.

**TOOL #1**

**TOOL #2**
KEY LEARNINGS
MODELING OF THE “PRODUCTION PROCESS” FROM A LABOR STANDPOINT CAN HELP:

- Identify and quantify key workforce drivers or sources of value in a way that helps optimize human capital management
- Solve specific workforce management problems
- Provide the basis for establishing a broader workforce strategy built on a foundation of hard evidence, rather than beliefs, benchmarks and so-called “best practices”
- Enable development of practical tools and systems to support and speed real time sales and delivery of services
- Establish and communicate the business case for major workforce decisions and investments, creating “buy in” for top executives and providing the basis of accountability for decisions made

Applying this new discipline will improve the decision process around human capital and support more reliable workforce management and planning.
QUESTIONS AND ANSWERS:

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