HR BI Review Project

- Creating standards for counters and measures
- Selecting the top measures to track
- Recommendations to resolve data integrity issues for top measures
Multi-dimensional/OLAP Terminology

- **Fact Table** – a central table in a data warehouse schema that contains numerical measures and keys relating facts to dimension tables. A fact table contains data that describes a specific event and has a defined *grain*, or level of detail.

- **Cube** – multi-dimensional data structure consisting of measures and dimensions.

- **Measures** - the facts we are measuring within a subject area (e.g., Admit Count, Avg. GPA, Retention %)
  - **Stored Measures** - based on stored data in the relational fact tables (e.g., Admit Count, Registration Count)
  - **Calculated measures** – calculated on the fly based on specified algorithm ranging from simple to highly complex (e.g., Avg GPA, Retention %)

- **Dimensions** – defines how the measures are segmented
  - e.g., Term, Admit Type, Course, Career, etc.
  - **Dimension Members** – the list of values
  - **Hierarchies** – parent-child relationships defining how structures roll up (e.g., Subplan – Plan – Program – Career)
Why Measure?

If you can’t measure it, you can’t understand it.
If you can’t understand it, you can’t control it.
If you can’t control it, you can’t improve it.

James Harrington
*The Improvement Process*
Successful Metrics Must Begin with Standards

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<th>Symptoms</th>
<th>Root Issues</th>
<th>Organizational Impact</th>
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| • Reports delivered by different preparers or at different points in time conflict with one another.  
  • Debates ensure over whether the “right” data was used for reports.  
  • Questions constantly arise over how the data was derived. (lack of documentation) | Measure Inconsistency | • Mistrust of reports and analysis  
  • Analyses not repeatable                                                |
| • Results are misinterpreted by customers and key decision makers.  
  • Rely on particular measures without understanding measure scope.  
  • Consumers are unable to appropriately measure results.  
  • Debates ensure over whether results are “good” or “bad”.            | Lack of Understanding of Results | • Loss of credibility of data analysts and HR  
  • Inefficiency caused by debates  
  • Hesitancy to take action or implement interventions  
  • Delayed decision making                                              |
| Standards address these two root problems through agreed-upon formulas and shared understanding of measure meaning. |             | • Inappropriate action taken  
  • Opportunities for improvement are overlooked                          |
## What is a Standard?

A standard documents the definition/formula to be used consistently and establishes a shared understanding of meaning.

### Agreed Upon Formula
- Are we including the right parameters for the numerator and denominator?
- What headcount should be used in the formula?
- Should we use a rate or ratio to measure a particular topic?

### Shared Understanding
- What does the measure tell us about performance?
- Is our result good or bad?
- What does the measure not tell me about our performance?
HR Activity

Net Positions

- New Hire
- Rehire
- Add'tl Appointment
- Promotion
- Demotion
- Transfer
- Promotion
- Demotion
- Transfer

Active "Inactive" Positions
- Retired w/Benefits
- Leave of Absence
- Disabled

Active Employees

New Positions (Start)

Internal Movements In

Internal Movements Out

Other Movements In

Other Movements Out

Position End

Selected End Reasons

- Promotion
- Demotion
- Transfer
- Termination / Resignation
- Retirement
- Completed Assign
What precise time do we use for counts?

- If someone starts the first day in the month, are they in the start of month count?
- If they end the last day, are they in the end of month count?

**Measures**

1. Positions Prior Period - position as of prior period end (used for reconciliation... 1st day of month starts are not included)
2. Positions 1st Day – includes any positions effective the 1st day of the month
3. Positions Last Day – includes any positions as of the last day of the month (i.e., if end date is last day, it is counted)
4. Positions End – positions that have no end date (i.e., if end date is last, then not counted)
Counting Positions and Headcount

Multiple Objectives: Auditability (reconciliation) and Management Information

Positions

- Reconciliation
  - Positions Prior Period - position as of prior period end (used for reconciliation... 1<sup>st</sup> day of month starts are not included)
  - Positions End – positions that have no end date (i.e., if end date is last, then not counted
  - Positions Prior Period + Movements In – Movements Out – Positions End

- Management Reporting
  - Positions Last Day – includes any positions as of the last day of the month (i.e., if end date is last day, it is counted)
  - Positions 1<sup>st</sup> Day – includes any positions effective the 1<sup>st</sup> day of the month

Headcount

- Headcount – same counts as positions
- Exception: Headcount End includes employees where position ends last day of month and new position starts the first day of then next month
Foundation Rules

- Reconciliation Measures:
  - End of One Month = Start of Next Month
  - Start of Month Count + Movements In – Movements Out = End of Month Count
  - 1st of Month Movement In – not counted in Start of Month count
  - Last Day of Month Movements Out – not counted in End of Month count

- Employee transactions are allocated based on date/days in month for Weighted Average Counts

- In the case of multiple active positions, one position record is always designated as the Primary Position
Potential Data Quality Issues

• Insufficient design of reason codes to drive metrics in the data model (e.g., Voluntary vs. Involuntary Terminations)

• Codes not used for all transactions (i.e., null End Status)

• Inconsistent “matched pairs” of in/out records (e.g., Transfer In, but no Transfer Out)

• Transaction Effective Date Errors – Start/End dates are not accurate (e.g., gaps or overlap)