Using a Social Network Analysis to Inform Library Communication Patterns within the Harold B. Lee Library

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Library Description

- 33,000 faculty, undergraduate & graduate students
- 160 full- & part-time, non-student library employees
- Six divisions
  - Administration
  - Library Information Technology
  - Special Collections
  - Administrative Services
  - Public Services
  - Technical Services
Considerations

- Communication Levels
- Complexity
- Modalities
Method

• Self-reporting survey
  – all FT & PT, non-student employees
  – reminders to non-responders
• Reported level of communication with others
• Three-weeks completion time frame
• Communication Unit = one-way communication between 2 people
• Levels:
  A = No contact (No communication with person)
  B = As needed (an immediate or short-term interaction)
  C = Minimal (simple communication i.e., monthly newsletter)
  D = Moderate (medium level interaction)
  E = Strong (reoccurring important interaction)
  F = Deep (intense, complex communication).
Method: Categories

Cohesion
- Amount & type of relationships among employees within each division & department

Structural Equivalence
- Percent of identical and different Communication Units in division

Prominence
- Percent of total possible pathways available in a division

Obscurity
- Percent of employees in each division indicating no contact with others

Brokerage
- Most common communication level used within each division and between other divisions
# Findings: Response Rate

<table>
<thead>
<tr>
<th>Division</th>
<th>Total Employees</th>
<th>Number of Participants</th>
<th>Participation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>8</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>Administrative Services</td>
<td>10</td>
<td>9</td>
<td>90%</td>
</tr>
<tr>
<td>Library Information Technology</td>
<td>20</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>Public Services</td>
<td>52</td>
<td>38</td>
<td>73%</td>
</tr>
<tr>
<td>Special Collections</td>
<td>28</td>
<td>18</td>
<td>64%</td>
</tr>
<tr>
<td>Technical Services</td>
<td>49</td>
<td>37</td>
<td>76%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>167</strong></td>
<td><strong>125</strong></td>
<td><strong>75%</strong></td>
</tr>
</tbody>
</table>

Desired Response rate of 80% or better.
Findings: Cohesion

Amount & type of relationships

• Smaller Units* have higher cohesion on all levels
  – Administration 88%
  – Administrative Services 97%
  – LIT 94%

• Larger Units have lower cohesion
  – Cataloging & Metadata (30 employees)
  – Materials Acquisitions (18 employees)

• Dispersed Units have lower cohesion

* Units = departments &/or divisions
Findings: Structural Equivalence

Identical & Different Communication Units

• Identifies if directionality of communications is uniform
  – B = uniform; D = not

• Administrative Services & Administration largest difference
  – Newsletters with no response

• Needs to have individual review to determine appropriate levels

• May use personal communication genealogy

<table>
<thead>
<tr>
<th>Library Employee</th>
<th>Z To Others</th>
<th>Z From Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Strong</td>
<td>Deep</td>
</tr>
<tr>
<td>B</td>
<td>Deep</td>
<td>Deep</td>
</tr>
<tr>
<td>C</td>
<td>As Needed</td>
<td>Moderate</td>
</tr>
<tr>
<td>D</td>
<td>Minimal</td>
<td>No Contact</td>
</tr>
<tr>
<td>E</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>F</td>
<td>Minimal</td>
<td>Minimal</td>
</tr>
<tr>
<td>G</td>
<td>Minimal</td>
<td>No Contact</td>
</tr>
<tr>
<td>H</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td>I</td>
<td>Minimal</td>
<td>As Needed</td>
</tr>
<tr>
<td>J</td>
<td>Moderate</td>
<td>Deep</td>
</tr>
<tr>
<td>K</td>
<td>Minimal</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Findings: Personal Communication Genealogy

- Communication within division
- Dept. indicated by box shape
Findings: Prominence
Possible Communication Pathways

• Potential pathways to use for communication
• Ranges from 48 - 100%
  – Somewhat misleading
  – 48% of 870 = 418
  – 100% of 90 = 90
• Need to examine:
  – Obscurity
  – Individual patterns
Findings: Obscurity

No contact with Others

• Hinders communication, innovation & problem solving
  • Most are:
    – single or small groups
    – located on different floor or area
    – between employees in different divisions or departments
  – Arrows indicate obscurities or bottlenecks

• Obscurity on one level mitigated by connections on other levels
Findings: Brokerage

Most Common Communication Level in Division

• Contact within divisions:
  no contact (1)   deep (1)
  as needed (2)   moderate (2)

• Contact outside of home division
  – 23.5 / 30 (78%) are “no contact” (one tie)
  – 60% of these involve more than half of division employees

• Administration unique as within and outside division communication is “as needed”
Conclusion

• Overall communication in library is strong
  – Occurs on multiple levels
  – Has multiple pathways
  – Contact within most divisions & departments is solid

• Communication between divisions is weak

• Individuals need to review communication genealogy to determine if at appropriate levels

• Considerations:
  – making larger departments smaller
  – Co-locating employees for better contact
  – Having activities/opportunities to get to know or work with others outside of division/department
Limitations

- Low response rate (less than 80% as a whole)
  - 3 divisions were within 7%
  - 1 division was less than 2/3
- Analysis was single view at single point in time
  - Patterns change as job duties & personnel change
- Time frame affects ratings
  - Week, month, semester, year
- Modality may affect patterns
  - We tried to consider all but just using one or two may change
- Accuracy of individual memory
Thank you & Questions

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In God we trust. Everyone else needs to bring data!