Toward Using Matrix Visualizations for Graph Editing
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Visual Editing of the Graph's Structure – Node-Link- vs. Matrix Visualizations

<table>
<thead>
<tr>
<th>Good for:</th>
<th>Node-Link Visualization</th>
<th>Matrix Visualization</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>+ Overview of sparse graphs</td>
<td>+ Overview of dense graphs</td>
</tr>
<tr>
<td></td>
<td>+ Identification of paths in sparse graphs</td>
<td>+ Identification of existing/non-existing edges</td>
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<tr>
<td></td>
<td>+ Interaction with nodes</td>
<td>+ Interaction with edges</td>
</tr>
</tbody>
</table>

Difficult:  
- Communication of dense graphs  
- Interaction with edges

Difficult:  
- Identification of paths  
- Interaction with nodes

→ It makes sense to consider matrices for graph editing!

Edge Editing Using Matrix Visualizations

- Direct Touch interaction for edge editing

Insert/Delete single edge:  long press cell
Insert/Delete multiple edges:  long press cell → drag

Graph Editing Using Both: Node-Link- & Matrix Visualizations

• Combine strength of both visualizations by using interlinked views
• Editing of nodes in node-link view (traditional techniques)
• Editing of edges in matrix view (novel techniques)
• Automatic matrix-reordering upon selection in node-link view