**Joint Cost Allocation**

Those costs that are incurred in producing joint products up to the split-off point.

**Allocation Issues**
- How much “responsibility” (of overhead costs) should be allocated to the different products?
- The costs up to the split-off point are considered fixed but HOW should they be divided and allocated?

**Approach to Allocating**
- Typically allocated based on economic benefit (sales) of each product
- Ultimately, this isn’t really important as all costs flow to the bottom line eventually
  - I.e. Financial accounting doesn’t care about this
  - However, internally this is important for decision-making
- Why?

**Relative Sales Value Method**
- Allocating the joint costs in proportion to the total sales value of the end products **at the split-off point**
- Therefore no other costs are considered

**Example: $3,000 in Joint Costs**

<table>
<thead>
<tr>
<th>Joint Products</th>
<th>(1) Sales Value</th>
<th>(2) Costs Beyond Split-Off</th>
<th>(1) – (2)</th>
<th>Pro rated to total</th>
<th>Joint Costs Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2,000</td>
<td>600</td>
<td>N/A</td>
<td>2,000 / 8,000</td>
<td>750</td>
</tr>
<tr>
<td>B</td>
<td>6,000</td>
<td>1,500</td>
<td>N/A</td>
<td>6,000 / 8,000</td>
<td>2,258</td>
</tr>
</tbody>
</table>
**Net Realizable Value Method**

Allocating the joint costs in proportion to the net realizable value of the end products and subtract
The costs beyond the split-off to get them go a point of potential sale

* The costs beyond split-off are assumed to be required in order to receive the sale

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**Weight (Physical Units) Method**

* Joint Costs are divided in proportion to the a physical characteristic (like weight) of the joint material in the several end products

What is the underlying assumption of this method?

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**By-Product Costing**

* Situation where the goal of management is to make as much of Product A as possible.
* However, some quantity of Product B emerges.
  * E.g sawdust at a lumber plant, waste animal tissue, sent for rendering, etc.
* A by-product is usually costed at a zero profit
  * Joint costs are assigned to bring profit to zero

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**Example: $3,000 in Joint Costs**

<table>
<thead>
<tr>
<th>Joint Products</th>
<th>(1) Sales Value</th>
<th>(2) Costs Beyond Split-Off</th>
<th>Pro rated to total</th>
<th>Joint Costs Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2,000</td>
<td>600</td>
<td>1,400</td>
<td>5,900</td>
</tr>
<tr>
<td>B</td>
<td>6,000</td>
<td>1,500</td>
<td>4,500</td>
<td>5,900</td>
</tr>
</tbody>
</table>

**Example: $3,000 in Joint Costs**

<table>
<thead>
<tr>
<th>Joint Products</th>
<th>Sales Value</th>
<th>Weight</th>
<th>Pro rated to total</th>
<th>Joint Costs Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2,000</td>
<td>600 kg</td>
<td>1,600</td>
<td>1,125</td>
</tr>
<tr>
<td>B</td>
<td>6,000</td>
<td>1000 kg</td>
<td>1,600</td>
<td>1,875</td>
</tr>
</tbody>
</table>

**$3,000 in Joint Costs and Product B is the Main Product**

<table>
<thead>
<tr>
<th>Joint Products</th>
<th>(1) Sales Value</th>
<th>(2) Costs Beyond Split-Off</th>
<th>(1) – (2)</th>
<th>Joint Costs Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2,000</td>
<td>600</td>
<td>1,400</td>
<td>1,400</td>
</tr>
<tr>
<td>B</td>
<td>6,000</td>
<td>1,500</td>
<td>4,500</td>
<td>1,600</td>
</tr>
</tbody>
</table>
**Sell or Process Further Issues**

- Using Joint Costs can be useful for “sell or process further” analysis
- Differential analysis is needed

**Example – Two Chemicals**

- Product X – 1,000,000 L @ $0.09/L (hazardous)
- Product Y – 500,000 L @ $0.06/L (safe)
- Joints costs of $150,000
- Product X could be processed further into a safe material:
  - Additional Cost – $80,000
  - New revenue of $0.18/L
- What is the allocation and what should we do?
- (and should we process X further?)