



Division of Finance and
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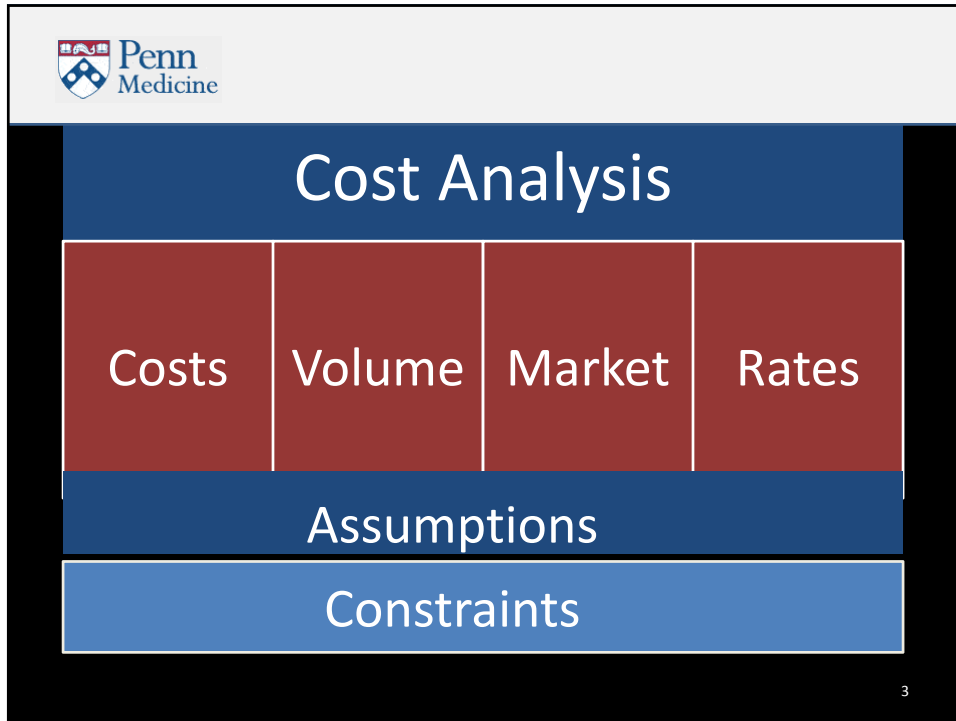
Service Center Training

Cost Analysis Overview

Cost Analysis Overview

- **Cost Analysis Definition**
 - Identification of current and anticipated costs associated with operating a Service Center with an examination of the impact of those costs on setting Service Center rates with the anticipation to break-even (i.e. Revenue = Expenses) at the end of each fiscal year.





Cost Analysis Overview

- Elements of a Cost Analysis
 - Costs
 - Volume
 - Market
 - Rates
 - Assumptions
 - Constraints
- Applying these Elements to perform a Cost Analysis of your Service Center



Cost Analysis Overview

Costs



Cost Analysis Overview

- Typical Service Center Costs
 - Personnel—salary and wages times percent effort
 - Employee Benefits—rates for each employee type
 - Equipment—lease payments or depreciation
 - Maintenance Contracts—annual amount
 - Supplies—forecast by object code
 - Raw materials—estimated by historical volume
 - Travel/Professional Training—estimate by FTE
 - Telecommunications/Software—annual amounts
 - Misc/Other—description and annual amounts



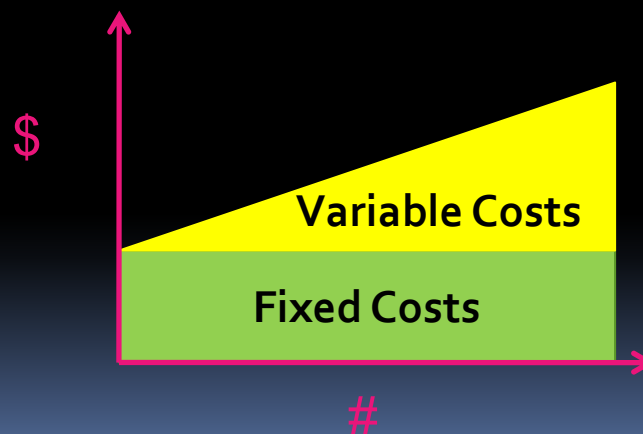
Cost Analysis Overview

- Total Costs, comprised of:
 - Fixed Costs—not contingent on service center volume ; obligations predictable with high degree of certainty.
 - Variable Costs—change in proportion to volume or activity in the service center; obligations can only be estimated based on analysis of historical and prospective service center volume or activity.



Cost Analysis Overview

- Total Costs Illustrated:



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Cost Analysis Overview

- Typical Fixed Costs
 - Salaries (Exempt, monthly-paid staff)
 - Employee Benefits
 - Equipment Maintenance Contracts
 - Equipment Lease Payments
 - Equipment Depreciation
 - Telecommunications/Penn Net Charges



Cost Analysis Overview

- Typical Variable Costs
 - Hourly Wages (Non-exempt, weekly-paid staff)
 - Employee Benefits
 - Outside Services (e.g. sub-contractors, HUP personnel, and one-time service contracts)



Cost Analysis Overview

- **Typical Variable Costs** *(continued)*
 - **Supplies**
 - Raw materials used in producing service center goods for sale
 - Inventory to re-sell (e.g. gases, chemicals, or animals)
 - Direct lab supplies consumed in providing services (e.g. reagents, media, and pipettes)
 - Indirect supplies (e.g. administrative supplies, database software, media and/or document storage)



Cost Analysis Overview

- **Costs**
 - **Issue for a New Service Center**
 - Fixed costs should be estimated by knowledge of what resources (staff, equipment, etc) will be needed to run the service center.
 - Variable costs should be estimated based on volume estimates.



Cost Analysis Overview

- **Costs**
 - **Issues for Existing Service Centers**
 - Use historical information as starting point for cost analysis
 - Variance analysis between Last Fiscal Year Budget vs. Last Fiscal Year Actual financial performance
 - Re-visit assumptions made last year and compare them to the actual outcomes
 - Look for trends in financial data (e.g. calculate supply cost as a percentage of revenue, or utilization of staff if using a billable hours model)



Cost Analysis Overview

Volume



Cost Analysis Overview

- Volume
 - Estimate Internal Users:
 - List by PI, funding source, and likely volume in units and/or dollars (if available)
 - Review users by grant activity



Cost Analysis Overview

- Volume
 - Estimate External Users:
 - Types of users (universities, hospitals, independent research organizations, pharmaceutical companies, non-profit, biotechnology firms, and so on)
 - Sources of funding (if available) and likely volume in units and/or dollars (if available)



Cost Analysis Overview

- Volume
 - For existing Service Centers, has volume increased or decreased significantly; if so, why?
 - Examples: PI transfer, New PI, Competing Service Center



Cost Analysis Overview

- Volume
 - For new Service Centers, what types of information can you rely on to make volume demand estimates?
 - Examples: Existing PIs who already collaborate with the scientific director, potential users in your department, new collaborations with external users



Cost Analysis Overview

Market



Cost Analysis Overview

- **Market**
 - Information to consider:
 - Is this a unique service with no basis for cost?
 - Is this a homogeneous service offered by competing firms; if so what do competitors charge?
 - Do internal users have funding sources to pay for the services? If not, are you aware the SOM cannot discriminate against federal awards or provide discounts or free services to any users



Cost Analysis Overview

- **Market** (continued)
 - Information to consider:
 - Is the service provided by your service center considered cutting-edge technology or could possibly be obsolete fairly soon?
 - Sources of revenue and subsidies (if available) and
 - Anticipated volume in units and/or dollars – compare with your Volume analysis



Cost Analysis Overview

Rates



Cost Analysis Overview

■ Rates

- Existing Service Centers
 - Remember the goal is to break-even at the end of the fiscal year
 - Review rates in terms of costs, volume, and market considerations.
 - Determine whether rates be increased or decreased
 - Incorporate any deficit or a surplus from the prior fiscal year
 - Provide updated rate schedule based on your final cost analysis



Cost Analysis Overview

■ Rates *(continued)*

- New Service Centers—research information about rate from competing Service Centers at other institutions, perform cost analysis
- Review rates in terms of costs, volume, and market.



Cost Analysis Overview

- **Rates** *(continued)*
 - **Perform Break-even cost analysis**
 - Sum of Rates multiplied times Volume for each service should equal the total cost of operating the service center
 - For example, \$200,000 in total service center costs divided by 5,000 units will yield a rate of \$40 per measurable unit (hour, job, item, etc.)



Cost Analysis Overview

- **Rates** *(continued)*
 - **Additional Items to Consider:**
 - Multiple services or items require more complex calculation to allocate costs
 - OMB Circular A-21 requires the service center as a whole to break-even
 - With reliable cost, volume and market estimates, rates should not change during the year unless significant variances appear likely (i.e. surplus or deficit >5%)



Cost Analysis Overview

- **Rates** *(continued)*
 - **Additional Items to Consider:**
 - Consider charging external users a higher rate that includes indirect cost recovery (i.e. approved rate plus F&A rate for external user rate)
 - Never discriminate against federal awards by charging lower rates to users charging non-federal funding sources
 - Never provide free service to any users
 - Work with the scientific director and technical staff to consider all billable milestones



Cost Analysis Overview

Resulting Revenue



Cost Analysis Overview

- Revenue
 - Forecast Revenue
 - Multiply (Anticipated Volume) times (Rate)
 - Compare to historical Revenue figures
 - Look for trends (upward, downward, or flat) to decipher solvency of the service center
 - Determine volume of external users and indirect cost recovery from external users



Cost Analysis Overview

Assumptions



Cost Analysis Overview

- Assumptions
 - Keep in mind the assumptions used to create the initial costing model and rate schedule
 - Analyze variance between the original model and the actual performance



Cost Analysis Overview

- Assumptions (continued)
 - Analyze what happened?
 - Were all items of cost considered?
 - Were the rates appropriate with the cost of performing the service?
 - Was the volume of expected users higher or lower than projected and why?
 - Was the market not receptive to your service or over-receptive, possibly meaning the rates could be too low?
 - Were there any other significant events affecting the operation of the service center?



Cost Analysis Overview

Constraints



Cost Analysis Overview

- **Constraints**
 - Consider limitations when developing your rate schedule and your cost analysis
 - Is the expected output feasible considering the level of resources dedicated to the service center?
 - Was the demand appropriately estimated or is the market saturated with your service?



Cost Analysis Overview

- Constraints
 - Consider limitations when developing your rate schedule and your cost analysis *(continued)*
 - Was the original service center proposal too optimistic and if so, can it sustain operations with lower volume?
 - Are there other factors limiting achieving optimal service center operations in order to break-even?



Cost Analysis

Costs

Volume

Market

Rates

Assumptions

Constraints

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