Using Partial Budgets to Propose Change

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Partial Budgets

- Primary tool for looking at operational changes within a business
- Only looking at those items impacted by the change.

Proposing Change

- Many changes can be made
- Which ones will work?
- Which do you do first?
- How do you propose change?

Partial Budgets

- All items not effected are assumed to stay the same.
- Only use when looking at a change that impacts few areas of the business.
- Have to compare to something - usually status quo.
- Can use for sensitivity analysis

A Process

- Prepare/answer the following
  - How will the change work
  - Budgets
  - People impacted
  - Areas of the business impacted
  - Timeline
  - Things Needed
  - Control

Step 1 – What is Impacted/How Will it Work

- What is the change?
- What will be impacted
  - Income, plus or minus
  - Expenses, plus or minus
- Write down all assumptions
- Basis for budget

Status Quo

- What is currently being done?
- If no longer going to be doing something, what changes?
  - What is the income not earned?
  - What expenses no longer paid?
- No only new things associated with change, but old things no longer done.

Profitability Partial Budget

- Depreciation Expense
  (Purchase cost + Installation cost – salvage value) divided by useful life
- Manure spreader
  - $50,000 cost
  - 10 year life
  - 10% salvage value
- What is the depreciation expense?

$4,500

Prepare Partial Budgets Step 2

- Two principal types
  - Cash
  - Profitability
- Which one should you work on first?

Profitability Partial Budget

- Opportunity cost
  (Initial investment + salvage value) ÷ 2 X opportunity cost %
- Manure spreader
  - Opportunity cost = 5%
- What is the annual opportunity cost?

$1,375

Profitability Partial Budget

- Question: Does this investment make money?
- Key considerations
  - Economic life of the investment
  - Depreciation expense
  - Opportunity cost of investment
- Change in both cash and non-cash income and expenses

Calculations

- Depreciation
  (Investment – salvage value) ÷ useful life
  Salvage value = 50,000 X .10 = 5,000
  Depreciation expenses = 50,000 – 5,000 = 45,000 ÷ 10 = 4,500 per year
- Opportunity Cost
  (Investment + salvage value) ÷ 2 x opportunity % rate
  (50,000 + 45,000) ÷ 2 = 27,500 X .05 = 1,375

Profitability Partial Budget

Items That Add to Net Income:	Items That Reduce Net Income:
Added Receipts	Reduced Receipts
Reduced Expenses	**Added Expenses**
Total (A) $_____	**Total (B) $_____**

Change in Net Income (A-B) $_____

Cash Flow Partial Budget

- Principal and interest expense for the loan key numbers if investing capital
- Replaces depreciation expense and opportunity cost in the profitability budget.

Profitability Partial Budget

- Always the first one to consider
- Can't forget the DIRTI 5 if involves capital expense
- What changes in inventories may there be?
- If not capital investment or changes in non-cash items, than profit budget = cash budget

Cash Flow Partial Budget

- Even if self financing, can still use a loan payment to see if make sense
  - Will the cash savings be rebuilt?
- Many places to determine these figures

Cash Flow Partial Budget

- Only includes cash inflows and outflows
- What cash is generated?
- What new cash expenses are there?
- What expenses are saved?
- What is the interest expense and principal payment required if financed?
- How will the change be paid for?

Cash Flow Partial Budget

Items That Add to Cash Flow:	Items That Reduce Cash Flow:
Added Inflows	Reduced Inflows
Reduced Outflows	**Added Outflows**
Total (A) $_____	**Total (B) $_____**

Change in Cash Flow (A-B) $_____

Partial Budgets

- Hard Numbers
  - High degree of certainty will occur
  - Highly accurate estimate of dollar change
- Generally added costs only hard number
- If no longer using an input, a hard savings.

Excel Spreadsheet

- Can use spreadsheets to do calculations
- What type of budget are we doing?
- Do profit first, cash second

Template

Partial Budgets

- Soft Numbers
  - May or may not occur
  - Hard to accurate estimate dollar value of change
- Increase in milk production or increase in breeding efficiency are examples of soft numbers.
- Generally income is always soft

Further Analysis

- Simple partial budget looking at first year annual costs
- What if things change over time?
- More complicated analysis
- Many different spreadsheets available on the web to help perform analysis

Limitations of Partial Budgets

- If positive results - does it occur from hard numbers or soft numbers?
- Just looking at one area of the business - doesn't answer the question, is this the best use of limited resources?
- Not additive
- Sensitivity analysis
- Projecting the future!

Further Analysis

- What is the net present value of the change?
- What is the tax implications of the change?

Summary

- Partial budgets key decision tool
- Hard vs soft numbers
- In our head vs on paper
- Done quickly vs over time

Resources

- Center for Dairy Profitability, University of Wisconsin http://cdp.wisc.edu/
- University of Wisconsin Forage Extension Resources http://fyi.uwex.edu/forage/

Questions?

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Example Budget

Resources

- Pro-Dairy Website Resources http://ansci.cornell.edu/prodairy/resources
- Penn State Publication
  - *pubs.cas.psu.edu/freepubs/pdfs/ua366.pdf*

Build New Driveway

- Decrease time for trucks hauling manure and forages.
- Save 5 minutes per load
- 1,195 hours of truck driving labor
- Labor costs average $15 per hour
- Number of loads
  - Corn Silage = 900
  - Haylage = 700
  - Manure = 450

Build New Driveway

- 1 truck used 10 hours less as not needed to keep up with harvester during corn
- Cost of Driveway
  - $30,000 initial investment
  - 20 year useful life
  - 30% salvage value
  - $500 annual maintenance
  - 5% opportunity cost

Added Income

- None

Build New Driveway

- Decrease time for trucks hauling manure and forages.
- Save 5 minutes per load
- 1,195 hours of truck driving labor
- Labor costs average $15 per hour
- Number of loads
  - Corn Silage = 900
  - Haylage = 700
  - Manure = 450

Reduced Expenses

Labor Savings

5 min X 2050 loads = 10,250 minutes

10,250 minutes/60 = 170.8 hours

170.8 hours x 15 = $2,562 per year

Idle Truck

10 hours, ownership costs of $30 per hour, 10 X 30 = $300

Total Reduced Expenses = 2,862

Build New Driveway

- 1 truck used 10 hours less as not needed to keep up with harvester during corn
- Cost of Driveway
  - $30,000 initial investment
  - 20 year useful life
  - 30% salvage value
  - $500 annual maintenance
  - 5% opportunity cost

Reduced Income

- None

Added Expenses

- Depreciation
  - $30,000 (investment) - $9,000 (30% salvage) = $21,000 / 20 years = $1,050 annual depreciation
- Opportunity Cost
  - $30,000 (investment) + $9,000 (salvage) = $39,000 / 2 = $19,500 x 5% = $975
- Added Maintenance = $500
- TOTAL = $2,525

Added Inflows

- None

Profit Partial Budget

Total of Added Income + Reduced Expenses	Total of Reduced Income + Added Expenses
• $0 Added Income • $2,862 Reduced Expenses	• $0 Reduced Income • $2,525 Added Expenses
• Total = $2,862 – (A)	• Total = $2,525 – (B)

(A) – (B) = $337

Reduced Outflows

Labor Savings

5 min X 2050 loads = 10,250 minutes

10,250 minutes/60 = 170.8 hours

170.8 hours x 15 = $2,562 per year

Idle Truck

10 hours, ownership costs of $30 per hour, 10 X 30 = $300

Total Reduced Outflows = 2,862

Build New Driveway

- Investment = $30,000
- 5 year loan
- 5% interest rate
- Annual Payment
- $6,929 per year

Reduced Inflows

- None

Added Outflows

- Principal and Interest Payments
  - $6,929
- Added Maintenance = $500
- Total Added Outflows = $7,429 per year, first 5 years, $500 after first five years.

Cash Partial Budget

Total of Added Inflows + Reduced Outflows	Total of Reduced Inflows + Added Outflows
• $0 Added Inflows • $2,862 Reduced Outflows	• $0 Reduced Inflows • $7,429 Added Outflows
• Total = $2,862 – (A)	• Total = $7,429 – (B)

(A) – (B) = -$4,567