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CBA RAPID OVERVIEW

A whole process in an hour

LEARNING OBJECTIVES FOR THIS OVERVIEW

- Define
 - Cost Benefit Analysis (CBA)
 - When a CBA is required
 - Rough Structure of a CBA
 - Interrelationship of Key Components
- Review snippets of CBAs and discuss weaknesses and suggest improvements

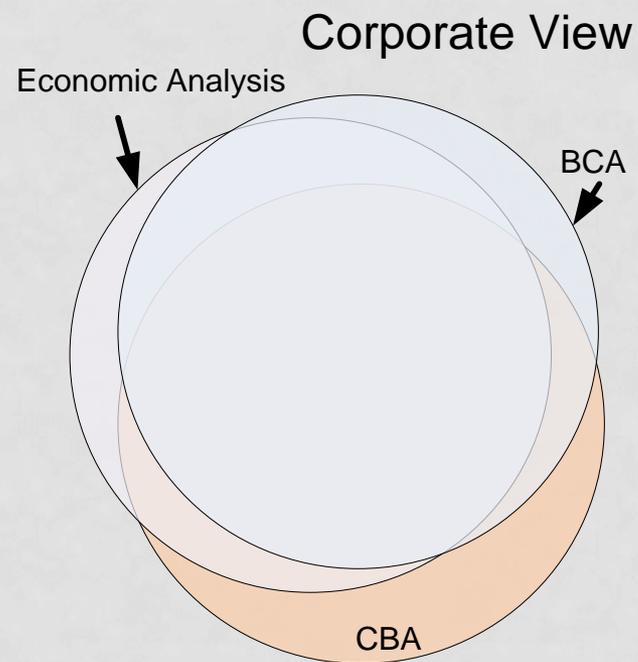
COMPANION CLASSES TO THIS OVERVIEW

- **Practical Cost Benefit Analysis (TTB011)**
 - Target Audience: Those tasked with writing a CBA
 - 3.5 day class and workshop
 - Walk through the entire CBA process in Detail
 - Culminates in writing and presenting an acquisition CBA
- **Executive Cost Benefit Analysis (TTB012)**
 - Target Audience: Those tasked with reviewing CBA submissions
 - 1.0 day class
 - Instructions on what to look for – both good and bad
 - Review of actual CBAs
- **Fundamental Cost Benefit Analysis (new)**
 - Target Audience: Those tasked with supporting the writing of a CBA
 - 1 day class
 - Quick introduction to the pieces of a CBA
 - Culminates in completing a services CBA

For details: see instructor or <http://icatalog.dau.mil/>

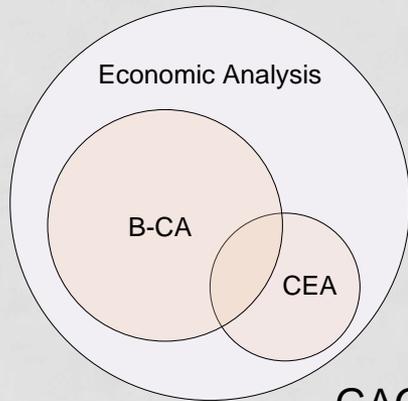
TERMS

- In Industry and Academia
 - Business Case Analysis (BCA) ≈**
 - Cost-Benefit Analysis (CBA) ≈**
 - Benefit/Cost Analysis (B-CA) ≈**
 - Cost Effectiveness Analysis (CEA) ≈**
 - Analysis of Alternatives (AoA) ≈**
 - Cost Utility Analysis (CUA) ≈**
 - Economic Analysis (EA) ≈**
 - The Business Case**
- Can include a wide range of definitions and styles

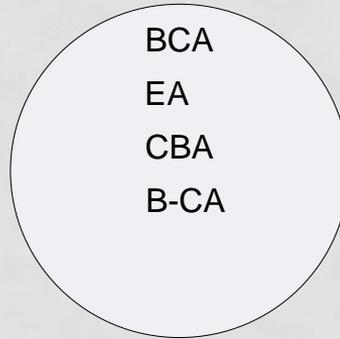


TERMS WITHIN GOVERNMENT

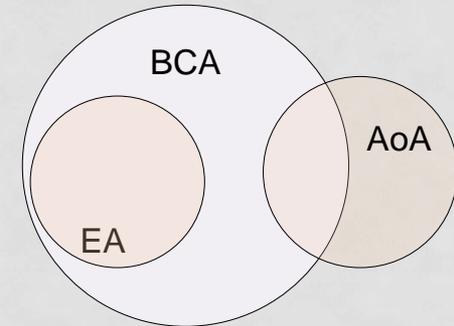
OMB View



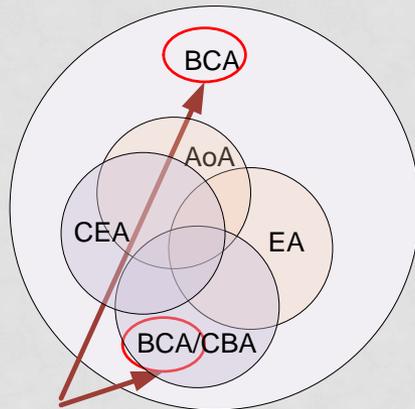
DoD View for PBL



Congress View for MAIS

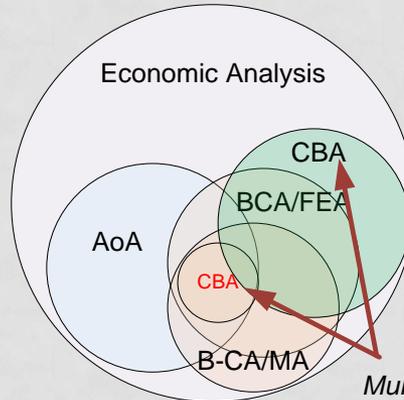


GAO View



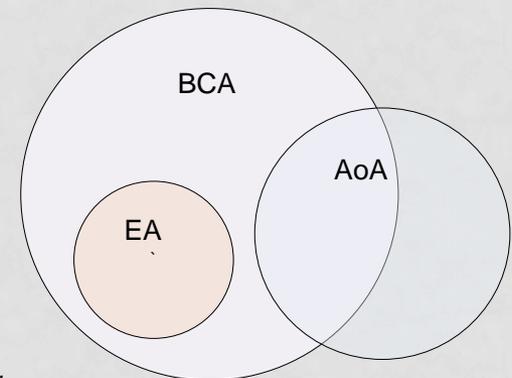
Multiple definitions

Army View



Multiple definitions

Air Force View



Many conflicting "specified" terms

TERMS

- Standardized usage of terms does not exist
 - Services with refined definitions have to pay attention when communicating with other services
- Intent of our courses
 - To discuss ANY kind of business decision process
 - Focus is on the process and not on specific required formats

“CBA” will be used in this session

WHAT IS A COST BENEFIT ANALYSIS?

- In light of the various definitions, in this course:
 - A decision-support tool or framework to systematically identify, analyze, and compare benefits & costs of alternative courses of action
 - A communication tool that answers the questions:
 - What are the financial and non-financial consequences if a proposed action or decision is implemented?
 - What are the proposed investment's scope and objectives, as well as a basis for measuring future performance?
 - Which attributes of the project contribute most to the business objectives?

A CBA is a decision support tool

WHEN IS A CBA REQUIRED?

- All Acquisition Programs require AoA, BC, EA, or COA
 - Statutory for MDAP, MAIS programs & ACAT II (Info Sys)
 - Regulatory for all other “marked type” programs
 - Updated at Milestone B & C as necessary

Interim DODI 5000.02 (Nov 25, 2013), Encl 9 & Table 9 Encl 1
- Performance-based logistics (PBL) implementation strategy
 - Army - **AR 70-1 & DA memo, 18 Aug 05**
 - Navy - **PBL BCA Guide, 1 Nov 2005**
 - DoD – **USD (AT&L) Memo, “Performance Based Logistics (PBL) and Business Case Analysis (BCA)”, 23 Jan 2004**
 - DoD - **Product Support Business Case Guidebook, Apr 2011**
- All unfunded and reprogram requests
 - Army - **DA Memo, “Cost-Benefit Analysis to Support Army Enterprise Decision Making”, 30 Dec 09**
- IT Evaluations
 - Navy – **Standard Business Case Analysis Template , 15 July 2011**

CBA's are due prior to making important long-term decisions

GOV'T CBA VS CORPORATE CBA

Government CBA

- Size
 - Can be very large
 - Can impact decades
- Not exclusively dollar driven
 - Projects are done for political and societal reasons, e.g.:
 - War is always a money losing proposition
 - "General welfare" often undefined or spread thin
- Intangibles
 - Can be the main reason for the project
 - Often must be considered and balanced
 - E.g., Soldier safety can be risked but can't be the only criteria

Corporate CBA

- Size
 - Rarely more than a small fraction of the net worth of the company
 - Impact horizon usually less than a year
- Driven by hard dollars
 - Soft dollars can influence "ties"
- Intangibles
 - Used as screening criteria
 - E.g., Safety – not usually acceptable to risk employee health
 - Devalued or ignored
 - E.g., Employee morale is a nice-to-have

QUICK NOTE ON ACQUISITION TERMS

Life Cycle Cost Estimate (LCCE)

- Cradle to grave regardless of when calculated

- Includes sunk costs
- **All** costs borne by **DoD**

- Part of budget process
- Costs by appropriation

CBA cost estimates

Breadth of Estimate

- Snapshot profile, tailored to the question

Depth of Estimate

- Rarely includes sunk costs
- Doesn't have to include costs common to all alternatives
- **Decisive** costs borne by **Federal Gov't**
 - Required special costs
 - Fuel – DODI 5000.02 Encl 7
 - Personnel – DoDI 7041.04 Jul 2013

Purpose

- Might not be part of budget process

Ground Rules

- Added assumptions for comparison purposes

CBA numbers rarely match LCCE numbers

KEY CONCEPTS WHEN REVIEWING

- Leadership needs to be involved in the creation process
 - Approve at least the Problem Statement & COAs before detailed analysis begins
- Realize that a CBA
 - Must be tailored to fit the problem
 - There are many templates, none work “best” all the time
 - Will not produce a result that is more valid than the input data
 - Will not make a final decision; that will be the responsibility of the decision maker/leadership
 - Will not act as a substitute for sound judgment, management, or control
- CBAs are decision support documents
 - They are subject to **audit**
 - Must be accurate
 - Documented to the extent needed to justify the decision

Decision makers are still in charge

4 KEY PARTS TO ANY CBA

- Problem Statement
 - If you start on the wrong foot, you can't go forward
 - If you don't know where you are going, you can't get there
- Status Quo
 - Always exists; can be new start or infeasible
 - Is usually the source of "pain"
 - If you don't know where you are, you can't leave
 - All comparisons are made against the Status Quo
- Criteria
 - Screening Criteria – enforce minimum requirements
 - Selection Criteria – evaluative standards
- Analysis

ANALYSIS

- Heuristic Comparison
 - Using words to just describe the advantages and disadvantages
- Single number evaluations
 - Usually don't work in government analysis
- Free format comparison
 - Often a table of numbers with logic drawn from the numbers directly
- Decision Matrix
 - Rank Order – Allowed, but dangerous
 - Weighted – Better, but also dangerous
- Graphical
 - An advanced presentation of data; useful for very complex decisions

No one correct Way

EVEN STARTING A PROBLEM STATEMENT ...

Notice the Difference in Focus

- The objective of the analysis ... Poor: Focus is on the documentation & not on the product
- The objective of this program ...
- Buy software to... Poor: Focus is on a potential solution
- Provide a capability that...
- Refurbish a building ... Poor: Focus is on a potential solution
- Provide billeting for ## unaccompanied ...

ANALYZE A PROBLEM STATEMENT

- Analyze this Problem statement from an actual CBA

1 CBA to rule them all

All of them?

Problem Statement: Current Army Military Intelligence (MI) Force structure is not optimized to provide core capabilities in support of Brigade Combat Teams and Division/Corps full-spectrum operations on a sustained Army Force Generation (ARFORGEN) cycle.

Peacekeeping to Global Conflict?

STATUS QUO IS MISSING

- What would an acceptable statement be for a program with the following COAs?
 - COA1: HQS ARFORCYBER (~106 PN) in Nolan Building (NB)
 - Displaces ~150 INSCOM PN Requiring SCIF Space
 - Locations: Fort Belvoir & TBD Location for INSCOM
 - COA 2A: HQS ARFORCYBER CG & Key Staff (<15) in NB
 - Bed Down in NB with ACOIC
 - Remaining ARFORCYBER Staff (~90 PN) in Bldg 8543
 - Locations: Forts Belvoir & Meade (Bldg 8543)
 - COA 2B: HQS ARFORCYBER CG & Key Staff (<15) in NB
 - Bed Down in NB with ACOIC
 - Remaining ARFOFCYBER Staff (~90 PN) in Leased or BRAC Space
 - Locations: Fort Belvoir & Surrounding 5-Mile Environs
 - COA 3: HQS ARFORCYBER (~106 PN) in Bldg 8543
 - ACOIC Remains in NB
 - Location: Fort Meade

PRACTICE: WHAT'S WRONG HERE?

Executive Summary

As the Executive Agent, DoDI 5110.11 states that the Army (114th Signal BN) is responsible for providing common IT, IM and telecom operations, management and related support services to Raven Rock Mountain Complex (RRMC).

This request for five additional DA Civilian (DAC) requirements will establish: (1) two requirements for a new work center based on the increased number of Joint supported systems, networks, and IT infrastructure components based on equipment modernization and NMCS Transformation as outlined in ... (2) three requirements for day to day routine and, during national emergencies, lock-down maintenance services in support of 78 communication systems at RRMC.

Problem Statement

Currently 114th Signal Battalion does not have the requirements to support the additional 5 DACs.

Objective

The objective of this effort is to obtain 5 DAC requirements.

Alternatives

Alternative 1 is the Status Quo

Alternative 2 includes an additional 5 fully burdened DAC requirements

BE WARY OF RELIANCE ON A SINGLE METRIC

- Reporting the NPV is required
- The NPV is not sufficient to describe the best solution

Alternative		A	B	C	D	E
Investment Costs in 2010		150	125	125	92	200
		Operating Savings				
2010		0	0	0	0	55
2011		20	20	23	17	30
2012		30	30	35	26	35
2013		30	40	38	28	45
2014		30	45	41	31	50
2015		30	42	44	33	50
2016		55	30	47	35	50
2017		55	30	50	38	40
2018		55	30	54	40	50
NPV	2.20%	\$120	\$114	\$169	\$128	\$167
IRR		16%	20%	24%	25%	23%
Break Even		5.2	3.8	2.8	2.8	2.7
Discounted Benefit/Cost Ratio		1.78	1.89	2.33	2.37	1.81

Best?

Reporting NPV is required, but not sufficient

SUMMARY

- Define Cost Benefit Analysis (CBA)
 - Many definitions. Use as synonyms
- Structure of a CBA
 - Formats are far less important than content
- Key Components
 - Garbage In = Garbage Out
 - CBA/BCA are great tools with sharp edges