

Applying Value Analysis in the Lean Environment

Lean Process Improvement in the Public Sector

steVE Holmes

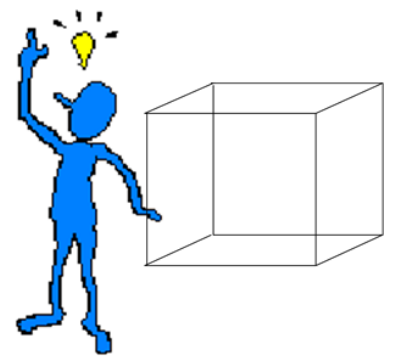


Objectives

- Why Value Analysis
- Introduction to the VA process
- VA and Lean



Why Value Analysis ?



Value Analysis is a structured approach to innovation . Innovation is key to delivering public services.

VA provides a deliberative method to better balance project objectives and performance with costs, leading to quicker decision-making and a reduction of unnecessary expenditure.



Not Just Engineering Projects...

- I & IT Projects
 - Traffic Volume Information System
 - Geographic Information Systems Mapping Services
- Organizational Change, Service Delivery, Business Priorities, Business Process Reengineering, Strategy Maps
 - Fleet Management Centre of Excellence
 - Resource Benefits Sharing with the Aboriginal Relations Branch
 - Snow Removal Equipment Marking and Lighting
 - GHG Reduction Strategies

US Policy



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

December 26, 2013

CIRCULAR NO. A-131 (REVISED)

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Value Engineering

1. **Purpose.** This Circular provides guidance to support the sustained use of value engineering (VE) by Federal Departments and Agencies to reduce program and acquisition costs, improve performance, enhance quality, and foster the use of innovation. Agencies should maintain policies and procedures to ensure VE is considered and integrated, as appropriate, into the planning and development of agency programs, projects, activities, as well as contracts for supplies and services, including performance based, architect-engineering, and construction contracts.

Management of Value Initiative – Nov 2010 – Cabinet Office Efficiency and Reform Group (UK)



“We (must) move ... to taking the decisions necessary to equip Britain for long-term success. That means prioritizing things like better schools ... and infrastructure improvements so that we can build a sustainable economy for the future.”

The Rt. Hon David Cameron, August 2010



Introduction to Value Analysis

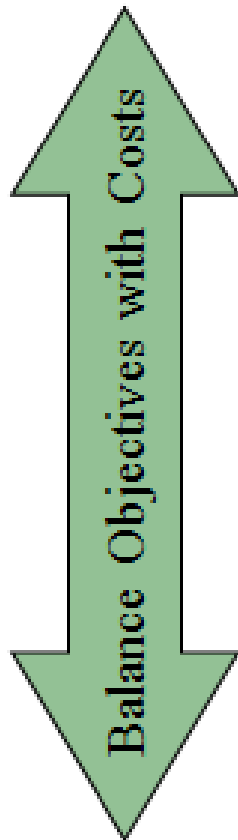
- Facilitated and creative process
- Generates alternative solutions
- Involves people from a variety of backgrounds
- Six phases or steps





How do you Achieve Value?

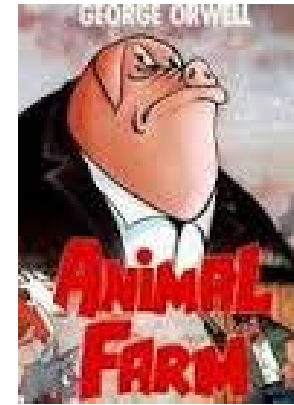
Value can be defined as the ratio between needs (benefits) and resources (expenditure).



VALUE α

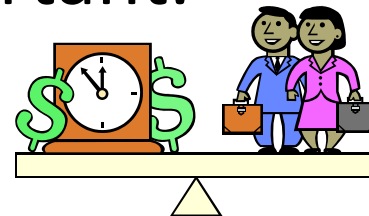
$$\frac{\textit{Needs Satisfied} \\ \textit{(Functions)}}}{\textit{Resources Used} \\ \textit{(\$, people, time, materials, \\ \textit{etc.)}}}$$

The Power of VA



“All animals are equal, but some animals are more equal than others.”
Animal Farm

- All stakeholders advocate for their business needs as a priority, but as George Orwell almost said *“all needs are created equal, but some needs are more equal than others”*.
- A VA workshop can be used to work with stakeholders to reach consensus on those needs that are the most important.

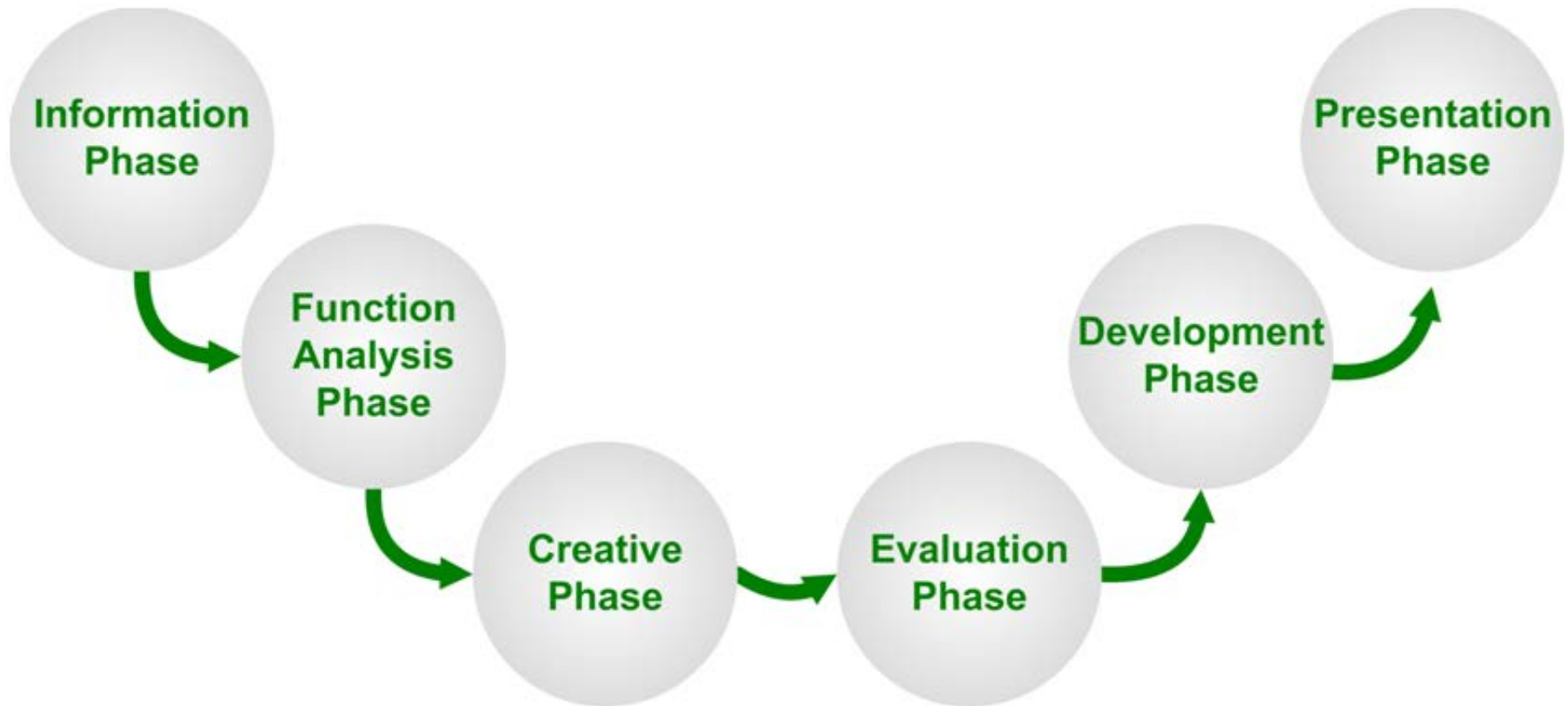




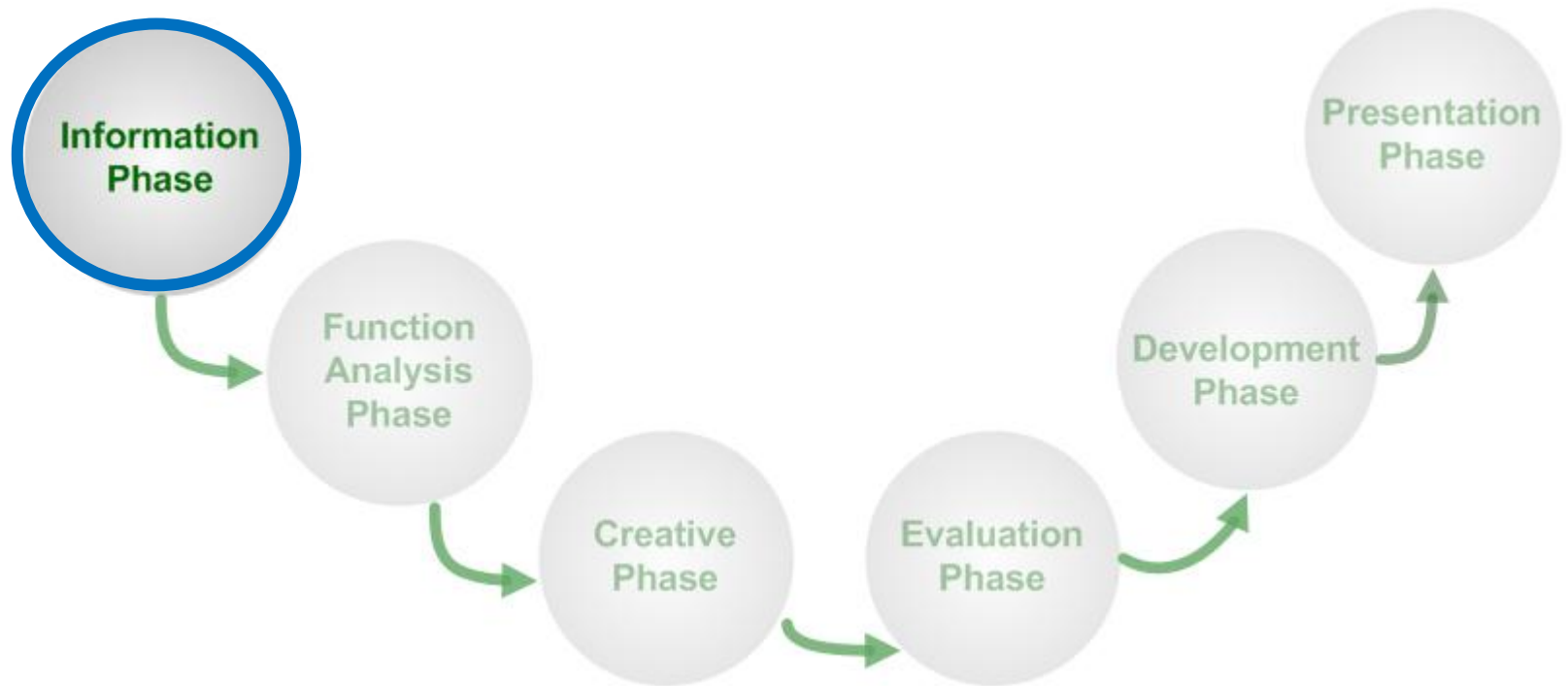
The Value Analysis Team

- Those who own the problem
- Those who are responsible for solutions
- Those who will benefit from the solutions

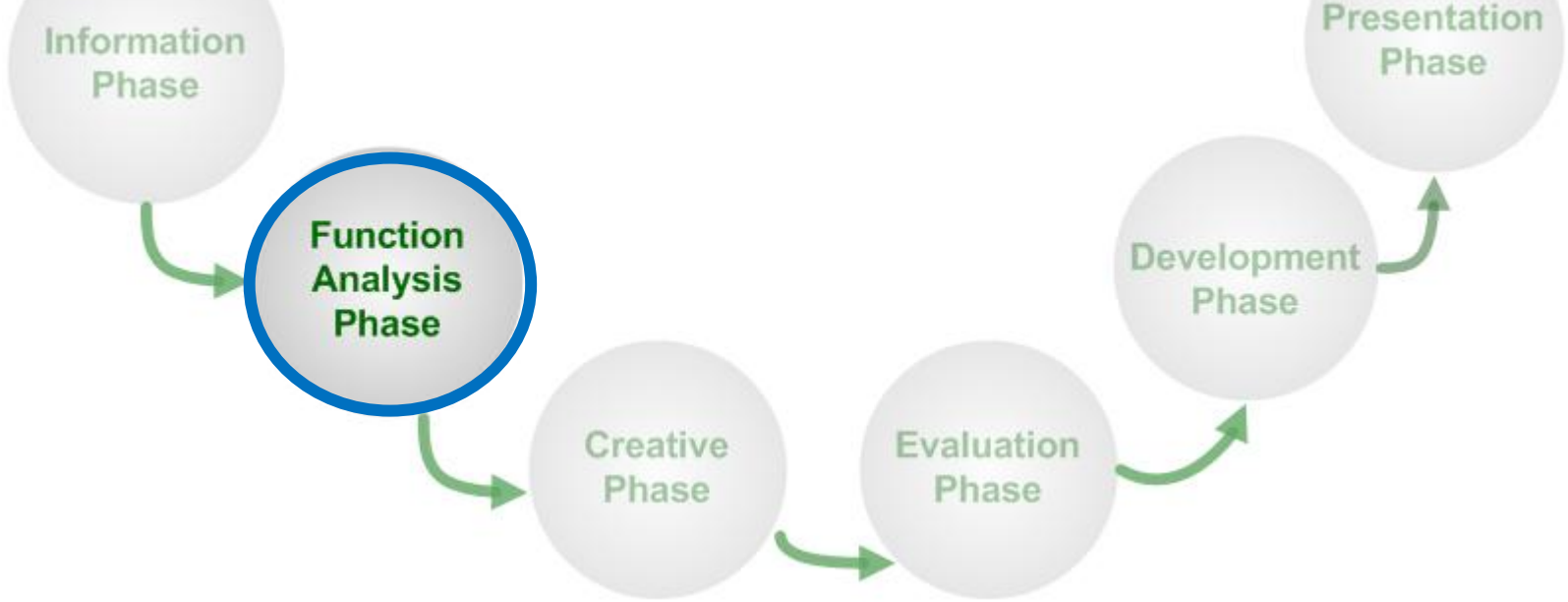
The Value Analysis Workshop



Source: About VA - VA Overview
www.valueanalysis.ca



- Review project information
- Discuss the project
- Ask questions
- Clearly define project objectives
- Establish key constraints



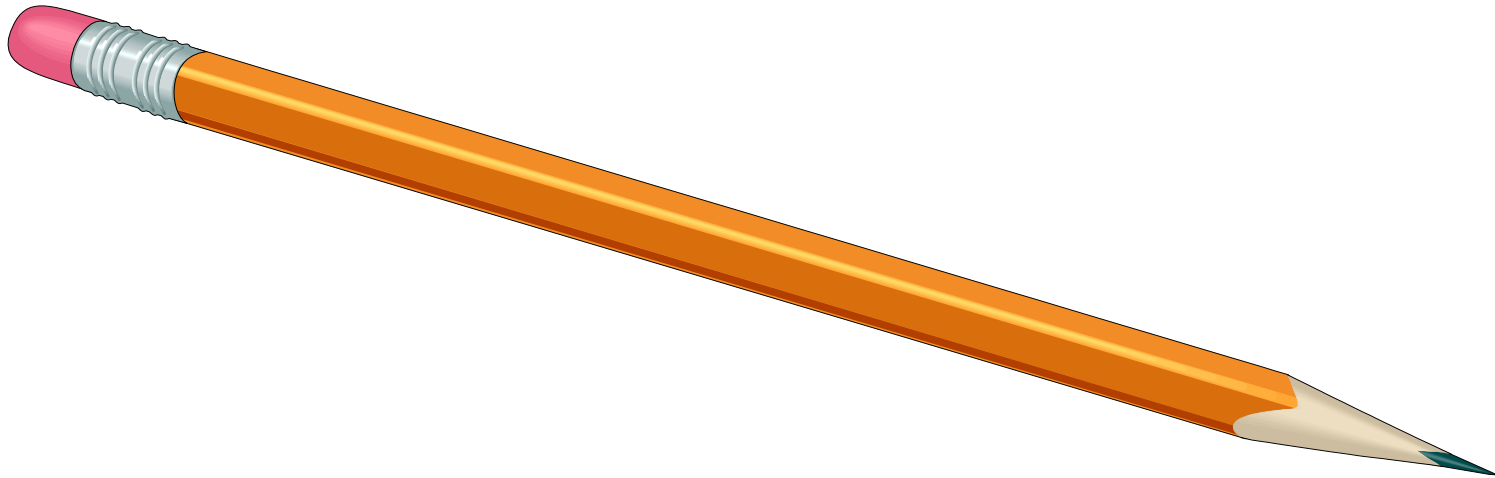
- Key aspect of Value Analysis
- Answers the question “What must it do?”
- Uses Verb-Noun Pairs
- Functions are examined for their inter-relatedness
- Allows a better exploration of alternatives



Pencil Example

What is the function of a pencil?

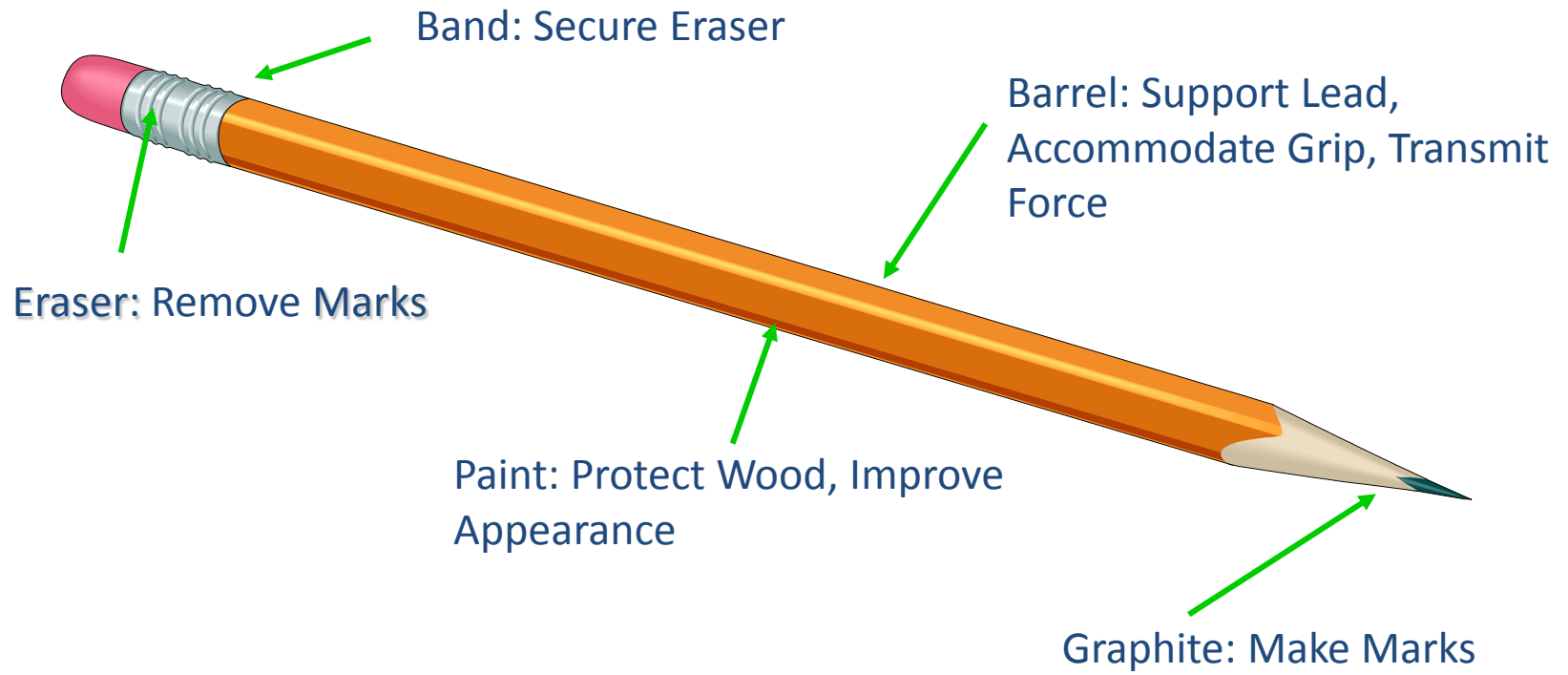
Pencil: Mark Surface





Verb Noun Definitions for a Pencil

Pencil: Mark Surface





Verb - Noun Abridgement

Item	Active Verb	Measurable Noun
Public Meeting	Seek	Input
Traffic Signals	Control Signal	Traffic Movements
Drill Bit	Make Drill	Opening Hole



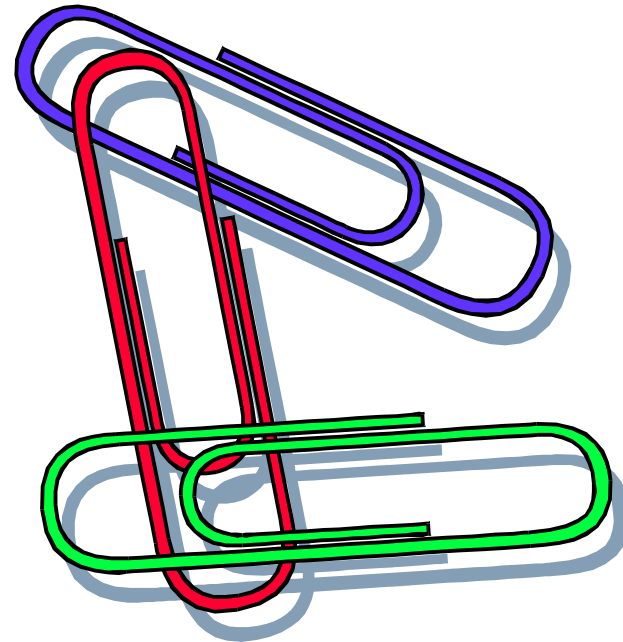
Existing Product, Process	Active Verb	Measurable Noun
Information Note	Guide	Issue
Red Light Camera	Modify	Behaviour
I&IT Ticket #	Identify	Request
Email	Transmit	Message
Timesheet	Record	Activity
Memory Stick	Move	Data
Library	Circulate	Information

Level of Abstraction

What does a paperclip do?

~~Attach Paper~~

Attach Objects





Functions for PROCEDURES

DoD LSS Black Belt

Define Measure **Analyze** Improve Control

VERBS

ALLOCATE	IMPROVE
ANALYZE	INCREASE
AUDIT	INFORM
AUTHORIZE	MAINTAIN
CERTIFY	MEASURE
COMPILE	MONITOR
CONFIRM	OBTAIN
COPY	ORGANIZE
CREATE	PROCURE
DECREASE	PROTECT
DEVELOP	RECEIVE
DISTRIBUTE	RECONCILE
ENTER	RECORD
ESTABLISH	REPORT
EVALUATE	SET
FORECAST	SPECIFY
GENERATE	TEST
GUIDE	TRANSMIT
IDENTIFY	

NOUNS

ALTERNATIVE	MATERIAL
AWARENESS	OPTION
CONCEPT	ORDER
CONTROL	PART
COORDINATION	PERFORMANCE
CREITERIA	PERSONNEL
DATA	PLAN
DECISION	PRIORITY
DESIGN	PROCESS
DEVIATION	RECORD
DIRECTION	REGULATION
DOCUMENT	REQUEST
FACILITY	RESOURCE
FUNDS	SCHEDULE
GOAL	SHIPMENT
HISTORY	SOURCE
INFORMATION	STAFF
INSTRUCTION	STANDARD
INVENTORY	STATUS
LIMIT	TREND



Functional Analysis System Technique (FAST) Diagram

Method of organizing relationships
between functions

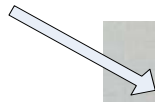
Asks 'how' and 'why' questions about the
functions

Debate fosters understanding and
creativity

Mouse Trap FAST Example



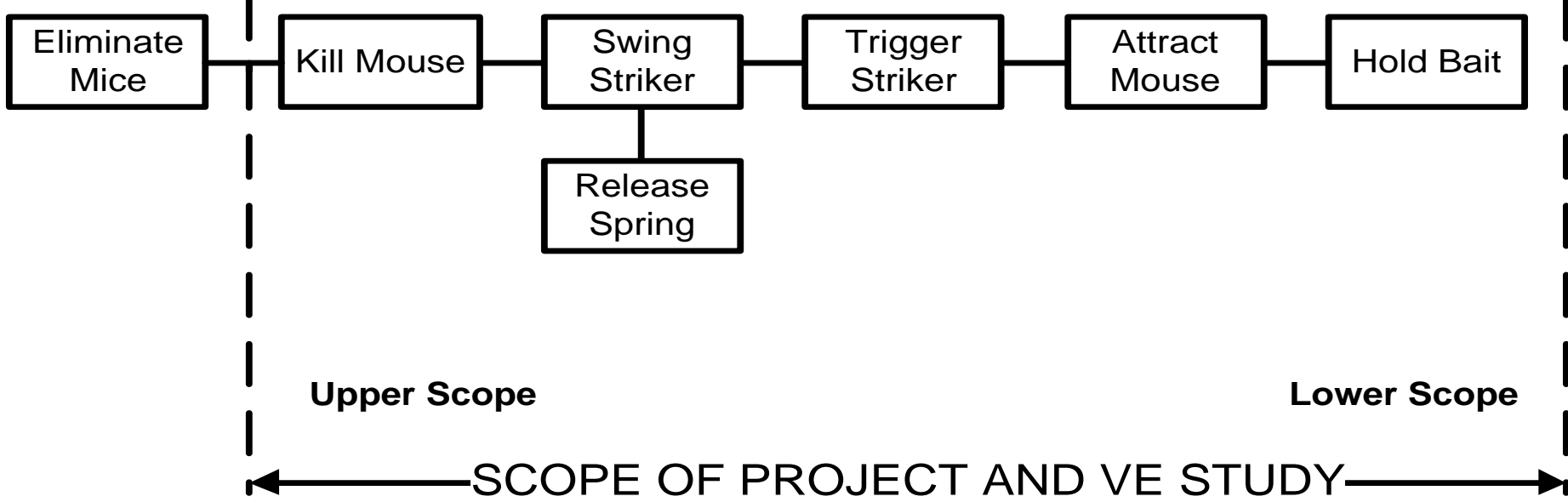
Striker Arm



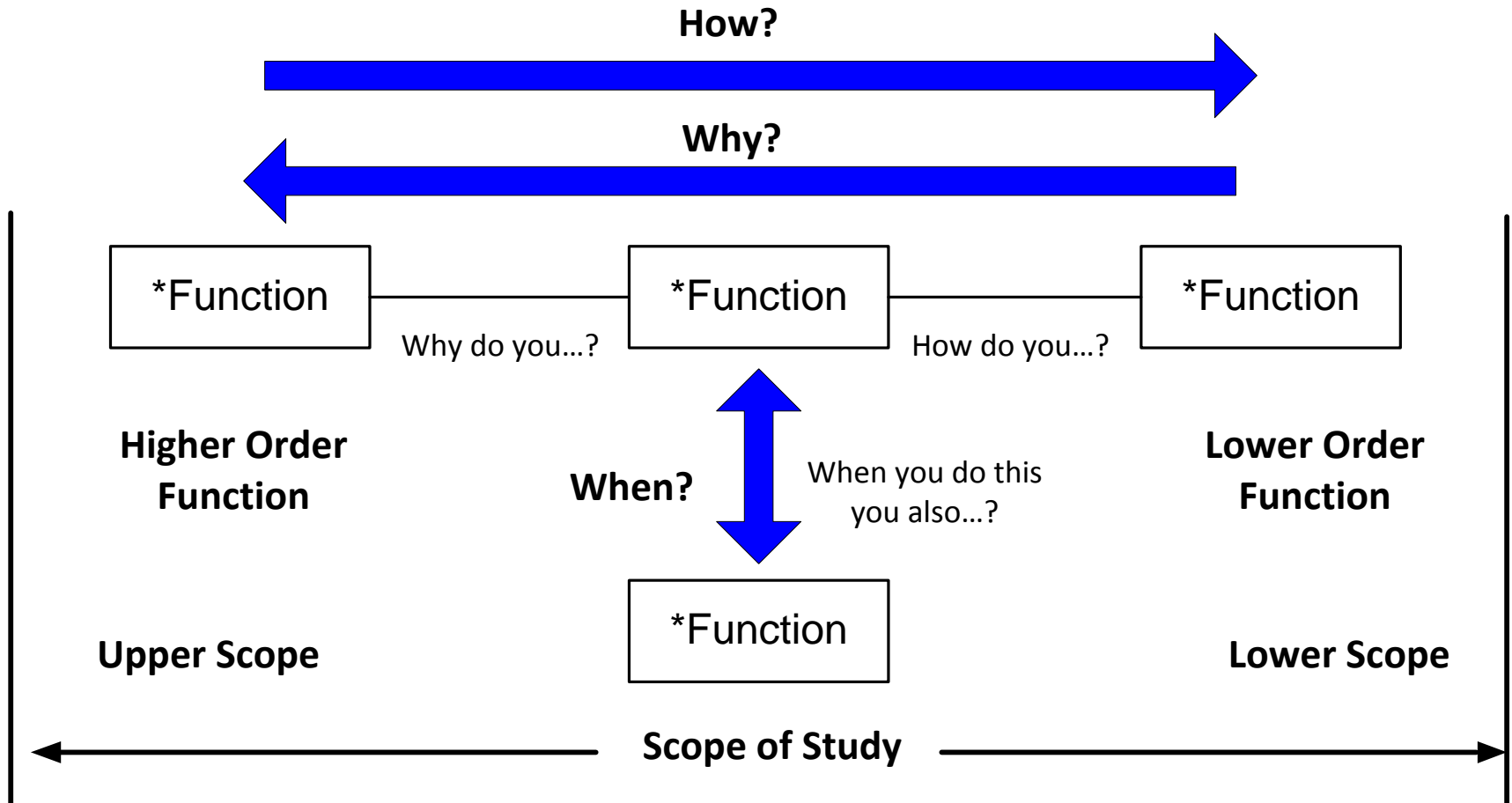
How?

When?

Why?

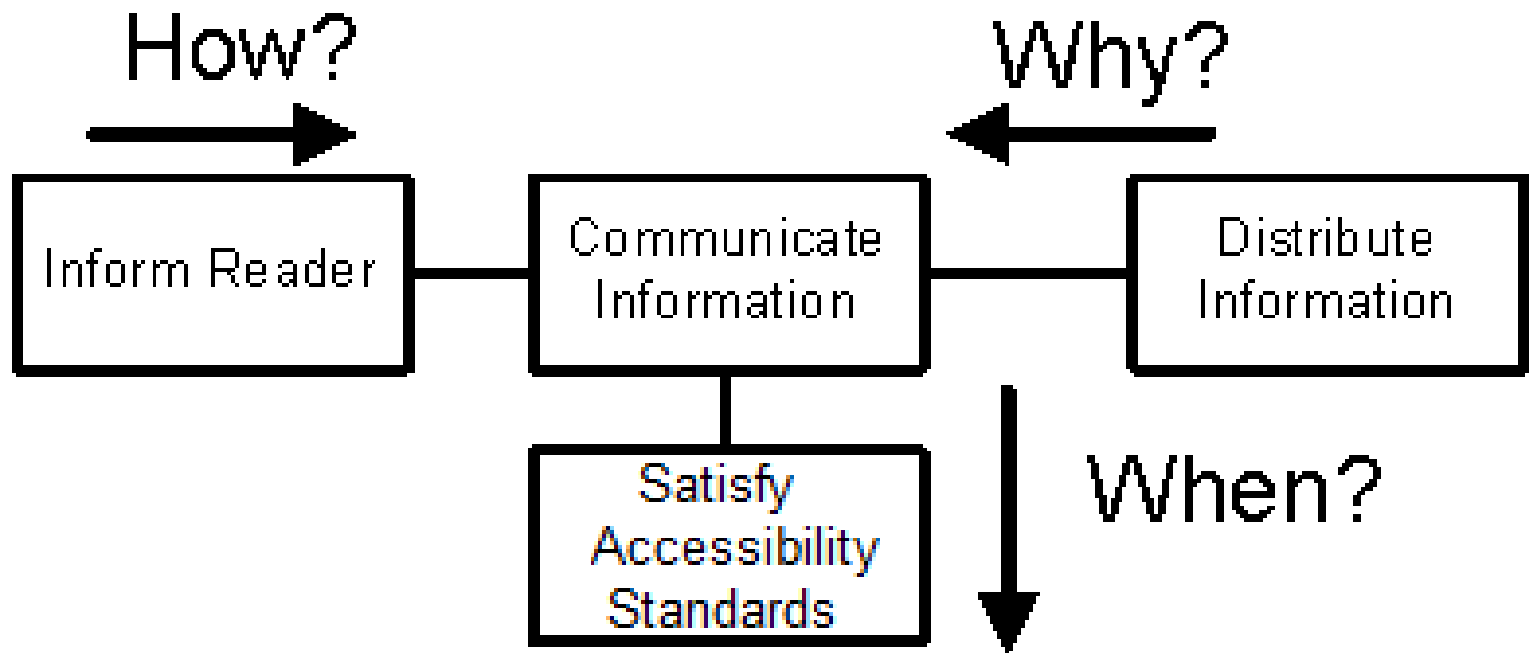


How to Read a FAST Diagram



***...where Function = Active Verb + Measurable Noun**

The “When” Function



Source: VA in Depth

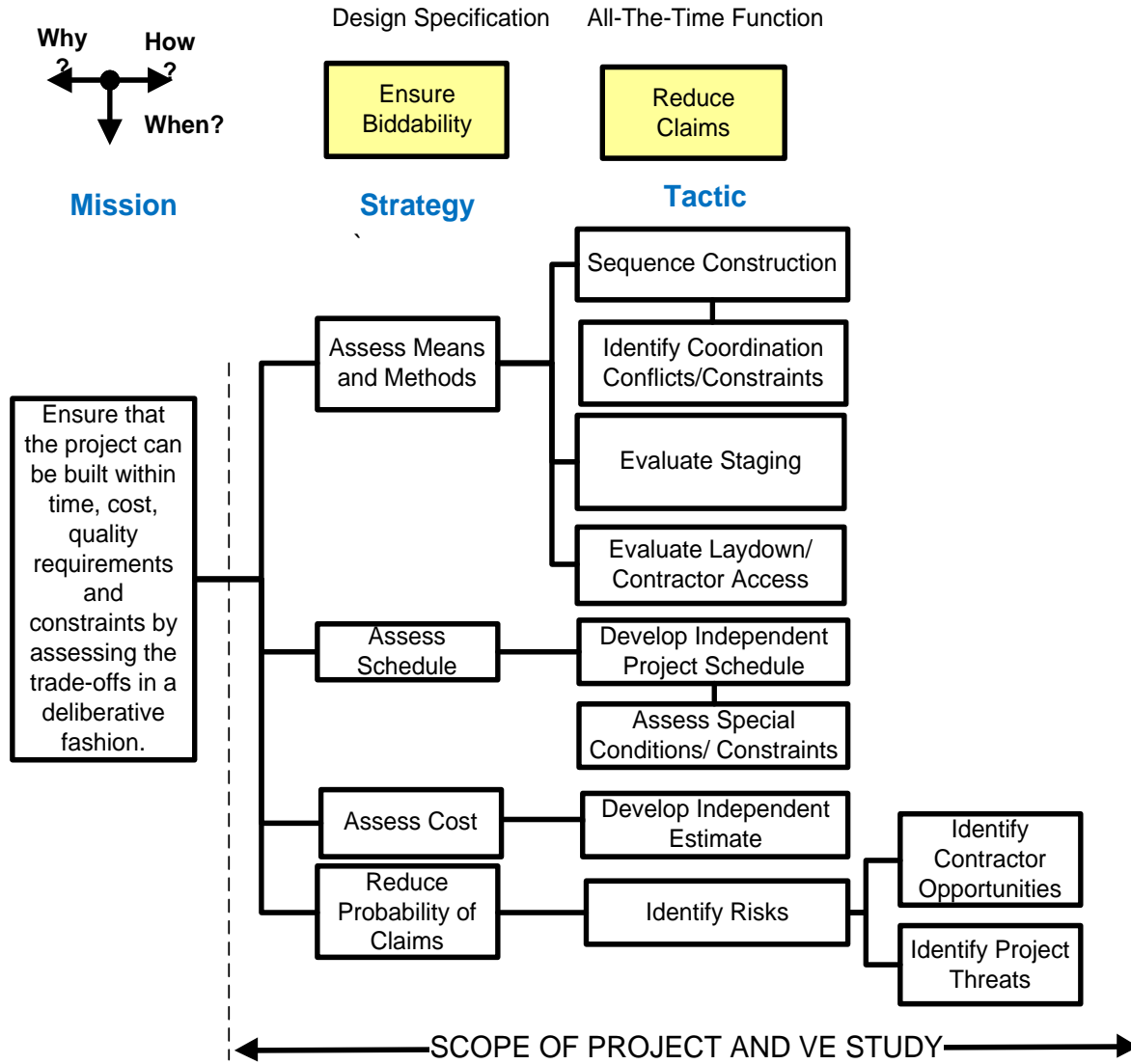
Function Analysis

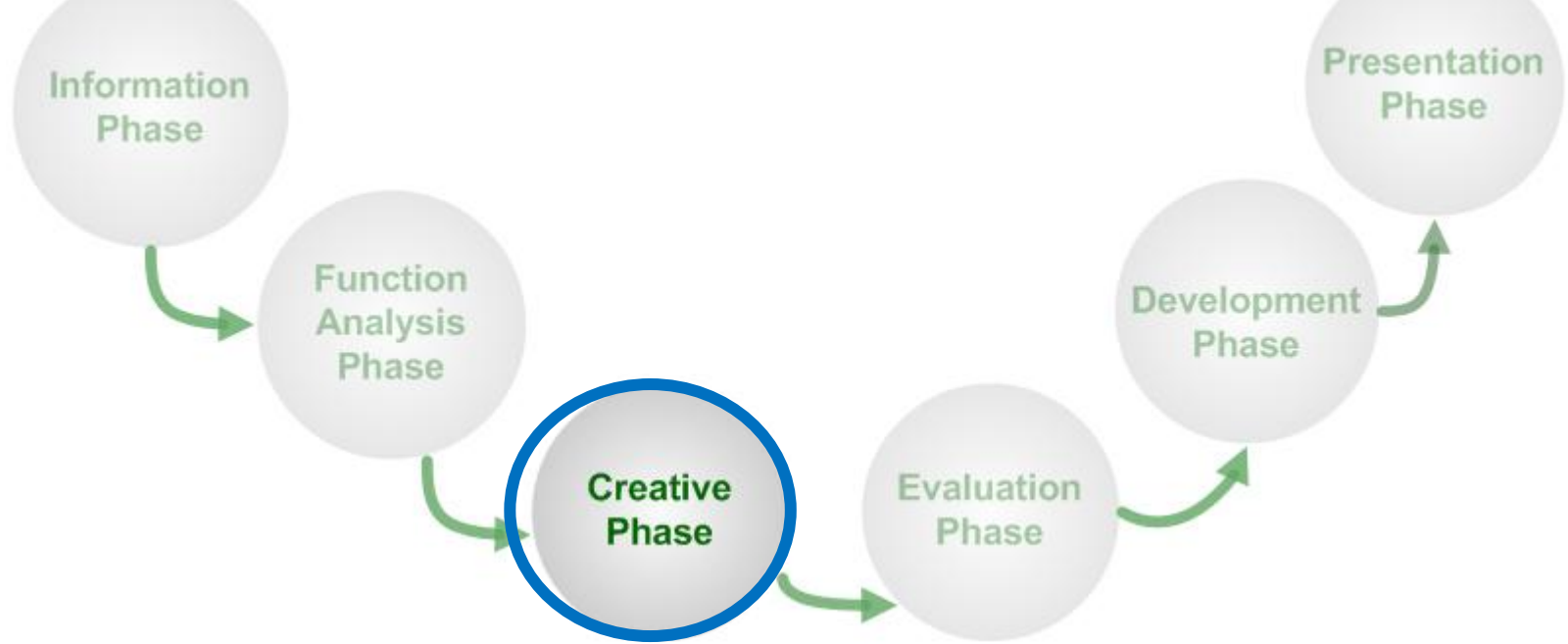
Function Analysis System Technique (FAST)

Canadian Society for Value Analysis

www.scav-csva.org

Functional diagram – Constructability Review VE Workshop Objectives [VECC] - [Nov 23, 2016]





- Generates alternate ideas for performing functions
- Function-based brainstorming as one way to generate ideas
- Goal is to create as many ideas as possible

Function Based Brainstorming

- Use your imagination – the wackier the better!
- Be positive
- All ideas are recorded
- Piggy-backing of ideas is OK
- Quantity counts
- Have fun!

What is the function of a Press Release?

~~“Provide Information”~~

“Inform Public”



How else can you meet the need to
“Inform Public?”

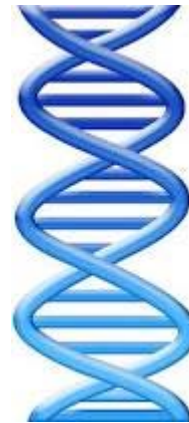
How can you “Inform Public”?

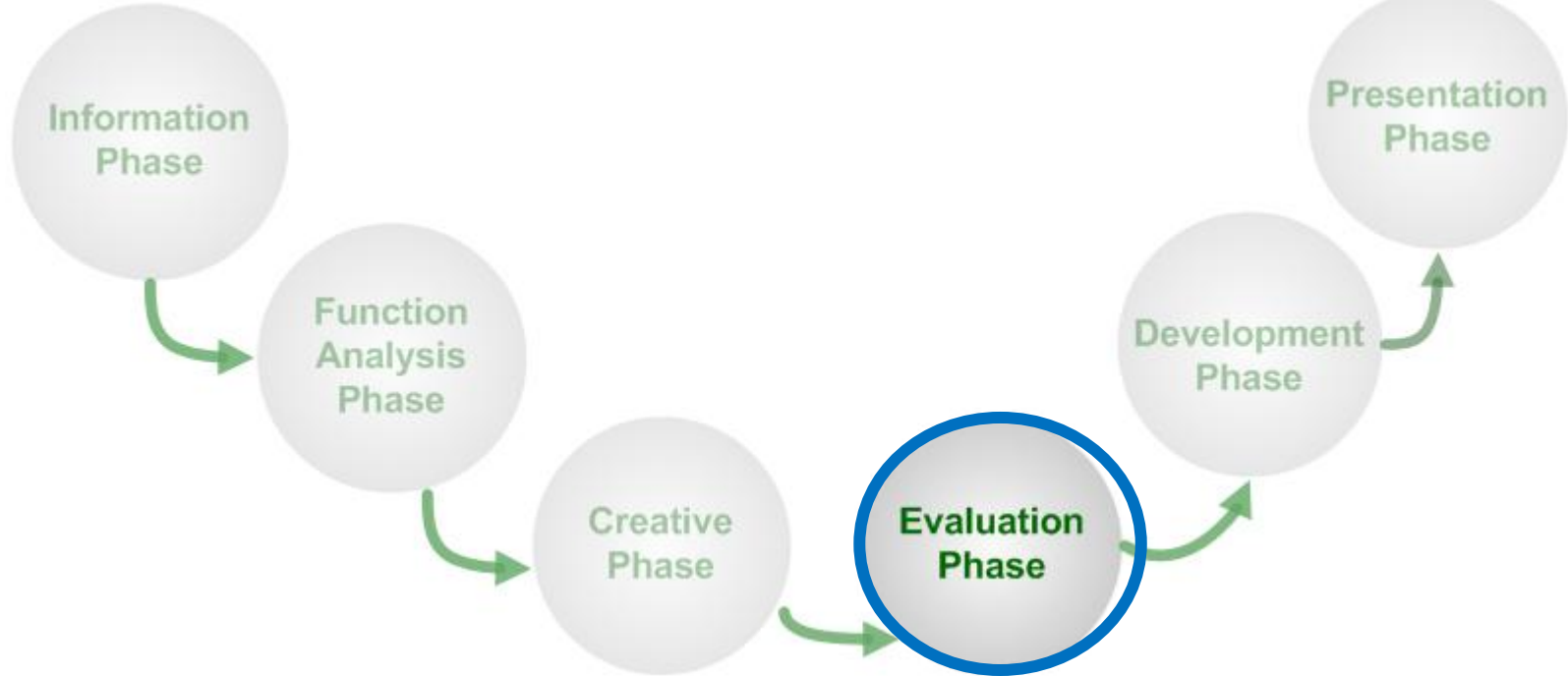


Nutrition Facts	
Per 3/4 cup (175 g)	
Amount	% Daily Value
Calories 160	
Fat 2.5 g	4 %
Saturated 1.5 g	8 %
+ Trans 0 g	
Cholesterol 10 mg	
Sodium 75 mg	3 %
Carbohydrate 25 g	8 %
Fibre 0 g	0 %
Sugars 24 g	
<hr/>	
Vitamin C	0 %
Iron	0 %

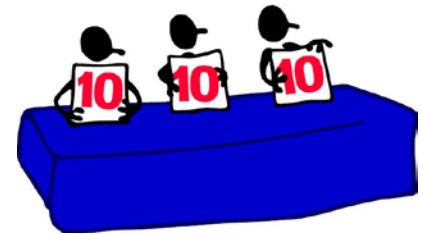


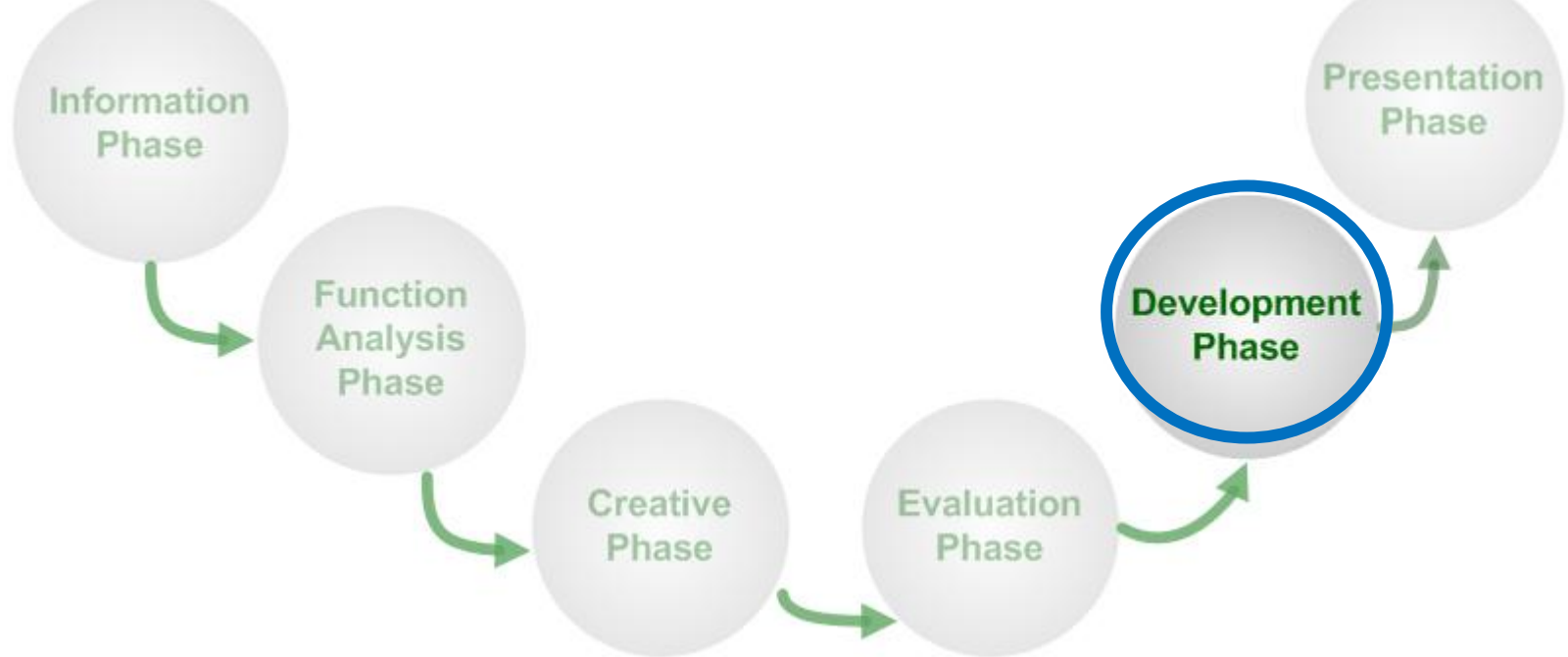
How can you “Store Information”?



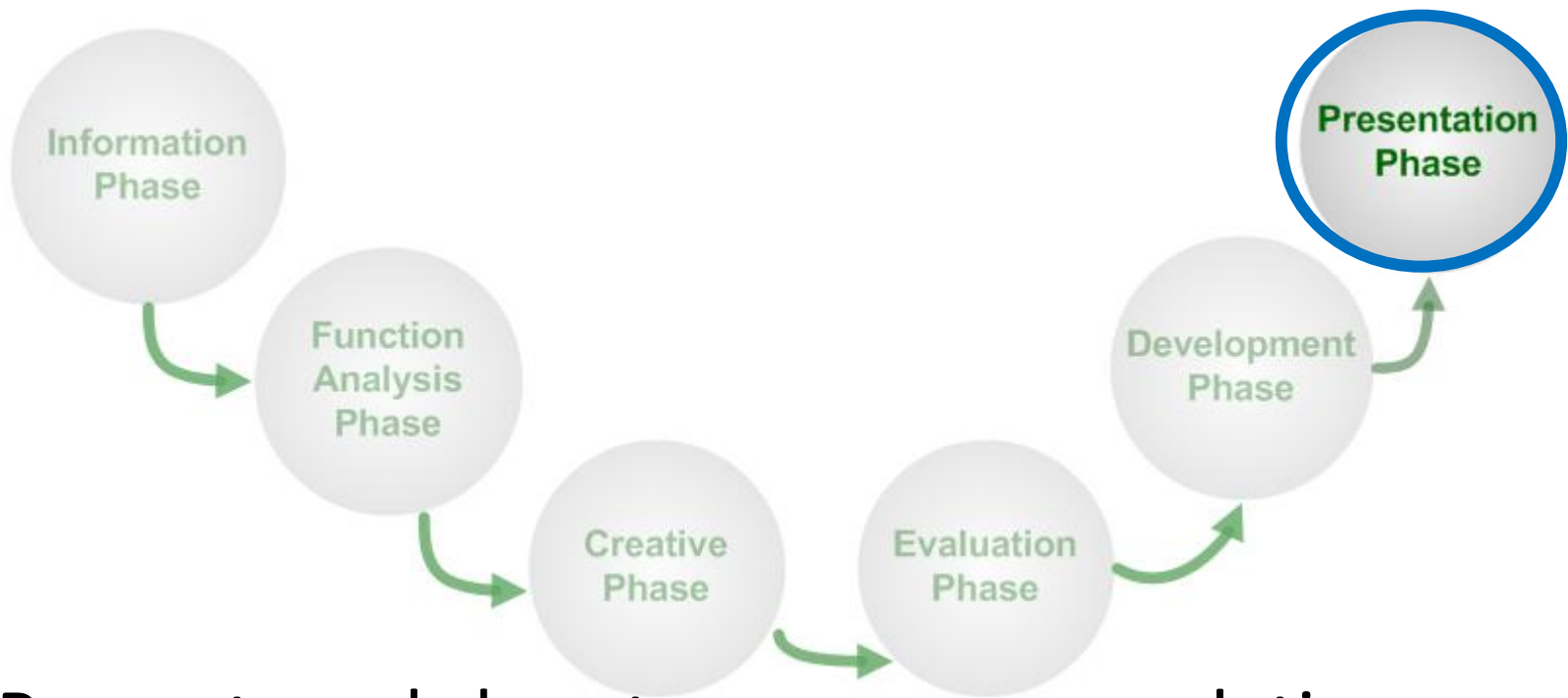


- Ideas from the creative phase are evaluated and prioritized for their potential to:
 - Avoid Cost
 - Add value
 - Reduce Risk





- Explore ideas selected in Evaluation phase
- Obtain data to compare idea to original solution
- Sub-teams explore different alternatives
- Develop ideas into written recommendations

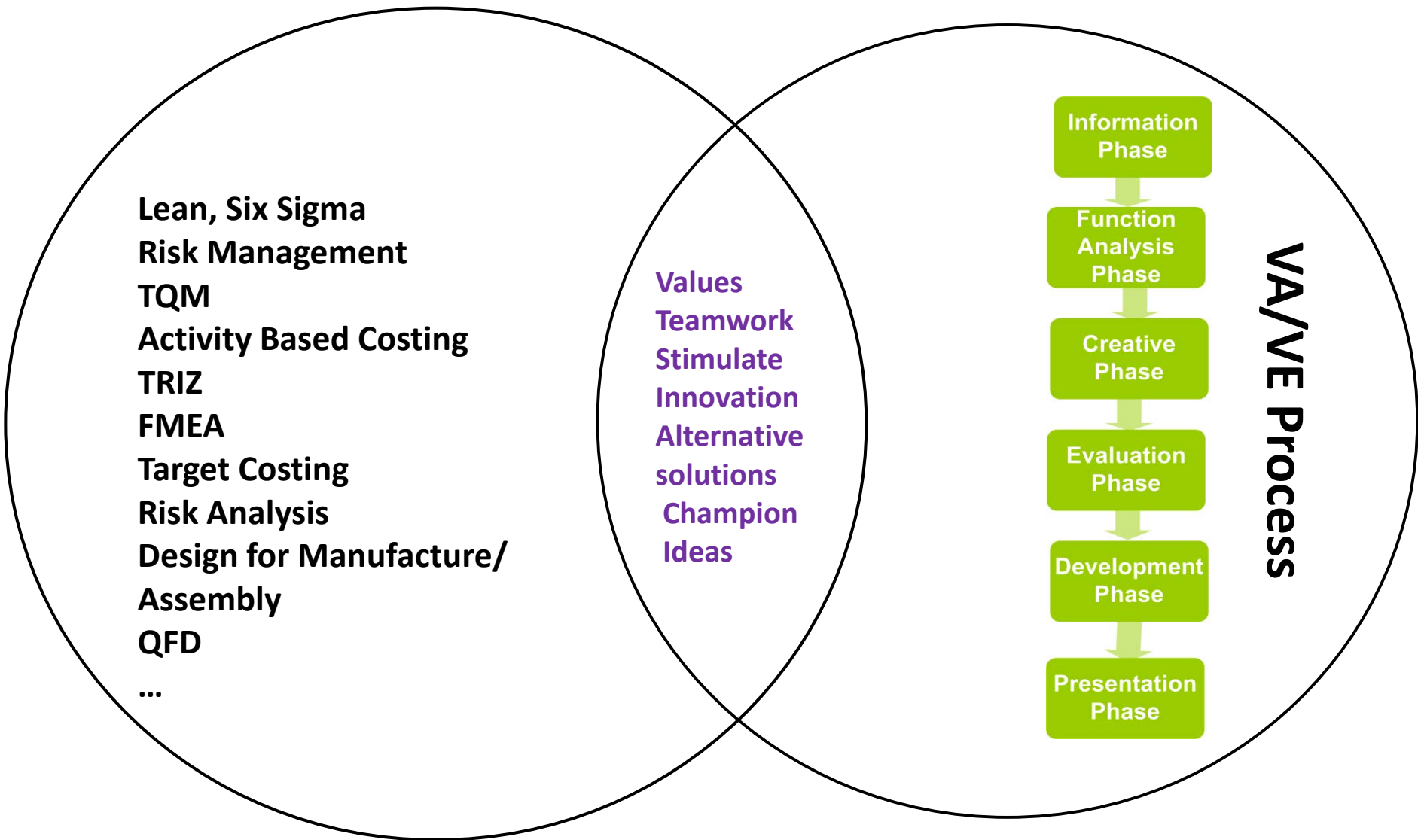


- Present workshop team recommendations
- Demonstrate depth, knowledge and thoroughness
- Inspire confidence in the recommendations

Secrets to Success

- More creative ideas are generated by teams than individuals
- The methodical VA job plan produces better results
- A facilitated workshop creates buy in for change
- Executive Support

Related Tools and Techniques



How the Value Methodology Optimizes Lean

- Generally, lean principles work with the existing process to **reduce waste** and seldom questions if that process delivers high **value**.
- The Value Methodology can ensure your organization has the right process to begin with by employing **function analysis**.
- A well selected multi-disciplined team guided by a value professional, will ensure that performance and cost are balanced by employing function analysis to deliver the absolute best value to your client or customer.

How do I get started?

- Take a minute and think
 - Do I have a business process that's not working?
 - Do I have a client with undefined software needs?
 - Do I have a project in trouble?
 - Do I have a project that exceeds my budget?
 - Do I need to restructure my work group?
 - Do I need to help a client achieve common vision for a service?
- VA Can Help!

Closing Thoughts



Value Analysis is a proven, flexible and powerful methodology, leveraging the understanding of function and value to identify creative new approaches to solving problems.

More Info

www.valueanalysis.ca