Logic Modeling: A Tool to Guide Program Design and Performance Measurement and Evaluation: Telling your Performance Story

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My Aim Today

- Change the way you think about conceptualizing and telling your performance story.
- Change the way you think about Performance Measurement and Evaluation related to your program.

Two Questions

- What is the right *Outcome*?
  - Short-term – produce research
  - Intermediate – develop prototype; market penetration
  - Strategic – impact on clients
- Am I getting at the right Outcome, the *right way*? *Working better! Management Control*
  - Efficiency
  - Effectiveness

Drivers for Program Planning, Performance Measurement, and Evaluation

- Government Performance Results Act (GPRA)
  - Requires Strategic Plan, Annual Plan, and Annual Performance Report
- OMB's Program Assessment Rating Tool (PART)
  - Tool designed to assess and evaluate programs across the government
- DD Act
  - Requirements in Sections 104 and 154

PART Purposes

"The program assessment effort presents an opportunity to inform and improve agency GPRA plans and reports, and establish a meaningful systematic link between GPRA and the budget process.

The PART is a diagnostic tool that relies on objective data to inform evidence-based judgments to assess and evaluate programs across the wide range of issues related to performance. . . . The formalization of performance evaluation through this process is intended to develop defensible and consistent ratings of programs for the FY 2004 Budget and beyond."

PART Sections

Purpose/Relevance/ Federal Role	To assess whether the program design and purpose are clear and defensible
Strategic Planning	To assess whether the agency sets valid annual and long-term goals for the program
Program Management	To rate agency management of the program, including financial oversight and program improvement efforts
Program Results	To rate program performance on goals reviewed in the strategic planning section and through other evaluations

Orientation

- Words we'll use a lot!
  - A *program* is …
  - *Performance Measurement* is …
  - Performance Measurement leads to …
  - *Program Evaluation* is …
  - Program Evaluation leads to…
- What's common among all?
  - Intentionality – If, then

More Words

- Goals
- Objectives
  - Program
    - Short-term
    - Intermediate
  - Supporting
    - Resources
    - Activities
    - Outputs: productivity and reach

Orientations for Performance Measurement & Evaluation

- PERFORMANCE MEASUREMENT
  - *Accountability*
    - What objectives/outcomes have been accomplished at what levels?
- PROGRAM EVALUATION
  - *Learning, Program Improvement, Defense*
    - What factors, internally and/or externally influenced my performance? (Retrospective)
    - What effect will this level of performance have on future performance if I don't do something? (Prospective)
    - What roles did context play in my performance?

Orientation of Data Needs

- Horizontal
  - Information used within ‘level’ to manage for results. All this information should be useful to managers within level; some will ALSO be useful to managers at other ‘levels’.
- Vertical
  - Information collected at various ‘levels’ that is shared across levels to enable organizational managing for results and accountability.

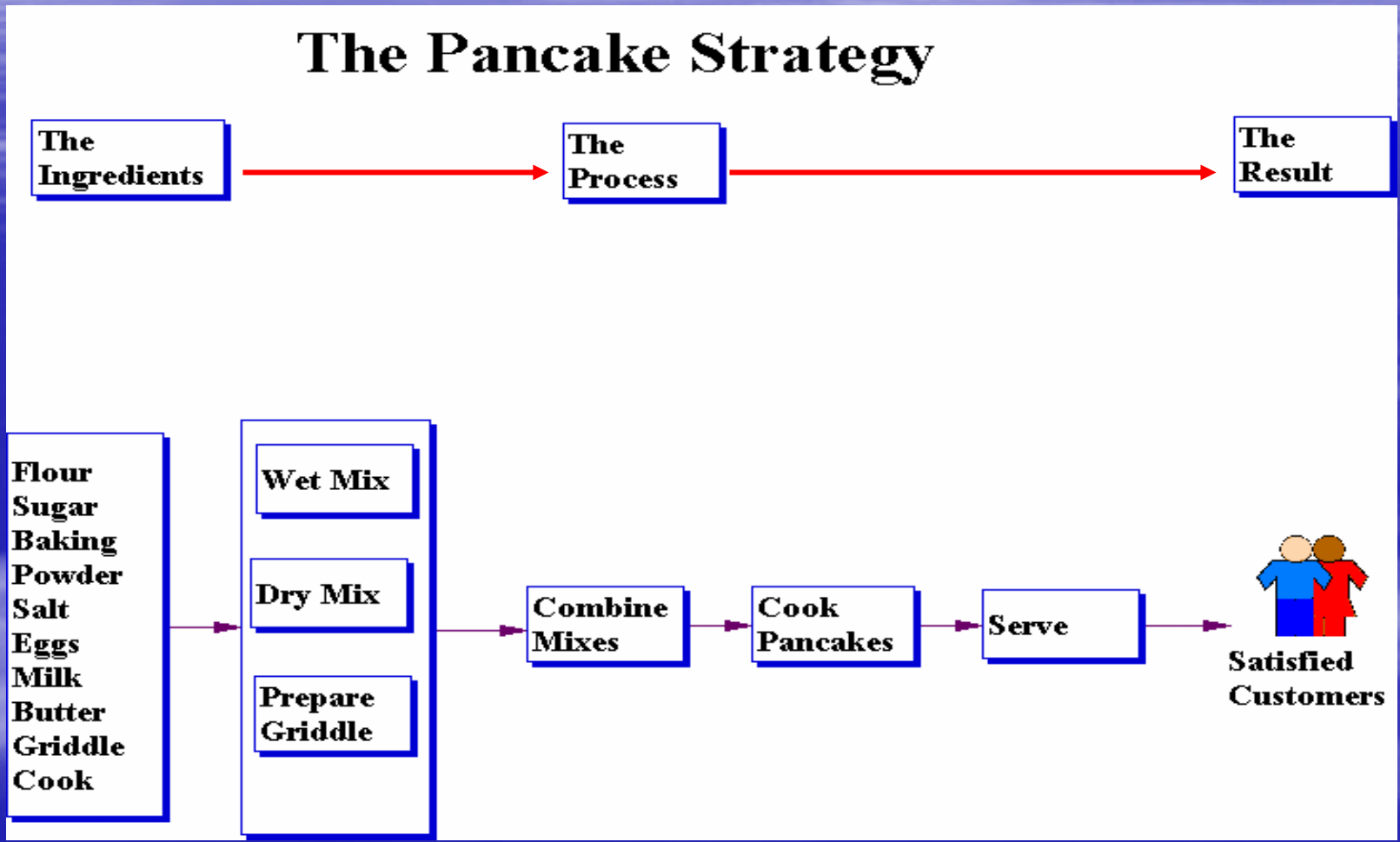
Evaluation Axioms

- Evaluation follows the *plan, do, monitor, and refine* process.
  (Even evaluators don't get things right the first time out!)
- You should never evaluate a program that you do not know.
  - Logic Models provide one way to describe the program.

Logic Models as Recipes

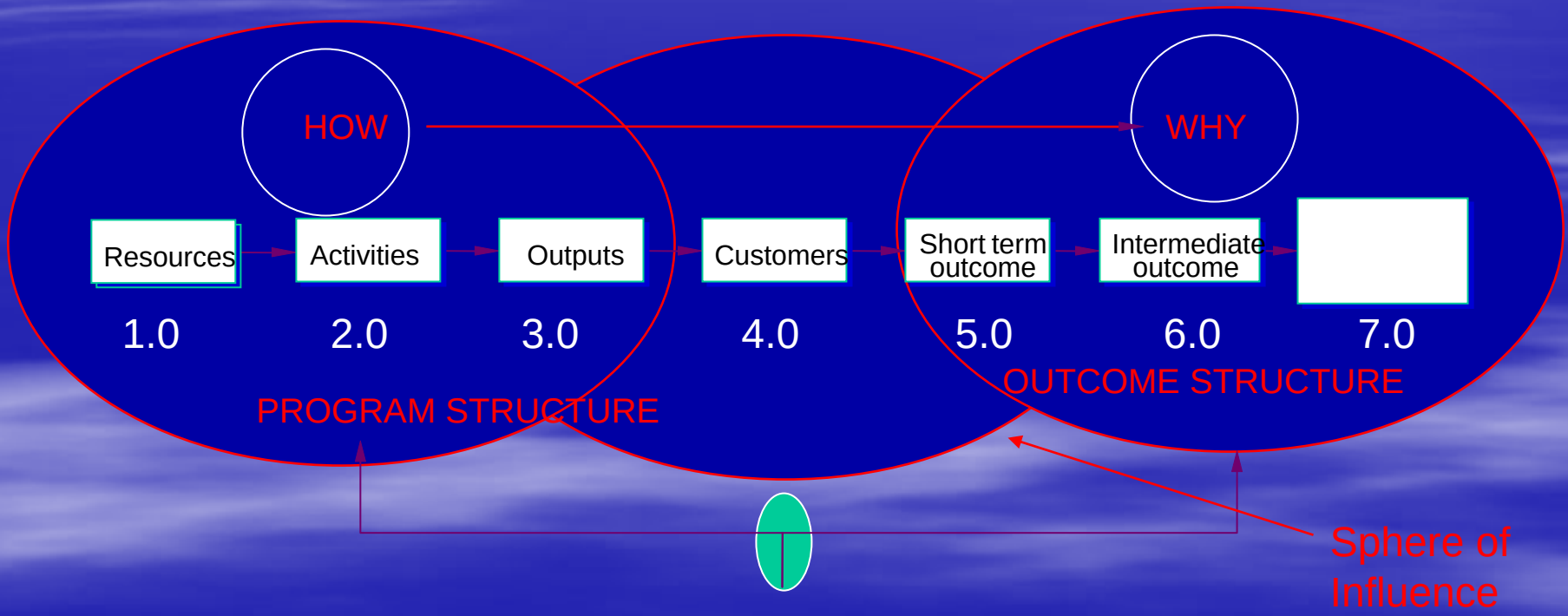
- Recipes have three essential components:
  - A description of the entree to be produced;
  - A list of specific ingredients according to specific measures;
  - and specific steps to put the ingredients together.
- A good cook follows the recipe – managers would do well to create and follow their recipe for success!

Recipes and Logic Models



LOGIC MODEL

A logic model is a diagram and text that illustrates/describes the logical (causal) relationships among program elements and the results to be achieved



Elements of the Logic Model

- **Resources/Inputs:** Programmatic investments available to support the program.
- **Activities:** Things you do– activities you plan to conduct in your program.
- **Outputs:** Product or service delivery/implementation targets you aim to produce.
- **Customer:** User of the products/services. Target audience the program is designed to reach.
- **Outcomes:** Changes or benefits resulting from activities and outputs.
- *Outcome Structure*
  - Short-term (K, S, A) – Changes in learning, knowledge, attitude, skills, understanding (Obj.)
  - Intermediate (Behavior) – Changes in behavior, practice or decisions (Obj.)
  - Long-term (Condition) – Changes in condition (Goal)
- **External Influences:** Factors that will influence change in the affected community.

Benefits of Logic Modeling

- Communicates the performance story of the program or project.
- Focuses attention on the most important connections between actions and results.
- Builds a common understanding among staff and with stakeholders.
- Helps staff “manage for results” and informs program design.
- Finds “gaps” in the logic of a program and works to resolve them.

Steps in the Logic Model Process

1. Establish a stakeholder work group and collect documents.
2. Define the problem and context for the program or project.
3. Define the elements of the program in a table.
4. Verify the logic table with stakeholders.
5. Develop a diagram and text describing logical relationships.
6. Verify the Logic Model with stakeholders.
7. Then use the Logic Model to identify and confirm performance measures, and in planning, conducting and reporting performance measurement and evaluation.

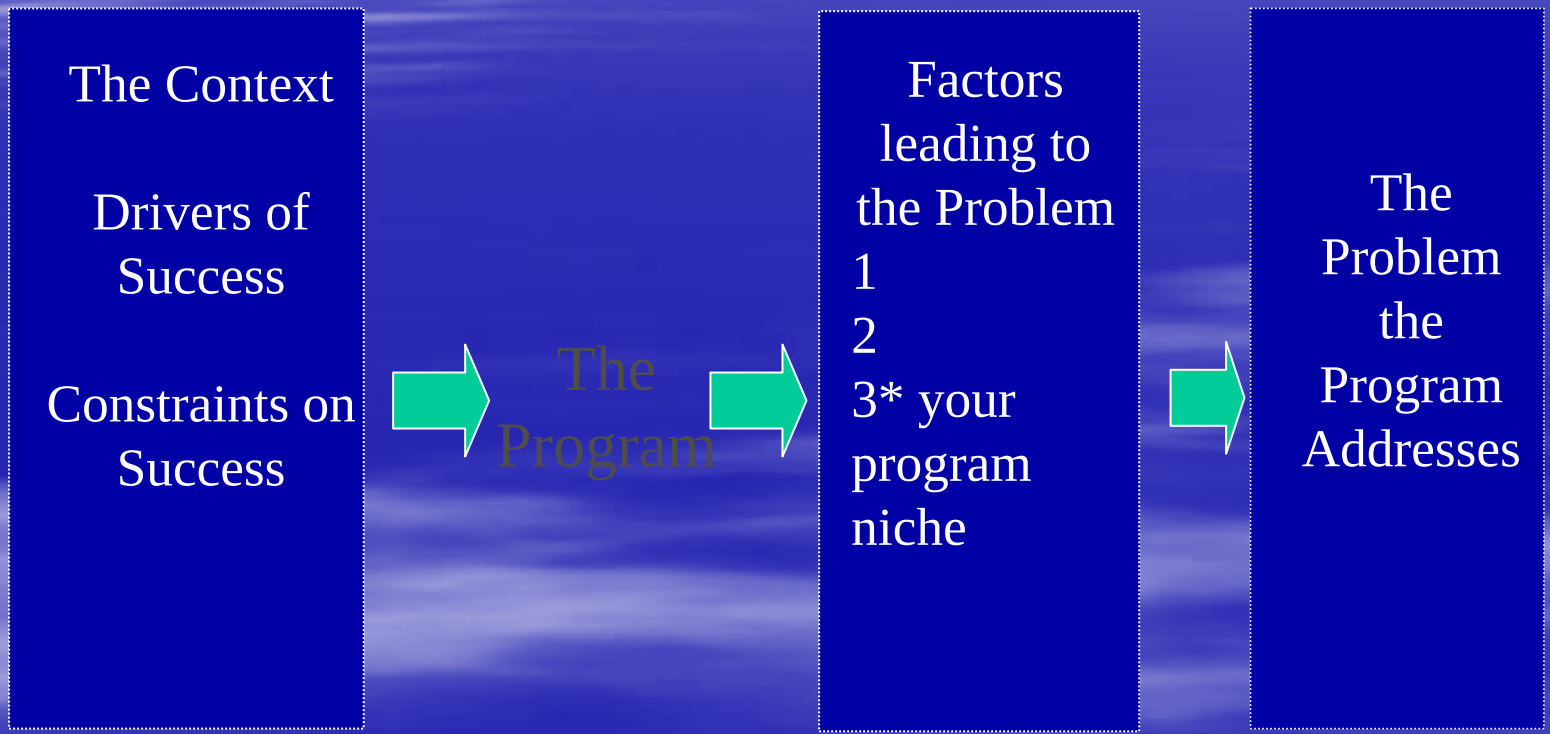
Step 1. Establish a stakeholder work group and collect documents and information.

Convene/consult a stakeholder work group

- provides different perspectives and knowledge
- attempts agreement on program performance expectations

- Review sources of program or project documentation
  - Strategic and operational plans
  - Budget requests
  - Current metrics
  - Past evaluations
- Conduct interviews of appropriate staff

Step 2. Define the problem the program addresses and the context.



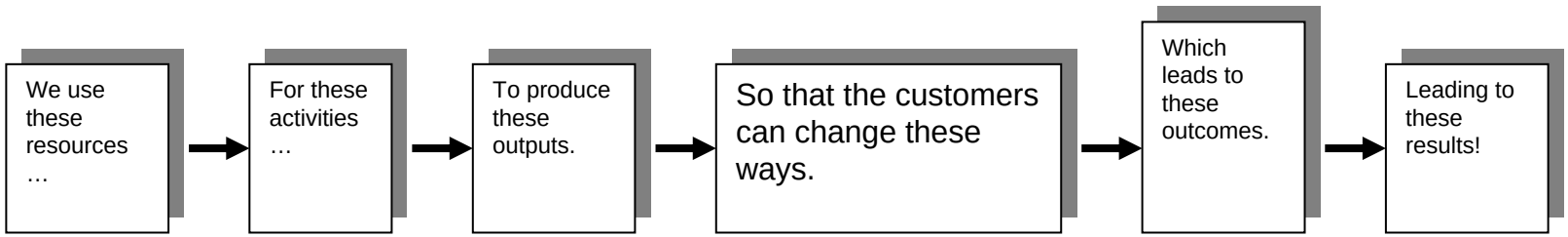
Step 4. Verify the logic table with Stakeholders.

				Outcomes		
Resources/ Inputs	Activities	Outputs	Customers Reached	Short-terms *(Changes in K,S,A)*	Intermediate *(Changes in Behavior)*	Long-term *(Changes in Condition)*
5 ESD Staff $65K Extramural funds Outside Consultant	Develop training materials. Deliver Training.	PE /PM Training Materials. EPA Managers and staff complete training. Innovation Training Materials.	NCEI Staff IAC Staff PEN PEC 04' OSWER OW States HQ/Regional managers & staff	Knowledge of program PM/PM increased. Customers equipped with skills to manage and conduct evaluations.	Number of evaluations conducted and managed increased. Program evaluation skills are used by customers in the work environment.	Evaluation culture established. Quality of evaluations managed and conducted is improved. Improvements in effectiveness of programs leading to better environmental results

External Influences: Budget is reduced for next FY.

Step 5. Develop a diagram and text describing logical relationships.

Draw arrows to indicate/link the causal relationships between the logic model elements.



- Limit the number of arrows. Show only the most critical feedback loops.
- Work from both directions (right-to-left and left-to-right)
- There are many different forms of logic model diagrams.

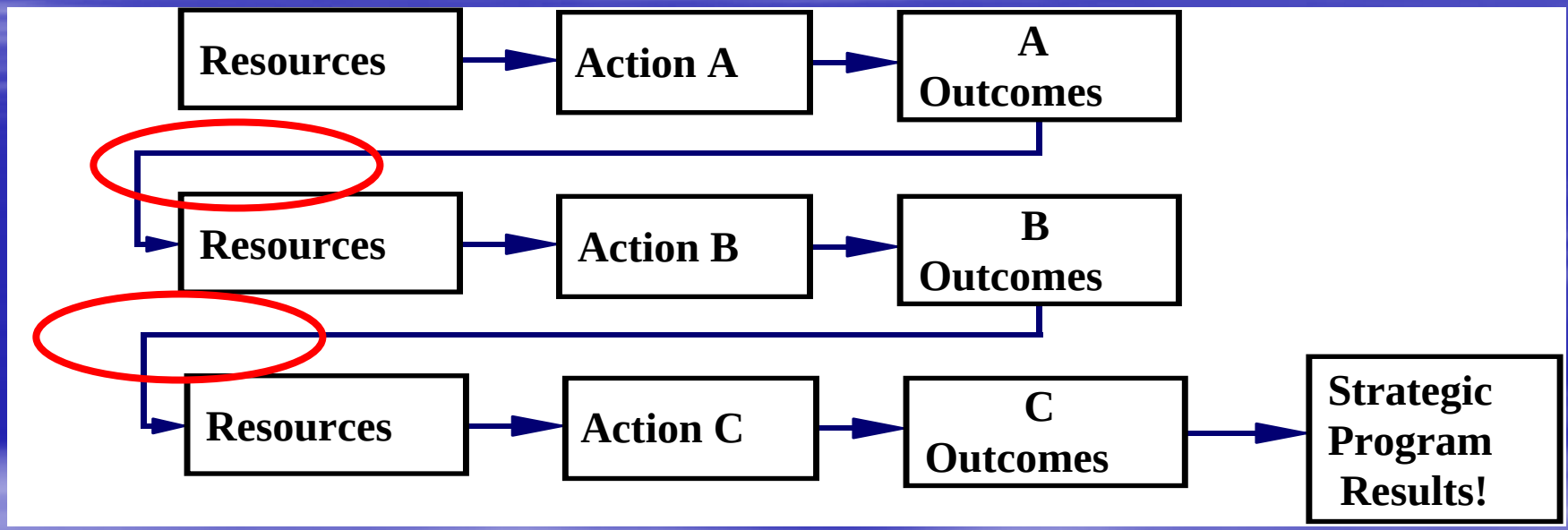
Step 6. Verify logic with stakeholders.

- Seek review from the same, or an even broader, group of stakeholders.
- Check the logic - again
  - How-Why Questions. Start with Outcomes and ask “How?” Start at Activities, ask “Why?”
  - If-Then Questions. Start at Activities and move along to Outcomes asking “If this, then that?”
- Compare to what units in the organization do and define their contributions to the outcomes.
- Check the logic by checking it against

“Z” Logic
Unpacking the Program’s Logic

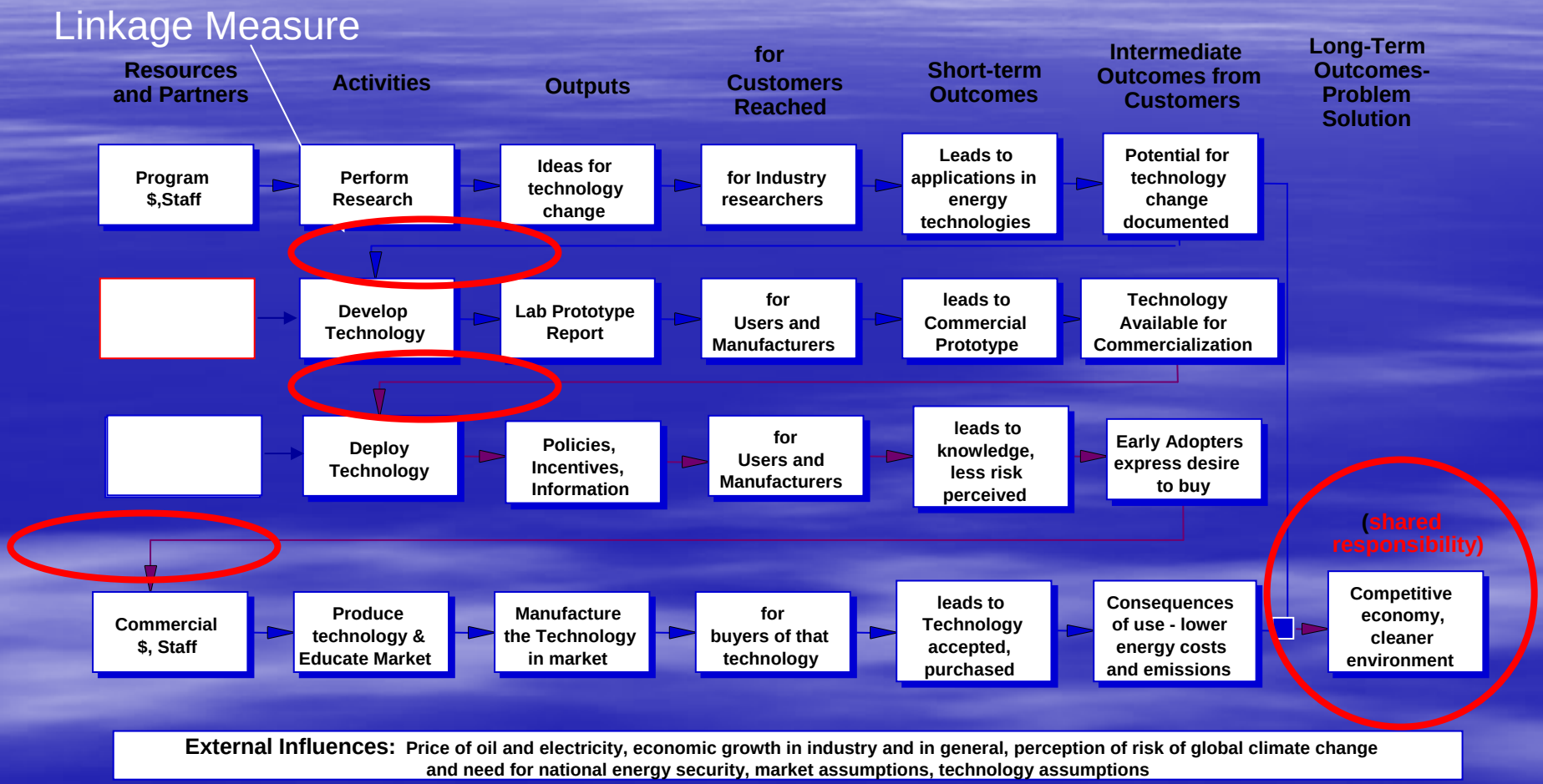
- In real life program’s achieve their strategic results through a series of actions similar to a relay race.
  - Action A produces a set of outcomes that become inputs to Action B.
  - Action B produces a set of outcomes that become inputs to Action C.
  - Action C produces a set of outcomes that lead to the final strategic goal of the program.
- These actions could be thought of as nested programs within the larger program.

"Z" Logic
Supplier-Customer Relationship



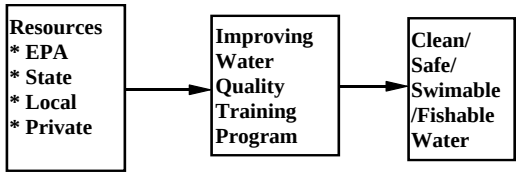
Unpacking supports more *focused* PM and thus more useful evaluation, as well as better understanding and communication about how the "Program" is supposed to work!

'Z' Logic Model for an Energy R,D,&D Program

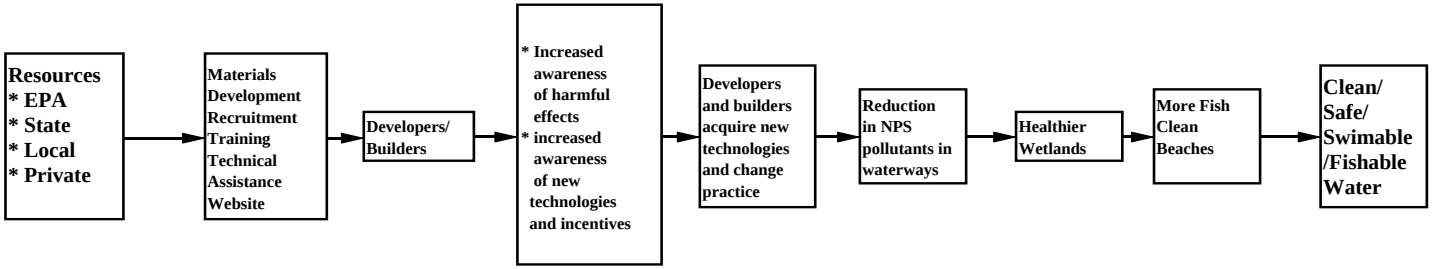


Source: McLaughlin and Jordan, 1999

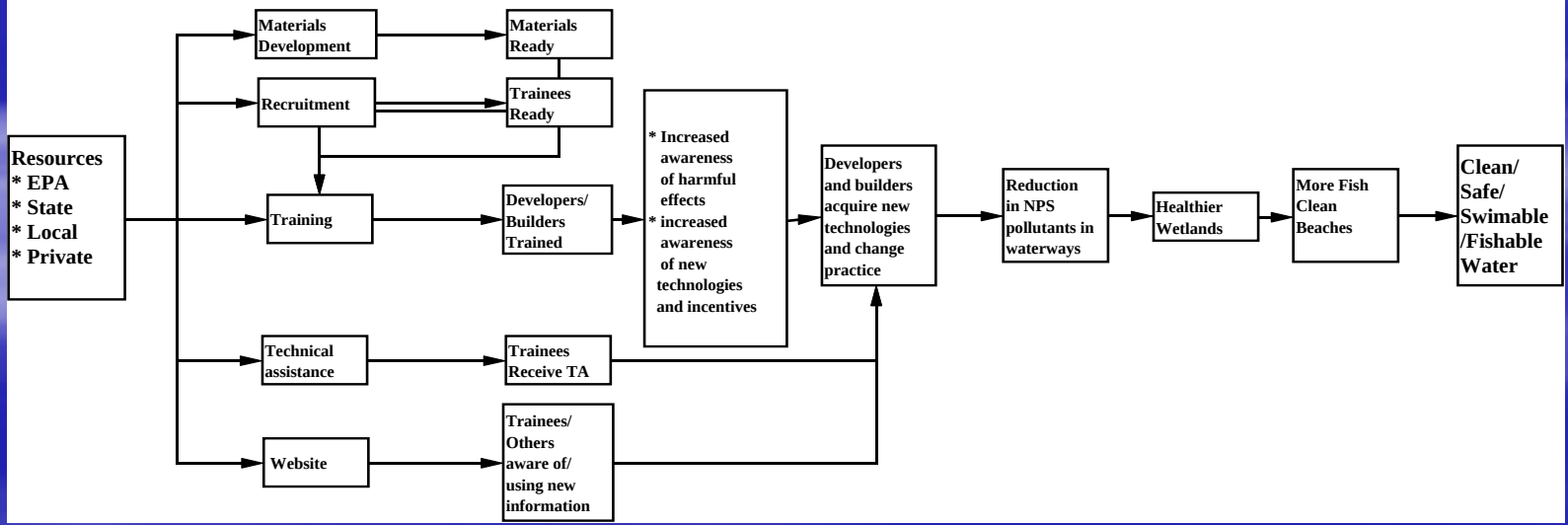
Level I Logic Model



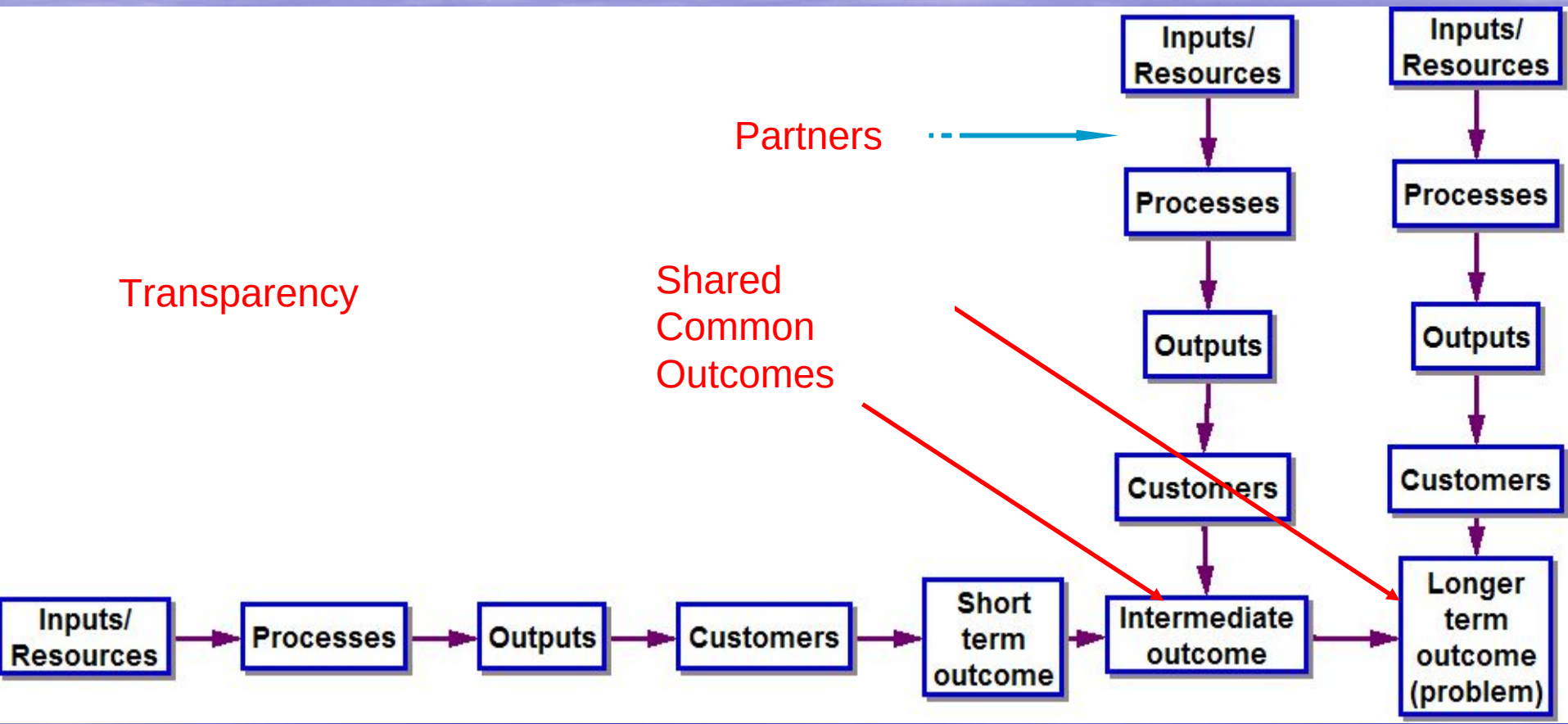
Level II Logic Model



Level III Logic Model



Complex Effects Chain



Step 3. Define the elements of the program or project in a table.

- HOW -

Resources/ Inputs	Activities	Outputs	Customers Reached	Outcomes: Short-term (Changes in K, S, A)	Intermediate (Changes in Behavior)	Long-term (Changes in Condition)

External Influences:

Key Questions Managers Need to Answer about their programs

- What am I doing, with whom, to whom/what? (effort)
- How well am I doing it? (quality)
  - Customer Feedback
  - Peer Review for Technical Quality
  - User Review for Social Validity

PM

- Is anybody (anything) better off? (effect)
  - Short-term
  - Long-term

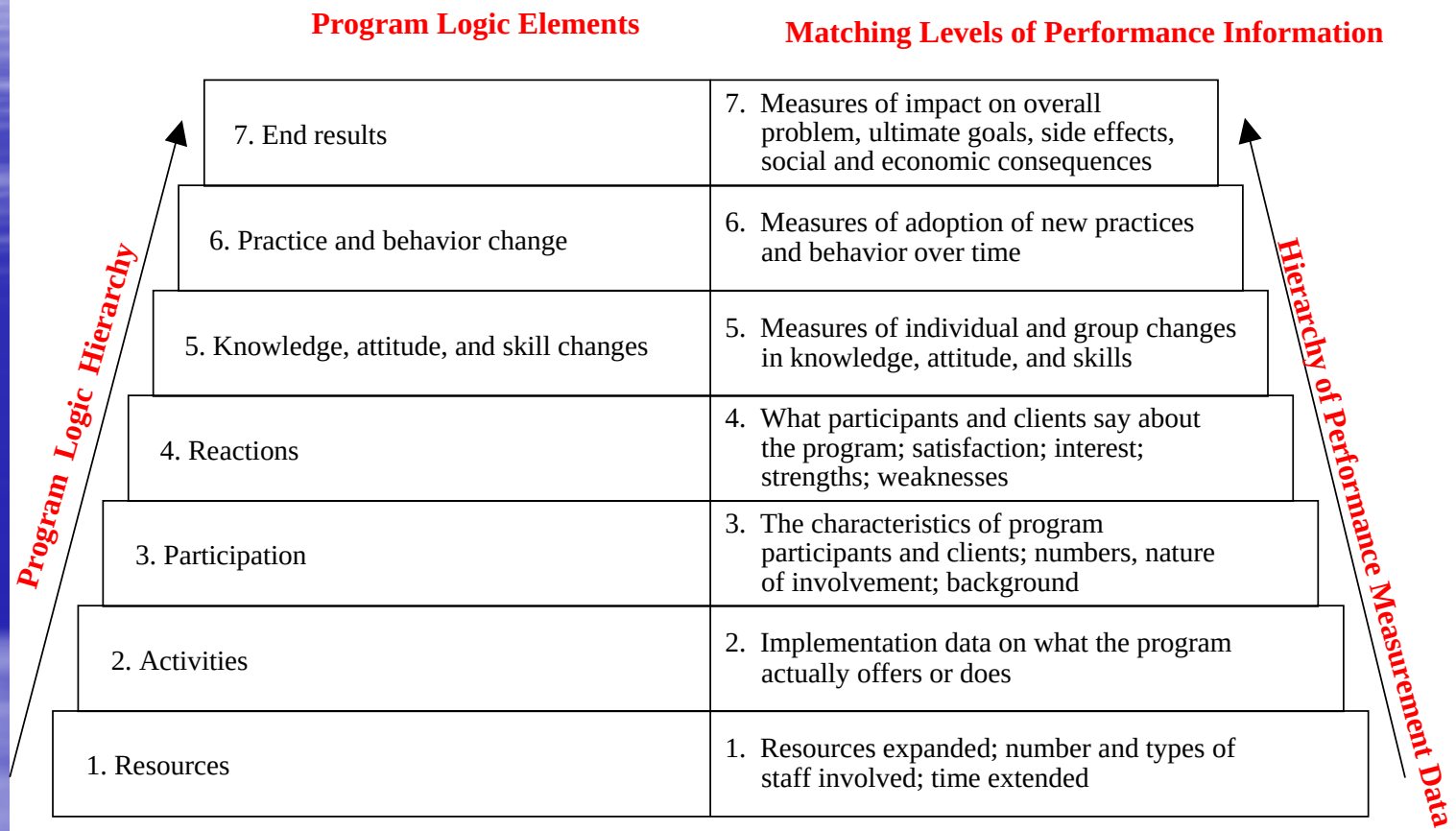
- What role, if any, did my program play in the results?
- What role, if any, did the context play?
- Were there any unintended outcomes?
- What will happen if I don't do something?

PE

Evidence?

- Evaluation aims at *testing hypotheses*:
  - If I expose these people to this intervention, within this context, I'll get these results.
- Three buckets of information are required:
  - Intervention; Results (short-term, Intermediate, and long-term – IMPACT); and Context.
- *Logic Models* enable the selection of appropriate measures to acquire the information required.

Performance Measurement Hierarchy



Types of Performance Measures

Category	Definition	Examples
Resources/ Inputs	Resources consumed by the organization.	Amount of funds, # of FTE, materials, equipment, supplies (etc.).
Activities	The work performed that directly produces the core products and services.	# of training classes offered as designed, according to standards of excellence.
Outputs	Products and services delivered/produced as a direct result of program activities.	Research and evaluation reports produced.
Customer Reached	Measure of target population receiving outputs.	% of target population trained; # of target population receiving technical assistance.
Customer Satisfaction	Measure of satisfaction with outputs.	% of customers dissatisfied with training; % of customers “very satisfied” with assistance received.
Outcomes	Accomplishment of program objectives; attributable to program outputs.	Pounds of pollutants reduced; Miles of beaches cleaned; % increase in industry’s understanding of regulatory recycling exclusion; # of sectors that adopt regulatory recycling exclusion.

Work Quality Measures

Efficiency	The ratio of the amount of input to the amount of output. Focus is on operating efficiency. Relating output to some specific resource in terms of cost or time.	Cost per workbook produced; Cost per inspection conducted.
Productivity	Measure of the rate of production per some specific unit of resource (e.g. staff or employee). The focus is on labor productivity.	Number of enforcement cases investigated per inspector.
Cost Effectiveness	Measure that relates outcomes to costs.	Cost per pounds of pollutants produced; Cost per mile of beach cleaned.
Service Quality	Measure of the quality of products and services produced.	Percent of technical assistance requests responded to within one week.

Types of Data

- Qualitative
  - Observations, interviews, document reviews, "descriptions of incidents, actions, processes"
- Quantitative
  - Numerical-- data collection through reports, tests, surveys, existing data bases
- Not a question of either/or, but when to use a method given performance question and context. Using *mixed* methods yields the strongest conclusions.

In the end Logic Models:

- Enable the identification of outcomes for which you are *responsible* and those for which your are *accountable*.
- Focus your PM/PE on the right elements of performance to enable program improvement and the estimation of causal relationships between and among elements.
- Better position you to present and defend your claims.