

Change Agency for Requirements Engineers

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Problem Statement

Deep knowledge of requirements engineering (RE) practices and great passion for their proper use are often not enough to ensure that requirements engineering becomes established as a corporate best practice

This is true despite the published evidence of requirements engineering benefits, and often is the case even when a company expresses a need or desire to improve in this area

How can we improve this situation?

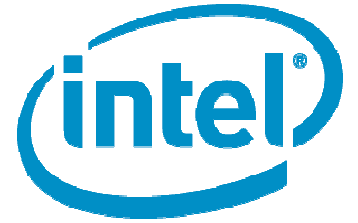
Contents

1. Organizational Culture and Change Agency
2. Three Foundation Practices of Effective Change Agency, Applied to Requirements Engineering
 - Evolutionary Delivery
 - Diffusion of Innovations
 - Influencing skills
3. Sources for More information

Objectives

When you have completed this tutorial, you will be able to:

- Understand change agency, change agents, and their role in an organization
- Discuss the principles behind three foundation practices of change agency
- Describe and apply requirements engineering as an innovation
- Use change agency techniques to improve requirements engineering practices within a culture
- Find more information on the topics presented



Organizational Culture and Change Agency

What is Organizational Culture?

Organizational culture is “*the shared tacit assumptions of a group that it has learned in coping with external tasks and dealing with internal relationships*”. (Edgar Schein)

Organizational culture is a product of many things, including

- The **philosophy** of the company's founders
- The **social learning** the company has accomplished
- Shared **experiences** (both successes and failures)

Every culture contains *artifacts* – objects, concepts, and processes – with shared meaning to its members

Source: *The Corporate Culture Survival Guide*

The Three Levels of Culture

- | | | |
|------------------------------|---|--|
| 1. Observed Artifacts | → | The objects, concepts, and processes meaningful to a culture |
| 2. Espoused Values | → | Spoken or written strategies, goals, values, and philosophy |
| 3. Tacit Assumptions | → | Unspoken, shared beliefs on which the culture is built |

Culture is complex; a superficial understanding can be just as dangerous as no understanding at all

Source: *The Corporate Culture Survival Guide*

What is a Change Agent?

A Change Agent is someone who influences or facilitates change within a group

A change agent

- Uses experience and judgment to apply change agency best practices
- Communicates with groups and individuals, going person to person if necessary, to foster change
- Keeps the customer's interests foremost at all times
- Remains unbiased and flexible
- Listens and observes continuously
- Helps people manage the anxiety associated with change

The Role of a Change Agent

A change agent serves as a *catalyst for change* and a *lightning rod for innovation* by

- Illustrating gaps and areas for improvement
- Shaping the environment to improve change effectiveness and receptivity
- Providing subject matter expertise
- Guiding the group through the details and challenges of the change process
- Confronting facts and speaking the truth

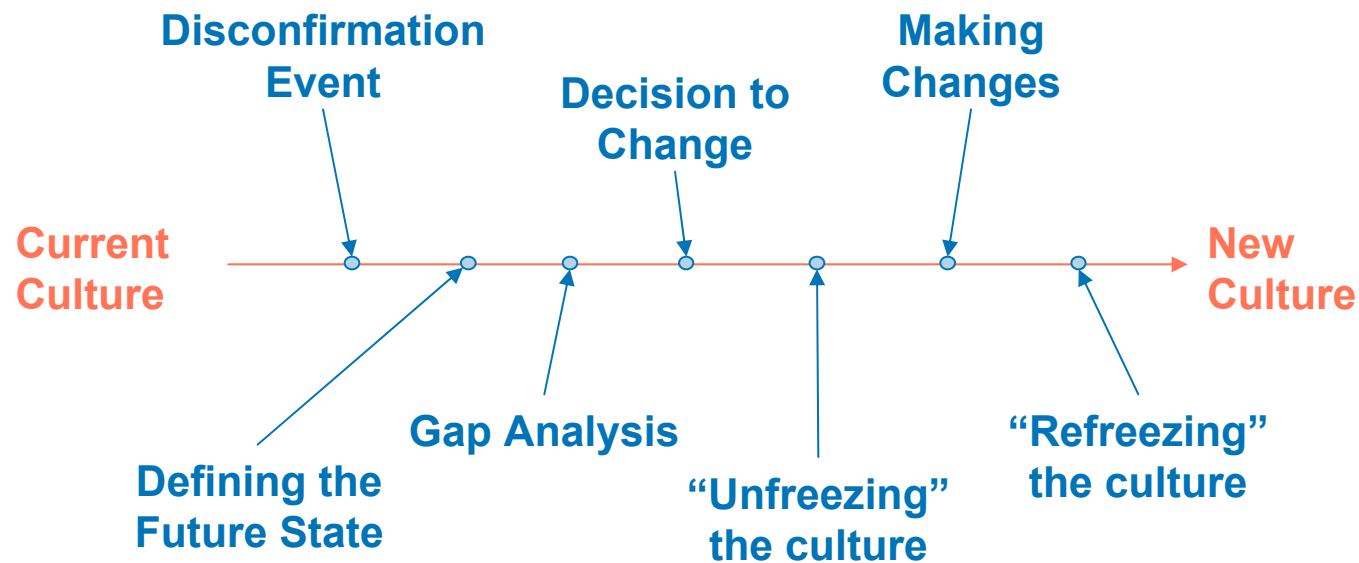
A Balancing Act

Irrelevant	Successful	Uninteresting
Change agents too different from the people they seek to change can be ineffective because they are “outsiders”	Change agents who balance insider versus outsider status	Change agents too similar to the people they serve provide fewer innovations than those with very different backgrounds

Change agents must find and maintain the proper distance from the groups they serve

The Organizational Change Process

- Change occurs in a somewhat predictable order (though the decision to change can occur earlier than shown)
- Organizational change frequently occurs via iterative steps, even when a clear end vision exists



Source: *The Corporate Culture Survival Guide*

The Role of Disconfirmation

In established cultures, change requires some powerful stimulus that disconfirms the current way of doing things

Disconfirmation can come from many sources

- The competition's performance
- Degraded reputation with customers or end users, loss of market share, reduced revenue or profit
- Legal challenges, trade sanctions, monetary penalties
- Internal performance objectives, annual goals
- Mergers and acquisitions, outside hiring of upper management
- Education, training, and benchmarking



A Battle of Anxieties

Disconfirmation creates *Survival Anxiety*, the fear that we will not succeed by following our current course

Then, when people consider change, *Learning Anxiety* is a natural result because they fear

- Temporary incompetence while learning new skills
- Temporary lack of productivity (and the potential consequences)
- Loss of identity or group membership
- Loss of influence

**Since disconfirmation can't always be controlled,
promote change by reducing learning anxiety instead**

Reducing Learning Anxiety

Learning anxiety can be reduced in many ways

- Obvious, continuous management sponsorship and support
- Clearly stated goals and expectations that allow for learning
- Consistency between what is promoted and what is rewarded
- Excellent training using a variety of formats
- “Sandboxes” where practice can occur without fear of severe consequences on real projects
- Use of coaches and mentors
- Peer groups for support and sharing



New vs. Established Competencies

New Competency

- Success is rewarded
- Failure is rewarded
- *Inaction is punished*

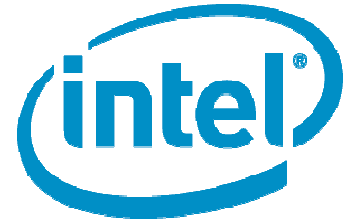


Established Competency

- Success is rewarded
- *Failure is punished*
- *Inaction is punished*



In a low-learning-anxiety environment, *it must be OK to fail but unacceptable not to try*



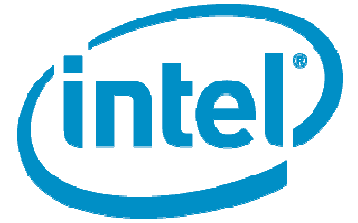
Three Foundation Practices of Change Agency

What We Will Cover

1. Evolutionary Delivery
2. Diffusion of Innovations
3. Influencing Skills

Caveat: These topics are broad and deep. In this tutorial, they are addressed in the context of change agency and only as an overview

This is not an exhaustive list; *anything* you have learned or will learn could be valuable to you as a change agent



Evolutionary Delivery

The best method for
managing change agency
projects

Why it Matters...

- Organizational change is often accomplished via **long-term projects with many stakeholders**
- Evolutionary Delivery (Evo) provides a way to **cycle early learning back into the project**, and emphasizes **real results from the start**
- Early **results build a change agent's credibility**, enabling faster progress and even greater results later
- Evo provides the **necessary flexibility to adapt** to changing circumstances on long projects



Evolutionary Delivery (Evo)

Evo:

- Is a program and project management process that emphasizes early learning and adaptation
- Is part of Competitive Engineering, along with *Planguage*, *Specification Quality Control (SQC)*, and *Impact Estimation*
- Uses a series of small steps to deliver useful results to stakeholders early and often
- Measures success by the value of results delivered rather than adherence to checklists and processes
- Has been practiced successfully for 30 years in various disciplines, and works exceptionally well on fast-paced, large projects

Evolutionary Delivery helps manage and optimize finances, deadlines, and delivered benefits simultaneously

Evo and PDSA

Evo embodies the **Plan, Do, Study, Act** cycle as taught by Shewhart and Deming



1. Plan a change or improvement
2. Carry out the plan
3. Study the results
4. Adopt the change, abandon it, or run through the cycle again

Evo Cycles

There are two types of cycle within Evo:

Strategic Management Cycle (the “head”)	Step identification, prioritization, sequencing, dependencies, evaluation vs. goals
Task & Delivery Cycles (the “body”)	Detailed step planning and execution, result measurement

The “head” of the project is defined up front, but even high level objectives can change based on stakeholder values and what the team learns about reality during the project

Task Cycles vs. Delivery Cycles

Evo relies on delivering value to stakeholders every one to two weeks using **Delivery Cycles**

But there are many things that take more than a week or two to complete; for this reason, Evo also contains **Task Cycles**

Use Task Cycles to prepare things for later rapid delivery in a Delivery Cycle – think of a restaurant's kitchen, for example

Don't abuse Task Cycles – you still must deliver results frequently to stakeholders

Defining and Planning an Evo Project

1. **Identify Stakeholders and Document Stakeholder Values**
2. **Specify top-level requirements** (*ends*, not *means*) that define success
3. **Generate design ideas** that can be accomplished in less than a few weeks:
 - 3.1 **Analyze** top-level requirements, stakeholder values, delivery order dependencies, and project scope
 - 3.2 **Find and specify design ideas** to meet the requirements based on RE best practices, research & development, experience reports, etc.
 - 3.3 **Evaluate the design ideas** against requirements using Impact Estimation
 - 3.4 **Repeat steps 1-3** until a reasonable balance between costs and requirements is achieved
4. **Select design ideas** and produce Evolutionary Delivery plan

Source: Adapted from *Competitive Engineering*



Executing and Managing an Evo Project

1. **Validate with stakeholders** that the chosen step is the correct next step
2. **Execute the chosen next step and capture the results**
3. **Review the results against planned results**, and assess the true value achieved against objectives
4. **Share the results** with stakeholders
5. **Revise the Evo Plan** as needed to reflect what was learned on this step – add, change, remove, or reorder steps if necessary
6. **Designate a next Evo step** based the updated plan and project objectives, and return to Step 1 until the project is complete

Periodically:

Revisit the stakeholder list to ensure it is complete

Revise objectives to ensure they are complete, current ,and accurate



Example Top-Level Requirement

ReqQuality: Improve requirements quality on project X.

Stakeholders: Requirements analysts, PM, QA, Finance

Scale: Total major defects per page remaining at time of requirements baseline.

Meter: Metrics from the Specification Quality Control process

Minimum: No more than 5 major defects per page

Target: No more than 3 major defect per page

Outstanding: Less than 1 major defect per page

Past [Sample of previous project's requirements]: 20 majors per page

Example Task & Delivery Cycles

- **TailorTraining:** Tailor generic training materials and create new materials as needed
- **Mentor:** Mentor authors on requirements specification best practices
- **Checklist:** Create one or more checklists to aid requirements reviews and pilot on another project
- **TrainSQC:** Train a team on the Specification Quality Control process
- **TrySQC:** Use Specification Quality Control on an intermediate version of the requirements document
- **SQCPolicy:** Educate management on the proper interpretation and use of requirements quality data & create a policy
- **QuantifyNF:** Select five important non-functional requirements and quantify them so that they are measurable



Example Step Specification

TrySQC: Use Specification Quality Control on an intermediate version of the requirements document

Type: Delivery Cycle

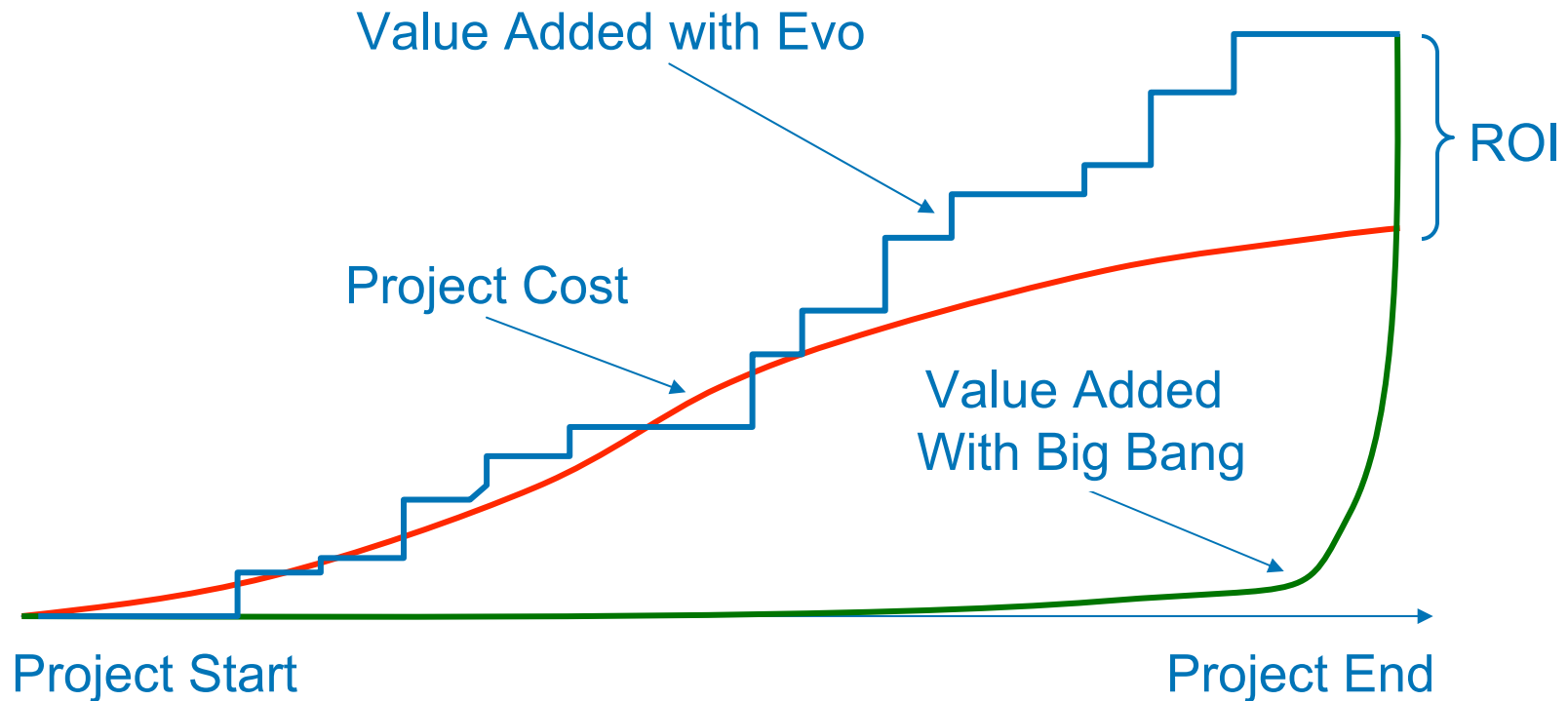
Dependencies: {TrainSQC, TailorTraining}

Step Content: Identify target document version, pick a small team from Project X to pilot SQC, shepherd the process, and perform a rapid retrospective on the process when completed

Step Value: [Project X team] Generate support for SQC; provide accurate baseline for current requirements quality; [PM] Observe and learn how to moderate the SQC process from an expert

Risks: Misuse or misinterpretation of early SQC data; process failure due to work prioritization issues on the team; poor opinion of SQC if this step fails

Evo versus the 'Big Bang' Life Cycle



Value usually comes late in the cycle for Big Bang projects; Projects using Evo deliver value (through results) early and often

Exercise: Brainstorm Task & Delivery Cycles

Working in small groups, **brainstorm possible Evo Task and Delivery Cycle ideas** for the top-level requirement on the following slide

- Be creative and have fun, but try to come up with a set of cycles that can provide some stakeholder with results *every couple of weeks*
- A sample set of stakeholder values is provided for you to consider (following the top-level requirement)
- If you have time, look at dependencies and sequencing issues, and try to come up with a draft Evo plan for the work

Be ready to share your results with the class at the end of the exercise

Exercise: Brainstorm Task & Delivery Cycles

TestTrace: Improve requirements traceability to test

Stakeholders: Validation, IT, management, project team

Scale: Percent of all requirements traced to test cases starting at requirements baseline

Meter: Assessment of a random sample of requirements on a semi-monthly basis

Minimum: 90%

Target: 95%

Outstanding: 100%

Past: [previous 2 projects, estimated]: 50%

Exercise: Brainstorm Task & Delivery Cycles

Some stakeholder values for you to consider:

Validation	Rapid results; data that accurately represents current state; ease of establishing and maintaining traceability to test cases
IT	Reduce the number of supported tools and vendors; minimize support costs; maximize end-user satisfaction
Management	Meet customer obligations & regulations; minimize outlays; simple, useful, accurate status reporting
Project team	Minimize disruption; meet requirements with smallest possible effort

Summary: Evolutionary Delivery

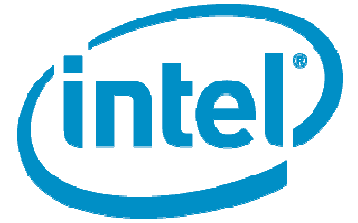
Design change agency projects so that they add value early and often
– *don't wait until the end to deliver results*

Evo relies on **PDSA, rapidly and repeatedly applied** so that early learning guides future actions

Focus on **stakeholder values**, and revisit them frequently since they change over time

Most **requirements engineering practices lend themselves to an evolutionary implementation approach**; while there are some dependencies, you have many choices overall

Evo ensures that requirements **engineering practices add immediate value to projects** without becoming an end unto themselves



Diffusion of Innovations

A vocabulary and structure
for change agency

Diffusion of Innovations

Diffusion of Innovations is “the process by which an *innovation* is communicated through *channels* over *time* to certain members of a *social system*.” – Everett Rogers

The Internet

New antibiotics

Improved seeds &
farming methods

Cell phones

PDA's

Dvorak keyboard

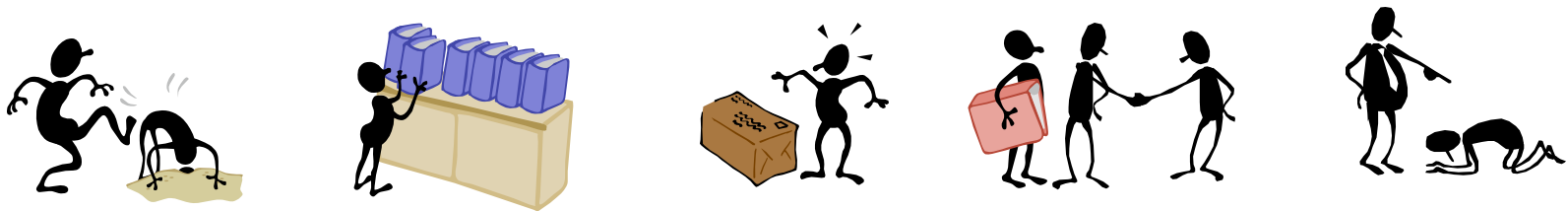
BETA format video

Why it Matters...

- Diffusion of Innovations (DOI) is a mature field of study that provides **vocabulary, models, and research results** that change agents can use for many purposes
- DOI aids change agency projects during **planning and execution**, enabling **risk assessment and strategizing** based on the particular attributes of the innovation itself
- DOI helps change agents **govern the rate and depth of adoption** for a new tool, practice, or skill

Models for Diffusion

- **People Mover:** Personal contact between the change agent and the adopter
- **Communication:** Use of “mass media” to communicate, rather than people
- **On-The-Shelf:** Innovation packaged by experts as a complete solution for non-experts to use
- **Vendor:** Outsourced innovation diffusion
- **Rule:** Imposed innovation from another source based on authority, often accomplished through policy or standards



The Five Innovation Attributes

Attribute	Description
Relative Advantage	Potential improvement to the current situation if adopted
Compatibility	How well the innovation fits with the culture and past practices of the organization
Complexity	How complex the innovation is to learn and use
Trialability	The degree to which the innovation can be sampled or tried in part
Observability	How visible the innovation is to other groups or individuals

Source: *The Diffusion of Innovations*

Innovation Attribute Examples

Relative Advantage: Reduced Time To Market, greater efficiency, cost savings, or improved quality; greater standing in the company, conformance to standards

Compatibility: Fit with existing processes; reuse of concept or vocabulary; new infrastructure required; fit with company culture

Complexity: Amount of training required before use; educational prerequisites; depth and breadth of information and mental models

Trialability: Feasibility, risks, and cost of partial or temporary implementation; degree that trial reduces uncertainty

Observability: Presence of tangible, intelligible results; breadth of results' application

Communication Channel Types

Mass Media

- Large group, Web, video, etc.
- Efficient way to *awareness*
- Less effective at persuasion
- Scales well



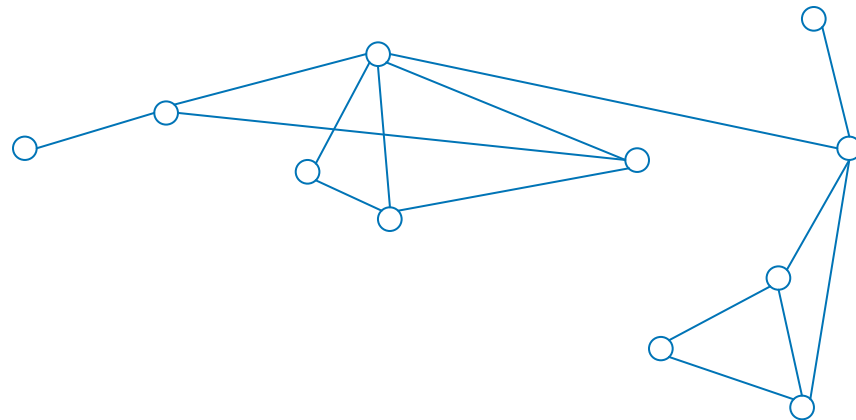
Interpersonal

- 1:1 or small group interactions
- An important source of data on an innovation
- Effective at *persuasion*
- Does not scale well

Networks

A **network** is “a pattern of friendship, advice, communication, or support that exists among members of a culture.” (Thomas Valente)

- Networks can be used to locate opinion leaders, who are good candidates for change agents or champions
- Networks can be pictured as sociograms



Source: *Network Theory of The Diffusion of Innovations*

Making Personal Networks More Innovative

To increase innovation, promote activities that bring people from differing peer groups together

- Open enrollment training courses (vs. intact team)
- Special topic forums
- Wiki websites and online communities
- Internal and external conferences
- Communities Of Practice
- Brown-bag lunch presentations
- Peer mentoring programs

What diffusion models do you see at work in these items?



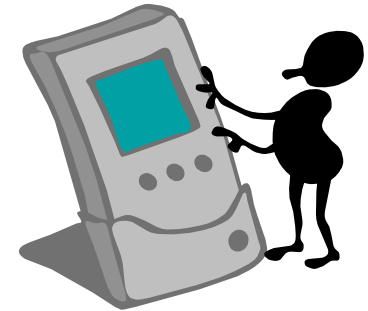
The Innovation Decision Process



Note: This order can vary, and steps are sometimes revisited or skipped

Adoption Decision Types

1. **Optional** innovation decisions made by an individual
2. **Collective** innovation decisions made by a group through consensus
3. **Authority** innovation decisions made by a few members of a group and imposed on others
4. **Contingent** innovation decisions that can be made only after another decision



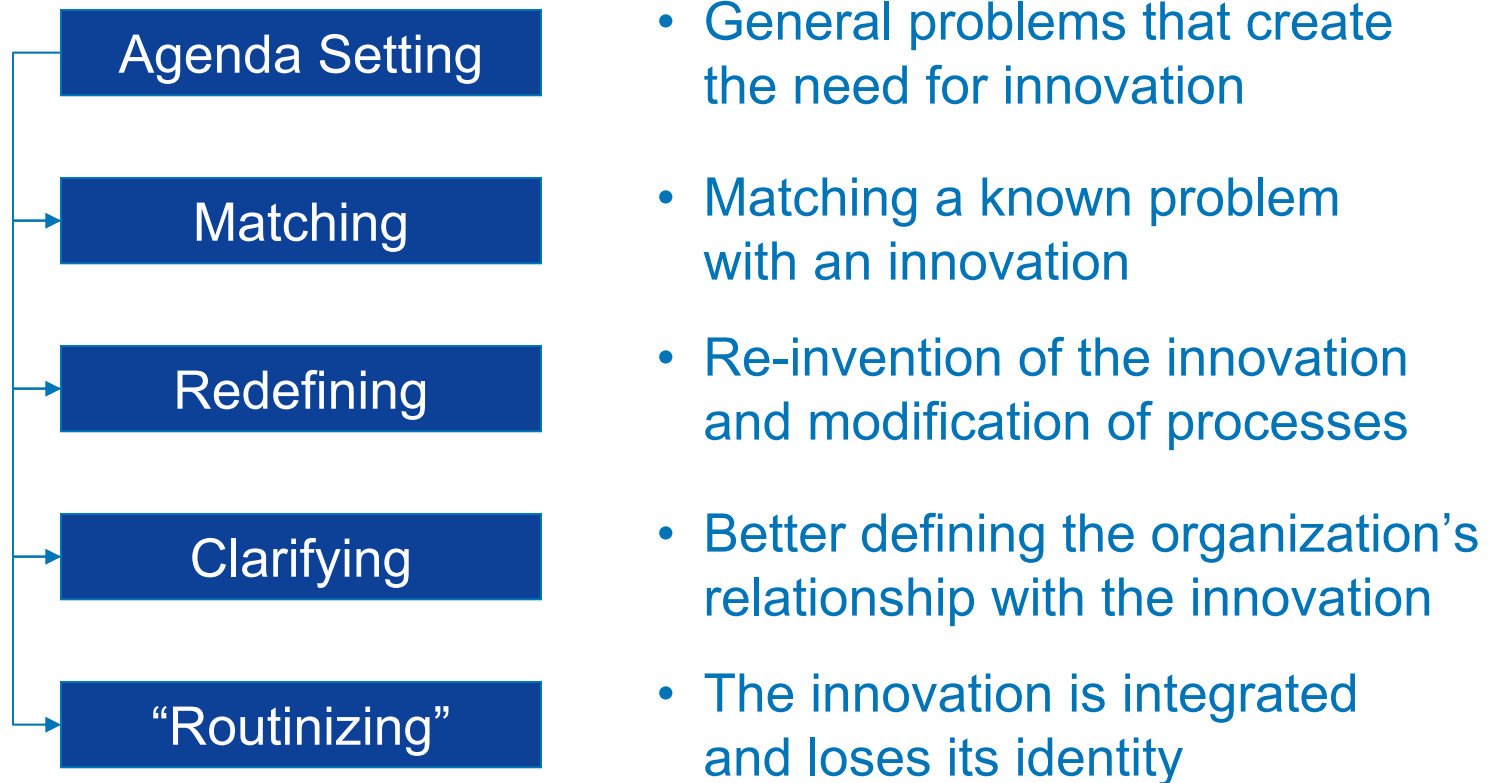
Decision type has a powerful effect on strategies and models to use for process improvement

Organizational Influences

- **Larger organizations** tend to be more innovative, probably due to greater resources, specialization, technical expertise, etc.
- **Decentralized organizations** are more innovative
- **Employee knowledge level and expertise** increases proposed innovations, but can prevent consensus decisions to adopt
- **Organizational slack** (availability of uncommitted resources) increases innovation
- **Organizational interconnectedness** increases innovation
- **Informality** around rules and procedures increases innovation

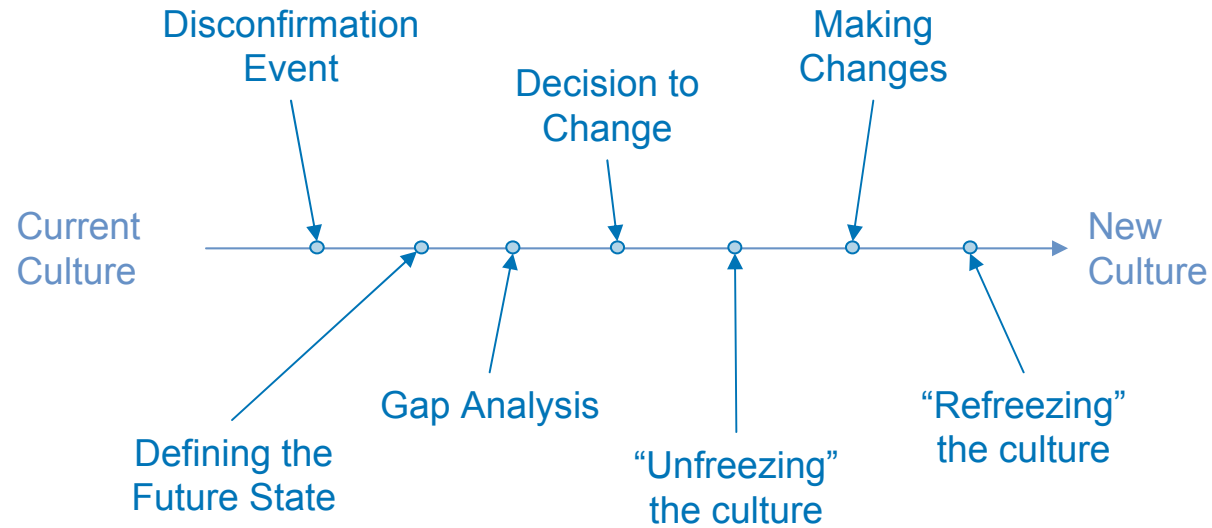
Organizational Innovation Decisions

Organizations use a slightly different innovation decision process than individuals

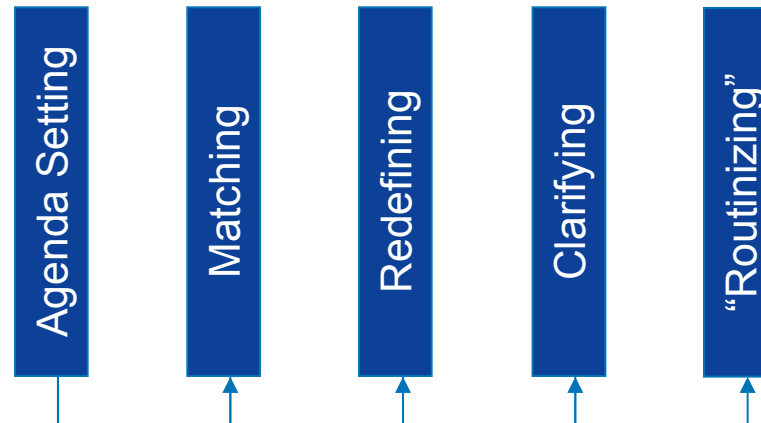


Two Models of Organizational Change

Schein:



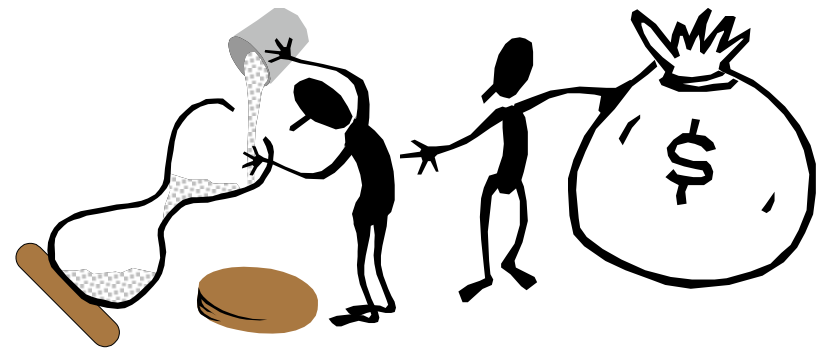
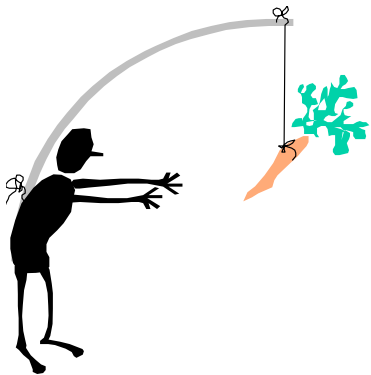
Rogers:



Adoption Incentives

There are many choices to consider when using incentives

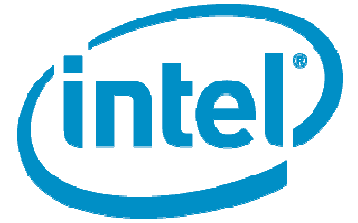
- Incenting the adopter versus change agent or champion
- Incenting individuals versus groups
- Positive versus negative incentives
- Monetary versus non-monetary incentives
- Immediate versus delayed incentives



Exercise: RE as Innovation

Working in small groups:

1. Apply the five innovation attributes (relative advantage, compatibility, complexity, trialability, observability) to requirements engineering. How does RE fare as an innovation? Remember to consider both individual and corporate perspectives...
2. Discuss previous efforts that members of your group have made to improve RE. Try to use the vocabulary and structure presented in this section, such as diffusion models and adoption decision types. What has worked well for you, and why?



Influencing Skills

Change agent
communication
tactics and skills

Why it Matters...

- Change agents frequently **rely on influence** to get things done
- Even when authority exists, **lasting change is often accomplished one-on-one** or in small groups
- Because of this, **better influence skills will improve change agent effectiveness**

Influence

Influence tools fall into these general categories

- **Reciprocity**: the desire to return a favor
- **Commitment and Consistency**: The need for a consistent image of ourselves
- **Social Proof**: Judging proper behavior assessing the behavior of others
- **Likeability**: The degree to which we like or relate to a person
- **Authority**: The professional reputation or granted authority of an individual
- **Scarcity**: A limit to the availability of something

Source: *Influence: The Psychology of Persuasion*

Reciprocity

People naturally wish to reward a good deed done for them

- Change agents can leverage this tendency by assisting someone with something, then asking for cooperation in return
- Reciprocation also applies to concessions

Examples:

- *Favor:* Assisting an individual with a requirements activity, then asking for a personal introduction or invitation to a meeting
- *Concession:* Offering a full suite of RE classes (which are declined), followed by a request for a single training and work session on the same topic

Commitment and Consistency

Most people have a strong urge for consistency - it helps them identify who they are

- By shaping this view, we can change the individual's beliefs
- Public commitments have very high leverage

Examples:

- An application for software quality award can be used to enlist a group's support for RE process improvement later on - it's *who they are*
- Once a group has decided to pursue better RE, their opinion of the activities and potential benefits will improve even though nothing else has changed

Social Proof

We use social influence heavily in our decision making;
this is a valuable, time-saving heuristic

- By observing what others do - especially successful rivals - we can ease our learning process
- Change agents can exploit social proof to convince others to adopt a behavior, tool, etc.

Examples:

- Once a significant percentage of a company adopts RE, social proof works to rapidly expand adoption
- Change agents are frequently asked “who else has done this?” before engagement decisions are made

Likeability

Individuals will say “yes” more often to people they like

- Likeability comes from past relationships, similarities or frequent contact with those we seek to influence, cooperative gestures, and even simple compliments
- Look for cultural clues, dress code, social customs, and publicly available information about a person to establish similarity

Examples:

- A change agent gets agreement to improve RE from colleagues in her old business unit
- A change agent converses with influence targets to find common history, hobbies, etc.

Authority

Authority comes in many forms, including position, title, degree, or experience

- An outside consultant often has greater authority than a company employee, even when presenting the same message
- Authority operates consciously and subconsciously in almost any situation, and is powerful in either form

Examples:

- Change agents can gain authority by increasing their status within industry, writing books, etc.
- A General Manager who has been promoted after accumulating experience in RE can use both positional and experiential authority to influence others

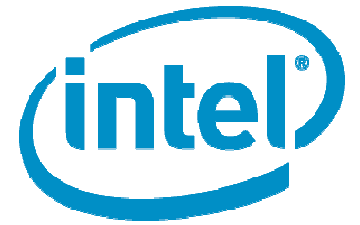
Scarcity

Scarcity causes an object's desirability to increase by invoking someone's fear of losing choices

- Quality and function are secondary issues in most cases; the primary desire is to *possess* the object rather than experience it

Examples:

- A limited number of RE experts that book engagements at the beginning of the year, influencing customers to commit quickly
- A group desires to learn about a new process or tool before it becomes widely known because it promotes feelings of exclusivity and prestige



Business Practices

The Opportunity

A small team of change agents can have a large positive effect on an organization if they

1. **Work on business unit problems**, not their own agenda
2. **Prioritize opportunities** to ensure they are addressing the most important needs first
3. **Emphasize knowledge transfer** for self-sufficiency
4. **Have a clear exit strategy** for each engagement

Funding Models

Two models for funding RE improvement: Free service and integrated headcount

1. **Free service:** Work is performed at no cost to the requesting group by people funded out of a methods group, based on some algorithm to determine need and priority
 - This model allows for placements within groups not yet sold on the benefits of requirements engineering – no financial risks to them
 - At least a few people must to be funded internally by the RE improvement group to provide management functions and vital research and development work on methods, practices, and curriculum

Funding Models

- 2. Integrated headcount:** Employees are owned by the group wanting work, but hired and managed by the RE improvement team
- Permits rapid growth into new groups and improves commitment to the work, while limiting chances that resources are moved to “more important work” during the project
 - Requires enough buy-in from groups so that an integrated position is allocated to the RE improvement group

These two funding models can be effectively combined in one organization

A General Business Model for Change Agency

1. Resources are allocated and reallocated to projects based on **defined prioritization criteria** using a **portfolio management approach**
2. Projects are planned, managed, and executed according to principles of **Competitive Engineering** and **Diffusion of Innovations**
3. Change agents **work directly with teams** using the People Mover model, assisted by other models as needed
4. Every engagement has **knowledge transfer** and the business unit's **self-sufficiency** as goals
5. Every engagement must have a **statement of work, success criteria**, and documented **exit strategy**

For More Information

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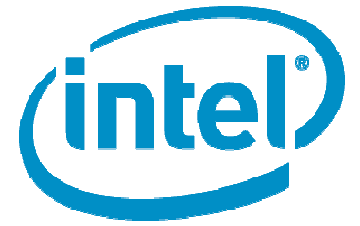
Influence Skills

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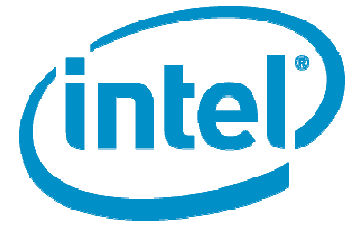
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Questions?



Backup

What is Organizational Change?

Organizational Change *IS*

- A disruptive force
- A creative force
- Uncomfortable for many people
- Effective, organic adoption of practices
- Essential for sustained success

Organizational Change *IS NOT*

- Simple
- A transitory event or “program”
- A goal unto itself

Leadership vs. Management

A change agent may be called upon to lead change or to manage it; these are very different activities

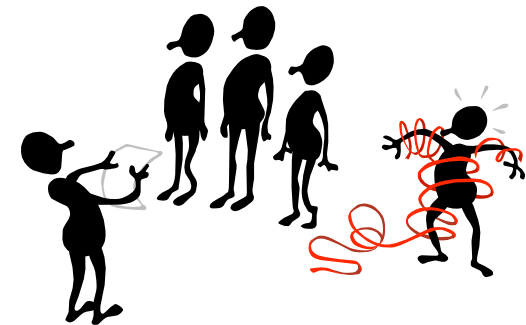
Leadership

- Direction setting (vision)
- Communicating & Aligning
- Motivating and inspiring

≠

Management

- Planning & budgeting
- Organizing & staffing
- Problem solving



Source: *A Force for Change: How Leadership Differs from Management*

Cultural Evolution vs. Transformation

Cultures change via **evolution** and **transformation**

- Cultures evolve continually based on new experiences, new people, and external forces
- Cultural evolution can be influenced, but not totally controlled
- Transforming a culture requires that we disrupt the status quo

Organizational culture is a result of the company's past successes as well as failures, and should be treated carefully - *it is a source of strength*

Elements of a Culture - Part 1

Basic Issues

1. Mission, vision, strategy, etc. - *Who are we?*
2. Org structure, processes, etc. - *How do we work?*
3. Metrics and measurement - *What defines success?*
4. Language and concepts - *How do we communicate?*
5. Group membership - *What is my community?*
6. Leadership and authority - *Who is in charge here?*
7. Rewards and status - *What is promoted and incented?*

Elements of a Culture - Part 2

Deeper Assumptions

1. What is our relationship to the outside world?
2. What is real, and what is true?
3. What do we believe about human nature?
4. What kinds of human relationships do we foster?
5. How do we think about time and space?

Learning About A Culture

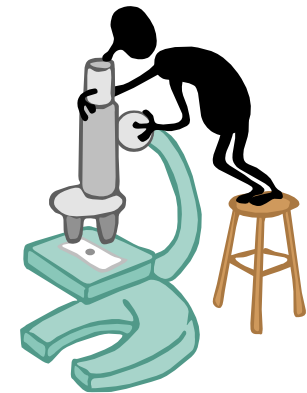
The best way to understand culture is through group activities, since culture is a group phenomenon

But, the shared tacit assumptions of a culture are difficult to expose even in structured group discussions

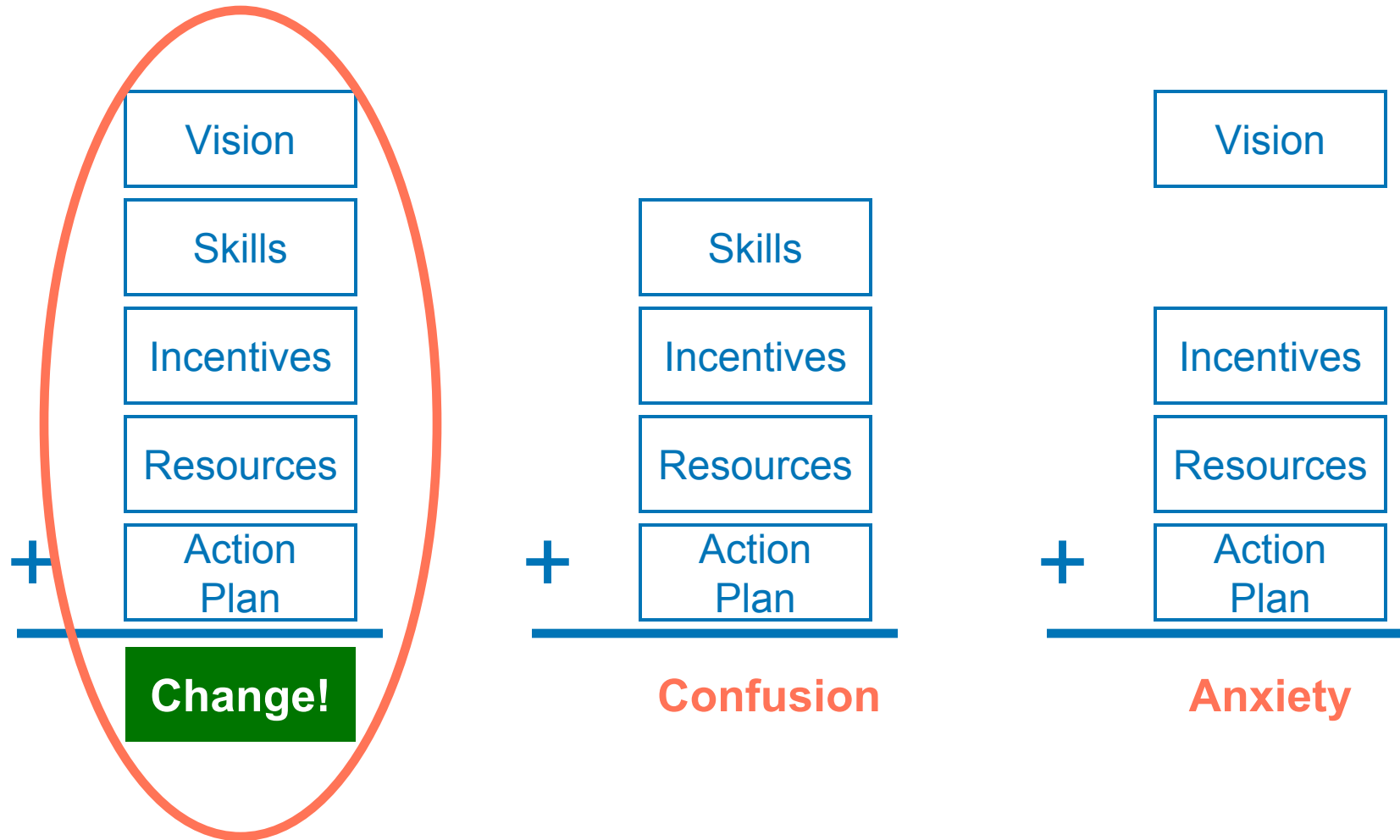
These tacit assumptions influence all other elements of the culture and the organization



Use a multi-faceted approach to understanding a culture...

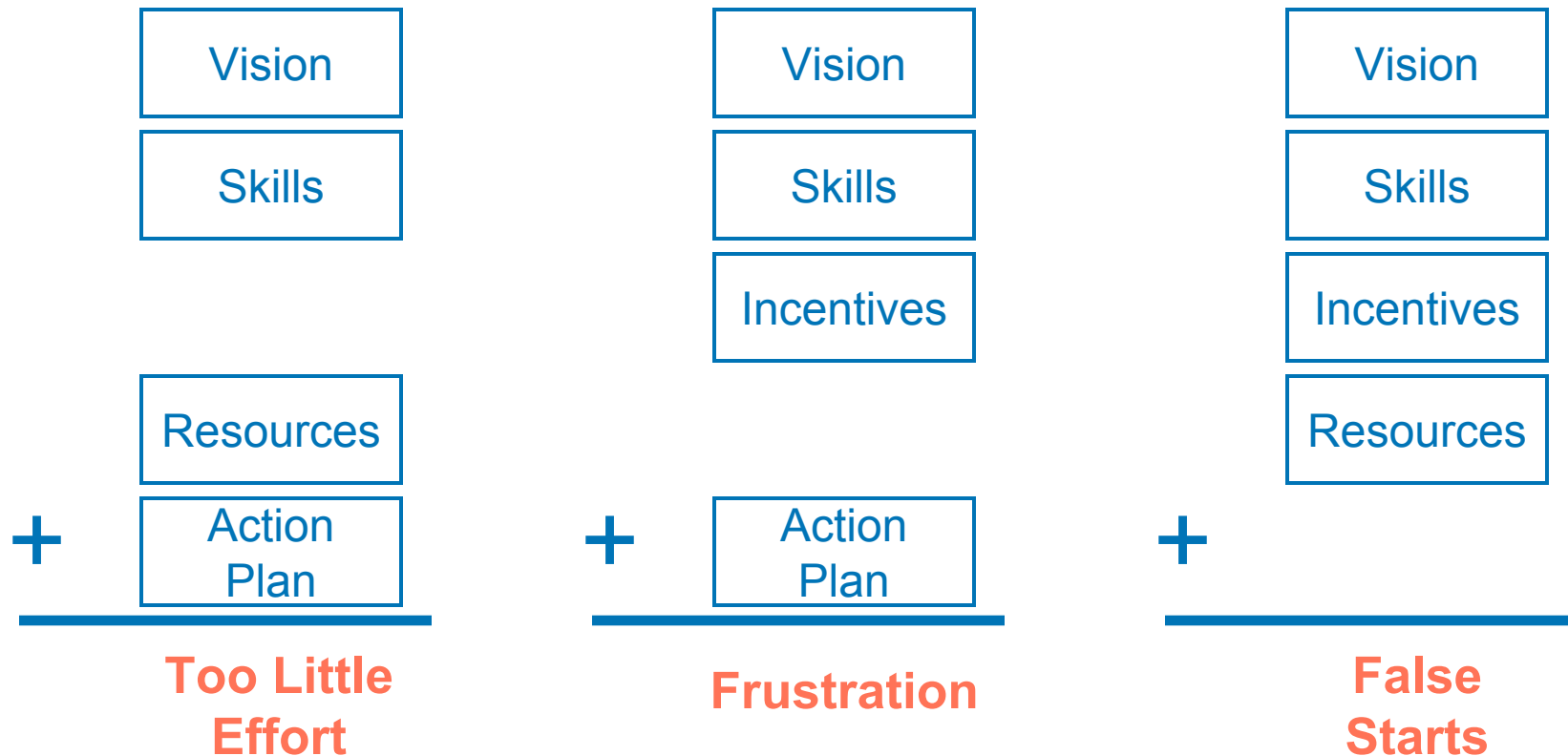


Equations of Change



Adapted from American Productivity & Quality Center 1993 The Change Management Toolkit for Reengineering, Executive Overview 1994

Equations of Change



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Specifying Success Criteria

Project success criteria must be measurable and commonly understood by all stakeholders

In some cases, you will have to rely on indirect or surrogate measures as criteria

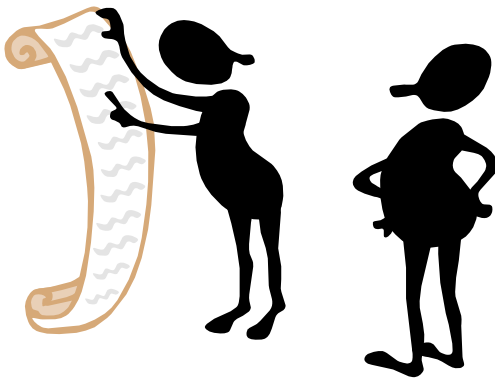
Most success criteria are not Boolean, but rather measure success over some interval

Use best practices from requirements engineering to establish clear, measurable success criteria

Specifying Success Criteria Using Planguage

Planguage is an informal but structured keyword-driven planning language created by Tom Gilb

- Planguage is very well suited to specifying success criteria for projects
- Its strengths include ease of learning and its ability to create measurable, concise statements



**Planguage aids
communication about
complex ideas**

Planguage for Success Criteria

Planguage has an assortment of keywords. For most success criteria, a subset will do

Ambition: A description of the success criterion

Scale: The scale of measure used to quantify the statement

Meter: The measurement process used to establish location on a Scale

Minimum: The minimum level required to avoid political, financial, or other type of failure

Target: The level at which good success can be claimed

Outstanding: A stretch goal if everything goes perfectly

Wish: A desirable level of achievement that may not be attainable through available means

Continued...

Planguage for Success Criteria

Past: An expression of previous results for comparison

Trend: An historical range or extrapolation of data

Record: The best known achievement

Fuzzy concepts requiring more details: *<fuzzy concept>*

Qualifiers (used to modify other keywords): *[when, which, ...]*

A collection of objects: *{item1, item2, ...}*

The source for any statement: ←

Many other keywords exist for special situations; Use the keywords that make sense in the context of the project!

Success Criteria Categories

There are several success criteria categories to consider

1. Reaction and Satisfaction
2. Knowledge and Skills Transfer
3. Application and Implementation
4. Business Impact
5. Financial Benefits & ROI
6. Intangible Benefits

For categories 1-5, higher is generally better – but always measure intangible benefits in addition to the others

Adapted from *The Consultant's Scorecard*, Jack Phillips