Applied Facilitation (F102)

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Templates

QuickTips

Charter for a Facilitated Session

Instructions

The purpose of the charter is to get agreement on high level expectations among the main sponsors and the facilitator of a session. The facilitator should use this charter template to guide the discussions and document the agreements. Do this at the very beginning, when first discussing the possibility and need for facilitation. Make sure that everyone reads and buys into the final charter document.

Name of this facilitation:
Purpose: why is it important for us to hold this session(s)?
Specific deliverables: what specific things do we want the group to produce by the end of the facilitation?
Timeline: list desired completion date and dates of any key milestones.
Roles and effort: who will fill which roles, and how much work is it expected to take? (facilitator, participants, meeting assistants, facilities contacts, etc)
Reporting: who will be kept informed about progress during preparation, during the session, during follow-up, and after completion? How often and how?

Name of this facilitation:
Success measures: what are the specific measurements we will use to determine how well the session met its objectives? When will we make those measurements?

Facilitation Assessment Template

Instructions

The purpose of the assessment template is to help the facilitator and participants to gather and assess relevant information that will affect the design of the facilitated session. Some questions are suitable for discussion directly by the participants, while the facilitator may wish to keep others private.

About the Participants

1. How well do they know each other?

2. What have they worked on together in the past and what were the dynamics of that working relationship (e.g. degree of conflict, teamwork, risk-taking, or communications)?

3. What are the relevant skills and knowledge of each participant?

4. To what extent will the participants be working together after this event?

About the Problem to be Solved

1. What are the issues or problems that the participants will tackle?

2. What has been done so far?

About the Organizational Context

1. What pressures or expectations from outside the group are likely to affect this facilitation?

2. What aspects of organizational culture and norms are likely to have a significant influence?

3. What authority structures exist both inside and outside of the group that will affect participants' ability to communicate openly and make immediate decisions?

Group Context

1. What personality styles or expected norms, both for individual participants and for the group as a whole, are likely to affect how people behave during the session?

2. What are the apparent strengths and weaknesses of the group related to the topic of this facilitation?

3. What is the group's developmental stage according to Tuckman's model?

4. Does the group typically prefer a high context or low context interaction style?

5. To what extent do participants prefer task vs. process orientation?

Facilitator's Assessment

How should the facilitation be designed to accommodate the situation described in this assessment? Consider specific facilitation techniques to use, pitfalls to watch out for, and topics to include in the agenda (including ordering and time allocation).

QuickTip - Visioning

Visioning is a highly participative approach to developing a shared description of a desired future state.

When to Use

Use this technique when the group must identify and get alignment on a goal. It helps participants clarify their thoughts, put forward their ideas, and hear perspectives from everyone. It increases buy-in to the future state because the group's direction is coming from all of its members. Visioning often creates a high energy level in the room.

Procedure

1. Identify the area at hand, for example, patient satisfaction. Pose a series of questions about what participants desire that area to look like at a point in the future. For example, "Two years from now, how are front office employees behaving differently when they interact with customers?" or "What problems have we solved in order to reduce patient waiting times?"
2. Ask each participant to silently write responses to the questions.
3. Ask each participant to partner with someone they work with the least, or who has a significantly different area of expertise. One person in the pair shares their vision for three to five minutes, then they switch and the other person shares.
4. When time is up, have participants switch partners and repeat, but for a shorter time. Encourage participants to incorporate good ideas they have heard during previous rounds. Continue this for as many rounds as desired but limit each round to 1 – 3 minutes per person to nudge participants to prioritize sharing key points. It is not necessary to do so many rounds that everyone speaks to everyone else.
5. Have the group gather back together. Facilitate a discussion to consolidate the ideas that emerged during the rounds. Typically, by this point there will be a lot of commonality.

Considerations

1. This technique involves everyone. It is a good way to involve quiet voice and minority opinions.
2. It may be helpful to describe the current state at the start of the exercise, before starting to get the group working on the desired future state. For example, if the topic is customer satisfaction, summarize data on the current level of satisfaction, major reasons for dissatisfaction, and trends or changes. This will help the participants generate more informed ideas, especially if they are not personally deeply familiar with the area.
3. Think carefully about what initial questions to pose, since they influence the direction of subsequent conversation. However, don't require that people stick to those questions.
4. Encourage people, as they go through the rounds, to incorporate good ideas they hear into their own vision for the next round.

QuickTip - Brainstorming

Brainstorming is a method for generating many creative ideas in a short period of time, making it a divergence activity. Participants call out their ideas as they think of them, so that each person has an opportunity to build on the ideas of others.

The goal of brainstorming is to stimulate creative thinking. Follow these guidelines:

1. Don't criticize or evaluate the ideas – just record all of them
2. Encourage wild ideas
3. Hitchhike – combine, modify, and build new ideas on the ideas of others
4. Encourage quantity

When

Use brainstorming when:

1. When a broad range of options is desired.
2. When creative possibilities and ideas are needed.
3. You need to capture input from a variety of people

How

Review the guidelines of brainstorming (above) with the entire group. The leader ensures that the group understands the objective of the brainstorming session and the process to be used, then presents the situation in the form of a question. The question should use wording that encourages specific, tangible ideas, not opinions or vague concepts. Often it is best phrased as a "why," "how," or "what" question.

Then use one of the following brainstorming procedures.

Free Wheeling

1. Allow several minutes of silence for everyone to think about the question, then start the brainstorming.
2. Group members call out ideas spontaneously.
3. Facilitator or scribe records ideas as they are suggested.

Round Robin

1. Allow several minutes of silence for everyone to think about the question.
2. Facilitator asks each member in turn for an idea.
3. Facilitator or scribe records ideas as they are suggested.
4. Participants may pass on any round.
5. Session continues until everyone has passed during the last round.

Slip Method

1. Facilitator asks participants to write down their ideas individually. There is no group interaction.
2. The ideas are collected and organized.

Technique	Pro	Con
Free Wheeling	• Spontaneous • Most creative results • Encourages ideas built on input from several people	• Loudest participants may dominate, discouraging quieter people • Can get confusing, resulting in lost ideas
Round Robin	• Involves participants more equally • Tends to focus discussion • Allows ideas built on input from several people	• Some loss of energy while participants waiting for turn • Less able to build on ideas from others • Reluctance to pass when out of good ideas
Slip Method	• Anonymity allows sensitive topics to surface • Can be used with very large groups • Gathers ideas from quiet participants	• Not interactive - can't build on ideas of others • Difficult to clarify or get context for ideas • Slower

Tips

1. Record ideas where everyone can see them during the session to encourage building on them.
2. Judgment and creativity cannot occur simultaneously. That's the reason for the rules about no criticism and no evaluation.
3. Record ideas on flip charts or large pieces of paper. When ideas overflow to additional flipchart pages, post previous pages around the room so all ideas are still visible to everyone. If you write directly on a whiteboard you will have to do a lot of copying after the session (or take a photo).
4. Encourage unconventional thinking. Crazy ideas often come from a different perspective and can lead to great solutions by sparking someone's imagination.
5. If brainstorming will be followed immediately by an affinity exercise, consider recording the brainstorming ideas directly onto cards or stickies.
6. You can "seed" ideas by taking a few minutes at the start for each participant to write down some initial ideas that he can throw into the session at the appropriate time.
7. The skill of the facilitator has a large influence. Practice or call in an expert.
8. For large groups, have a facilitator AND one or more scribes so that the rapid flow of ideas is not impeded.
9. The scribe should try not to rephrase ideas. If an idea is not clear or is too long to capture, ask the person who suggested to rephrase it in a way that can be recorded and that everyone can understand.

10. Karl Albrect's *Brain Power* suggests phrases that the facilitator can use to spur ideas. "How can we: "
    a. put to new uses
    b. adapt
    c. find similar things
    d. magnify
    e. eliminate
    f. make smaller
    g. substitute
    h. rearrange
    i. combine
    j. blend

For further information, see the ASQ article on brainstorming at http://asq.org/learn-about-quality/idea-creation-tools/overview/brainstorm.html

Excerpted from Synergy's Project Tools and Techniques Guide, p. 11-13, rev. 201022

QuickTip - Nominal Group Technique (NGT)

Nominal group technique (NGT) is a structured method for group brainstorming that encourages contributions from everyone. See the Brainstorming article for tips and other variations.

When to Use Nominal Group Technique

- When some group members are much more vocal than others.
- When some group members think better in silence.
- When there is concern about some members not participating.
- When the group does not easily generate quantities of ideas.
- When all or some group members are new to the team.
- When the issue is controversial or there is heated conflict.

Nominal Group Technique Procedure

Materials needed: paper and pen or pencil for each individual, flipchart, marking pens, tape.

1. State the subject of the brainstorming. Clarify the statement as needed until everyone understands it.
2. Each team member silently thinks of and writes down as many ideas as possible in a set period of time (5 to 10 minutes).
3. Each member in turn states aloud one idea. Facilitator records it on the flipchart.
    - No discussion is allowed, not even questions for clarification.
    - Ideas given do not need to be from the team member's written list. Indeed, as time goes on, many ideas will not be.
    - A member may "pass" his or her turn, and may then add an idea on a subsequent turn.

    Continue around the group until all members pass or for an agreed-upon length of time.

4. Discuss each idea in turn. Wording may be changed only when the idea's originator agrees. Ideas may be stricken from the list only by unanimous agreement. Discussion may clarify meaning, explain logic or analysis, raise and answer questions, or state agreement or disagreement.
5. Prioritize the ideas using multivoting or list reduction.

Nominal Group Technique Considerations

- Discussion should be equally balanced among all ideas. The facilitator should not allow discussion to turn into argument. The primary purpose of the discussion is clarification. It is not to resolve differences of opinion.
- Keep all ideas visible. When ideas overflow to additional flipchart pages, post previous pages around the room so all ideas are still visible to everyone.
- See brainstorming for other suggestions to use with this tool.

Excerpted from Nancy R. Tague's *The Quality Toolbox*, Second Edition, ASQ Quality Press, 2004, pages 364–365.

Retrieved from http://asq.org/learn-about-quality/idea-creation-tools/overview/nominal-group.html on 9/2/15

QuickTip - SWOT Analysis

SWOT analysis is a popular tool for situational analysis. SWOT is an acronym for "strengths, weaknesses, opportunities, and threats." It looks at both internal and external factors (figure 1).

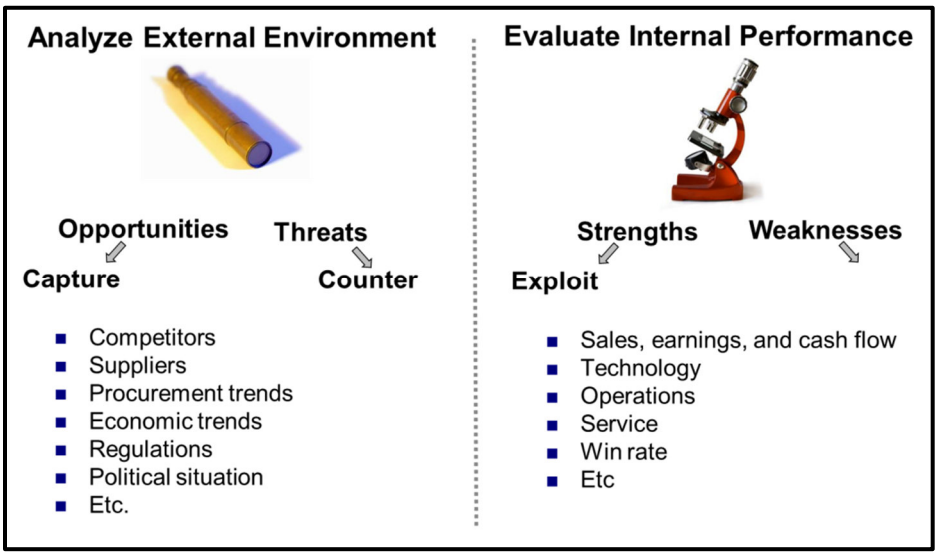


Figure 1: SWOT does internal and external analysis.

The external analysis examines both opportunities and threats from factors such as competitors, suppliers, economic trends, and regulations. Then it looks for ways to take advantage of (capture) the opportunities and counter the threats.

The internal performance analysis looks at the organization's strengths and how to exploit them, as well as weaknesses and how to mitigate them. Examples of internal areas to evaluate are financial performance, development capabilities such as engineering expertise, technology, and service and operations capabilities.

All of this gives a good understanding of the current state of the organization, as well as some ideas on how to change that state to get to the desired state.

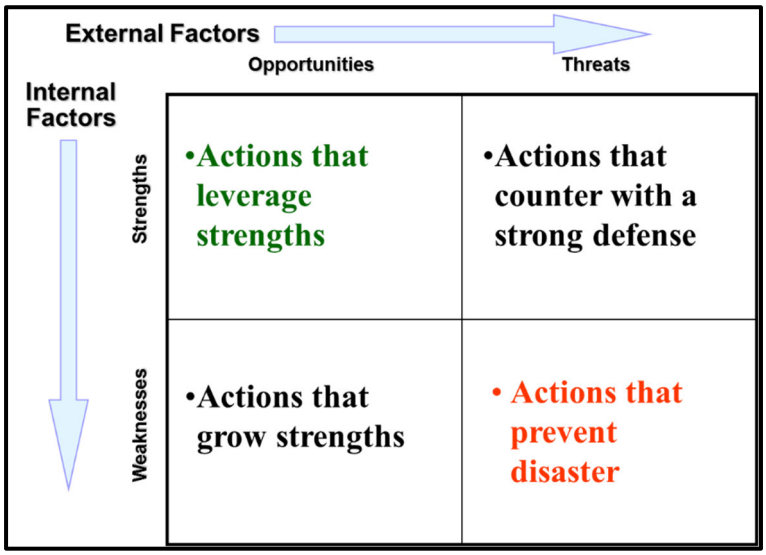


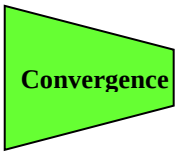
Figure 2: Develop actions based on SWOT analysis.

The strongest strategic actions emerge from external opportunities that intersect with an organization's internal strengths (upper left quadrant of figure 2). These are chances for an organization to "lead the charge," moving forward as a leader leveraging its strengths.

The most dangerous situations for an organization are in the lower right quadrant, where external threats intersect with internal weaknesses. This puts the organization in a defensive position right where it is weak.

Source: *Strategic Planning* lecture

QuickTip - Affinity Clustering



What

An affinity diagram is an information organizing tool. It promotes creative synthesis by asking a team to identify and group similar items from a large list of possibilities. The resulting structured information can then be used in further convergence activities such as ranking and rating. Affinity clustering is often paired with a preceding divergence activity that generates many raw possibilities, like brainstorming.

When

- You need to clarify or structure a large mass of information
- The problem is complex and difficult to understand
- You need to decide which ideas or information are important to the problem
- The problem requires or benefits from involvement of a group

How

Before the session, write each of the ideas on a small "sticky" (sheet of adhesive note paper). Often, this has already been done during a brainstorming session. Place all of the stickies in random order on a large, accessible surface such as a wall or table. If the ideas haven't been discussed recently, the team may need time to re-read them.

The team members silently arrange the ideas into similar clusters (affinity clusters) by moving the stickies. If a team member does not agree with the positioning of a sticky, he can move it into another cluster with which it has a stronger affinity. No communication is allowed, since this might limit thinking on possible affinities.

This repositioning continues until the affinity clusters have solidified. Then the facilitator asks members to explain why they organized the ideas into these clusters. What makes the items in a cluster similar, and how do they differ from other clusters? These discussions may cause further rounds of repositioning.

After the team agrees on characteristics of each cluster, label and describe them. Examine the relationships between clusters to reveal underlying structure of the problem.

Tips

1. Draw a "parking lot" in a section of the work area. If people repeatedly move a specific sticky, this indicates an important disagreement that should be discussed later. Move the contentious sticky to the "parking lot" for discussion after the silent clustering is done.
2. Do not label the clusters until after the team completely agrees on grouping. Prematurely labeling emerging groups will limit the teams thinking.
3. The team may want to talk during the positioning. Discourage communication until the clusters have taken shape and the change rate is low. At that point, there may be some left behind or parking lot stickies that need to be discussed.

QuickTip - Fist to Five

To use this technique, the facilitator restates an action the group might take and asks the team to show their level of support. Each team member responds by holding up a closed fist or the number of fingers that corresponds to her level of support. If a team member holds up fewer than three fingers, she is given the opportunity to state her questions, objections, or recommendations for improvement. Then the team may respond, modify the idea under discussion, or generate new ideas.

This encourages several positive behaviors that may lead the team toward a higher quality decision.

- Dissenters make a case for their position to the rest of the group.
- Proponents hear and consider differing points of view.
- Everyone works together to make the proposal better.
- Reduces the chance that silent disagreement later leads to lack of support or sabotage of the course of action.

The facilitator continues the fist to five process until the team achieves consensus (everyone holds up three or more fingers) or agrees to move on to the next issue.

Closed fist - No. A closed fist is a way to block consensus.

1 finger - I have major concerns that could potentially be addressed.

2 fingers - I would like to discuss some minor issues or get more information.

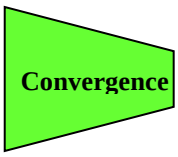
3 fingers - I'm not in total agreement but I feel comfortable enough to let this proposal pass without further discussion.

4 fingers - I think it's a good idea and will work for it.

5 fingers - It's a great idea and I would like to take the lead when we implement it.

Definition modified from an entry on the agile-focused site whatis.com., which was retrieved 7/3/17 from http://whatis.techtarget.com/definition/fist-to-five-fist-of-five

QuickTip - Multivoting



What

Multivoting is a way to quantify the positions and preferences of a group by allowing each member to decide how much an option is worth to him. Each member's votes are recorded, but a decision is not necessarily reached. Multivoting gives the group information about where individual members stand and the strength of their positions. The votes are used as a springboard for identifying consensus, surfacing disagreements, and identifying the size of gaps.

When

- "Taking the temperature" of a group as it is moving toward agreement.
- Identifying areas of disagreement, misunderstanding, or differing priorities.
- There are fewer than ten options under consideration.

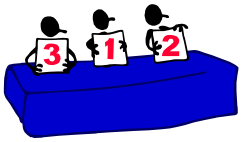
How

Set up a grid of names and options on a flip chart. Give each member a number of votes to distribute across the options according to their preferences. Members distribute their votes across the options to indicate their relative preferences. Use these voting guidelines:

	A	B	C	D
Tom	3	1	1	1
Mary	1	1	2	2
John	1	1	3	1
Karen	1	1	2	2

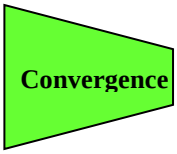
- Encourage members to spread their votes across all options to express their relative feelings about all of them. Don't lump all votes on a single favorite.
- Each person should decide how to distribute votes before recording them on the chart, to avoid being influenced by how others vote.
- Ask for and record votes by option, not by person. For each option, members should vote simultaneously by raising fingers, showing a scorecard, or similar method.
- Allow votes of "zero" only when a person can't live with that option.

Tips



1. The number of votes available to each member should be about 1.5 times the number of options.
2. The biggest value of multivoting is the discussion that follows. Facilitate a discussion of large gaps, extreme positions, and area of agreement.
3. A variation of multivoting is "red dot" voting. All options are listed on a flipchart. Members have adhesive "dots" corresponding to their votes. All members simultaneously distribute their dots next to the options. The resulting visual cluster gives a picture of the group's preference for each option. The method is fast and works well with a large group, but does not allow follow up discussion on individual disagreements because individual votes are not recorded. Thus it is good for fast sensing of the temperature, but less effective at closing gaps and building commitment.

QuickTip - Decision Grid



What

A decision grid (aka rating) helps select the best option from several defined choices. The options are evaluated on important criteria. For example, a decision grid can be used to help a car purchase decision by rating alternative car models on important features like safety, gas mileage, performance, and styling. Criteria can be treated equally or given weights relative to each other – for some people styling is twice as important as anything else. Often the chief value of a team rating exercise is in the discussion and prioritization that it encourages rather than in the absolute point winner.

This sheet describes a simple rating system that is sufficient for many uses. There are more sophisticated methods of weighting priorities and rating options, such as used in QFD.

When

- Selecting the best option from several well-defined choices
- Making priorities and feature comparisons explicit

How

Decide which criteria will be used to rate the options. They should reflect the essential features desired in the solution. Clearly define them and determine what weights, if any, should be assigned. If this is complicated or contentious, use a separate technique such as pair wise analysis or weighted voting to determine the criteria.

Name and clearly describe each of the options to be evaluated so that participants have a thorough understanding. Create a rating matrix with option names on one axis and criteria on the other. Define a rating scale that clearly defines the possible rating values.

As a group, rate the performance of each option against all criteria by entering a value into every cell in the matrix. It may be difficult to reach consensus on a value, indicating either a need for further research or for a decision, depending on the situation. Use an appropriate tool to get the needed information (e.g. research) or decision (e.g. voting).

Tips

1. Start filling in the matrix by rating an item that is not contentious and is on one extreme of the rating scale. This will serve as an “anchor” for other ratings.
2. Rate all options on a particular criterion before going to the next criterion.
3. Encourage a spread in the ratings. If most ratings are a middle value, it will be difficult to distinguish between the options.

4. It is normal to discover part way through the process that a previous weighting, criterion, or rating should be changed. This may indicate legitimate new understanding but be careful of a subtle bias to get the preferred answer.
5. Define criteria and ratings such that desirable ratings convert to consistent numbers on the scale. For example, if you are rating on a scale of one to five, don't define criteria so that lowest (best) cost is rated a one and highest (best) performance is rated a five.
6. Small differences in rating totals may not be significant. Don't be tempted to assign too much precision to the values.

Criteria	Weight	Options			
		Ferrari	Taurus	Miata	Lumina
Performance 5 = highest					
Best Cost 5 = lowest					
Safety 5 = safest					
Availability 5 = immediate					
Total					

QuickTip - PICK Chart

A PICK chart is a Lean Six Sigma tool used to categorize and prioritize improvement ideas. It's sometimes called an effort/impact chart. The chart has four quadrants:

- **P**ossible idea.
- **I**mplement idea.
- **C**hallenge idea.
- **K**ill idea.

An easy way to create a PICK chart is to draw a 2 x 2 grid either on a whiteboard or a large paper flip chart. Have participants place improvement ideas (written on sticky notes) in the quadrant where they feel the idea best fits.

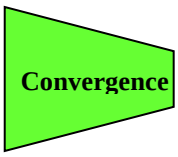
A PICK chart can be a helpful tool for deciding what to work on first. The ideas in the "implement" quadrant are likely a good place to start. The team can then start looking at some of the ideas in the "challenge" quadrant that are more difficult but have a high payoff. The ideas in the "possible" quadrant are not a priority to pursue, and the ideas in the "kill" quadrant should likely not be considered.

Here are some guidelines for using a PICK chart:

- Don't let participants put their sticky notes between quadrants. They need to decide what quadrant they go in. The beauty of sticky notes is that they can always be moved as the team discusses each idea.
- Keep the PICK chart simple. Don't subdivide each quadrant or allow participants to be strategic about the quadrant they place their sticky note in.
- If participants have trouble putting an idea in the quadrant labeled "kill," explain that "kill" just means that the idea is hard to do and has a low payoff.

Internet Citation: Appendix B. Prioritize Opportunities for Improvement. Content last reviewed October 2017. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/patient-safety/settings/hospital/resource/pressureinjury/guide/apb.html

QuickTip - Gap Analysis



What

Gap analysis is a steering technique. It is like reading a map to determine where you are, where you want to be, and routes to get there. Gap analysis determines the current state, the desired state, and steps to get from one to the other. Applied periodically, it is a useful way to ensuring forward progress through the fuzzy front end.

When

- You want to start a team off in the right direction.
- You want to align objectives among the team.
- You need to verify that you are still on track.

How

Gap analysis can be an individual or a team activity, depending on who is doing the steering and who you want aligned. If done as a team, gap analysis tends to build alignment and commitment to a shared direction and approach.

Identify and write down the desired state. These are the essential attributes of where you want to be. Depending on what you are steering, the attributes could be project deliverables, product features, or operation parameters. This list of desired attributes should be short and SMART (specific, measurable, achievable, and time-bound).

Write down the current state of each of the attributes identified in the desired state. The descriptions of current and desired states should describe the situation, not causes or solutions. For example, a desired attribute could be "The charter for the project is ready for review by June 1", not "Add more developers to get the charter done faster."

Then for each attribute identify specific actions to get from the current to the desired state. If the actions to get from current to desired state are not apparent, use other divergence and convergence tools to generate possibilities and select the best options. Popular tools for this include cause-and-effect analysis (Fishbone or Ishakawa diagrams) and flowcharting.

Attribute	As-Is	Desired	Action Steps
Project Charter	Not started as of 7/1	Ready for review by 8/1	1. John write first draft by 7/18. 2. Mary and Fred agree on wheezit vs cost tradeoff by 7/9. 3. …

QuickTip - Five Whys

This is a very simple but powerful questioning process that helps a team peel away layers of symptoms to get closer the real root cause of a situation. Understanding these root causes is key to making long term improvements to a situation rather than treating symptoms. The technique was originally developed by Sakichi Toyoda who stated that "by repeating why five times, the nature of the problem as well as its solution becomes clear."

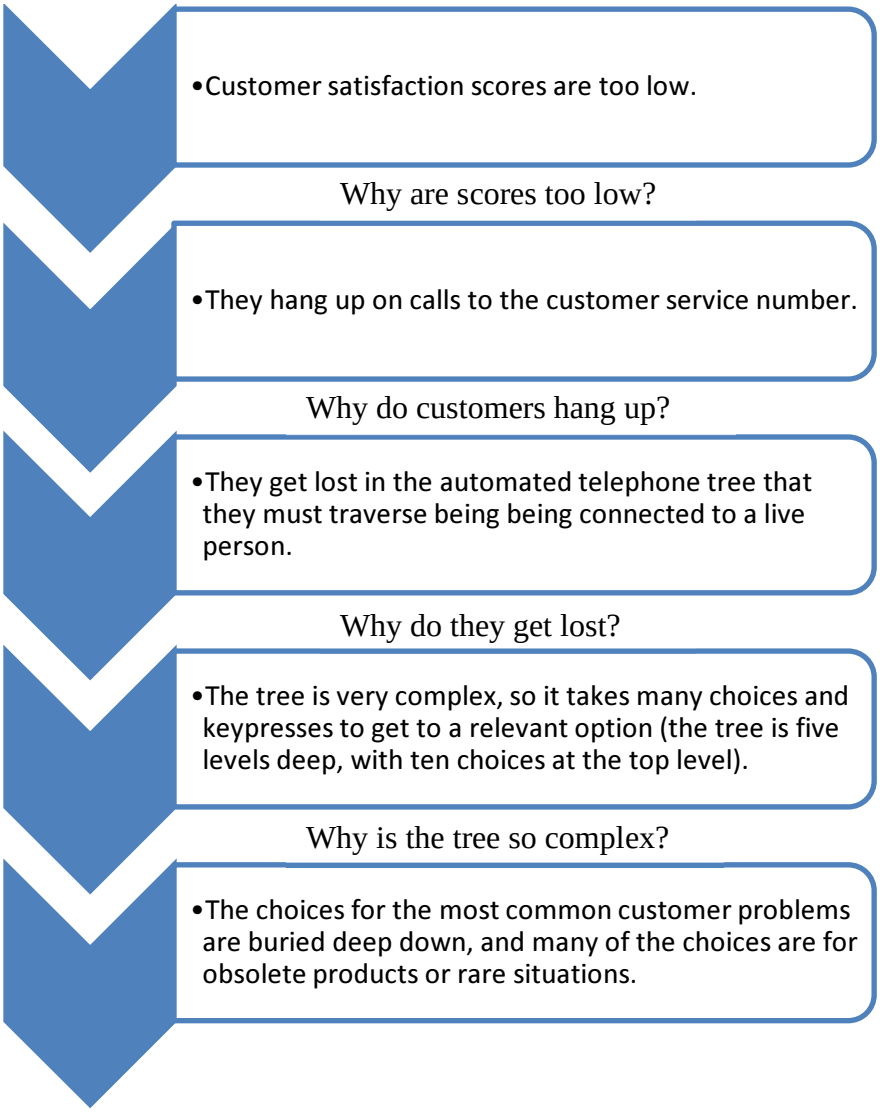
When to Use

- When you want to bring clarity and refinement to a problem statement.
- When you need to elicit information on real motivations, needs, or existing ways of doing things. For example, you may need to understand how a business process is really performed instead of how it is supposed to be done, and why.
- When you want to push a group to delve deeper to figure out what the real problem is, not just its obvious symptoms.

Procedure

1. To use informally, usually in a 1:1 or small group interview:
    a. Ask a question about why something happened or is done a certain way.
    b. When you get an answer, ask why that is the way it is, or why not an alternative approach.
    c. Keep asking why or why not, being careful to phrase the question in a variety of ways so that you don't come across as obnoxious or confrontational.
    d. Repeat until you get to the root cause, which may take more or less than five repetitions.
2. To use more formally, such as in a problem-solving session or kaizen event:
    a. Gather a group of people who have good insight into the problem or situation that you want to understand.
    b. At the top of a whiteboard or large piece of paper, write a summary of the problem.
    c. Ask why five times, as described above. Write the answer to each successive why below the previous one, connecting it with a vertical line. If there is more than one answer to a why question, write all of them on the same line, resulting in a branching tree.

Example



See more about the Five Whys technique at ASQ's quality tools resource center:
https://asq.org/quality-resources/five-whys

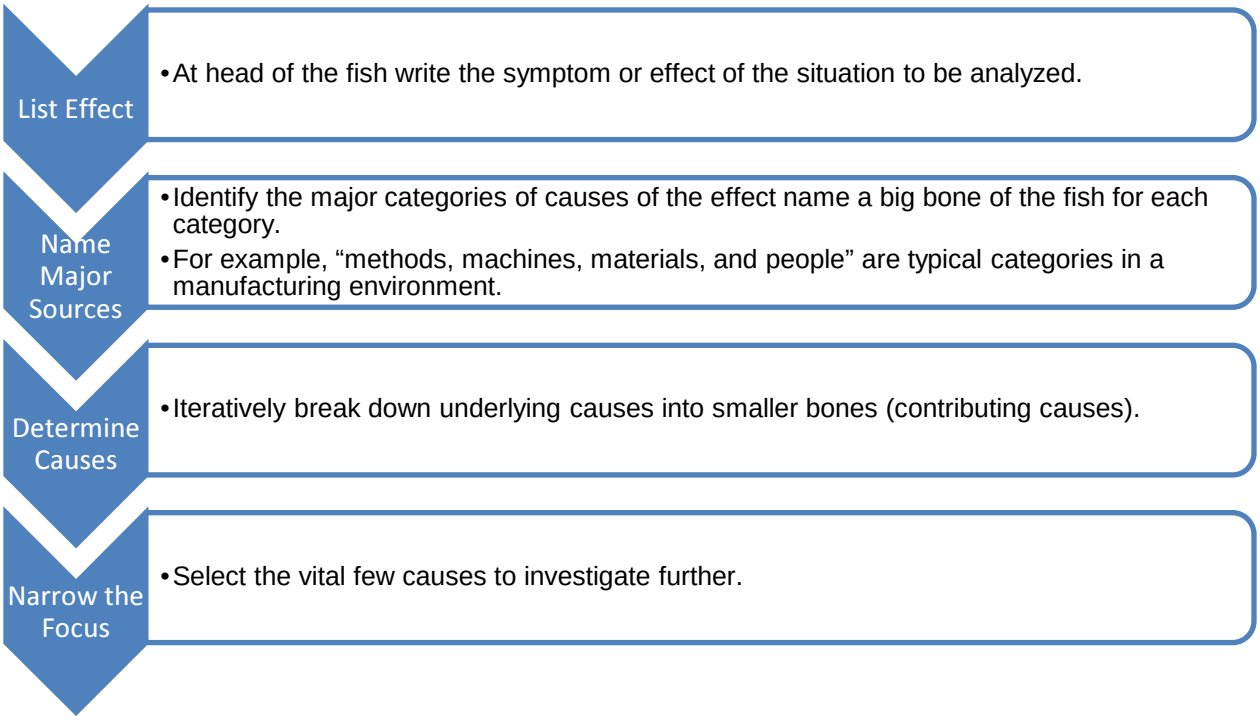
QuickTip - Cause and Effect Analysis

In 1943 Dr. Kauru Ishikawa developed cause and effect analysis. The technique creates a visual diagram of what causes an observed effect or situation. The diagram shows is usually called a fishbone diagram (after its shape) or an Ishikawa diagram (after its inventor). This technique is a structured way to think about why something is happening, allowing you to focus your limited resources on the most effective way to change the situation.

When to Use

Use this technique when you need to get to the root causes underlying a situation in order to solve the real problem rather than just a surface symptom.

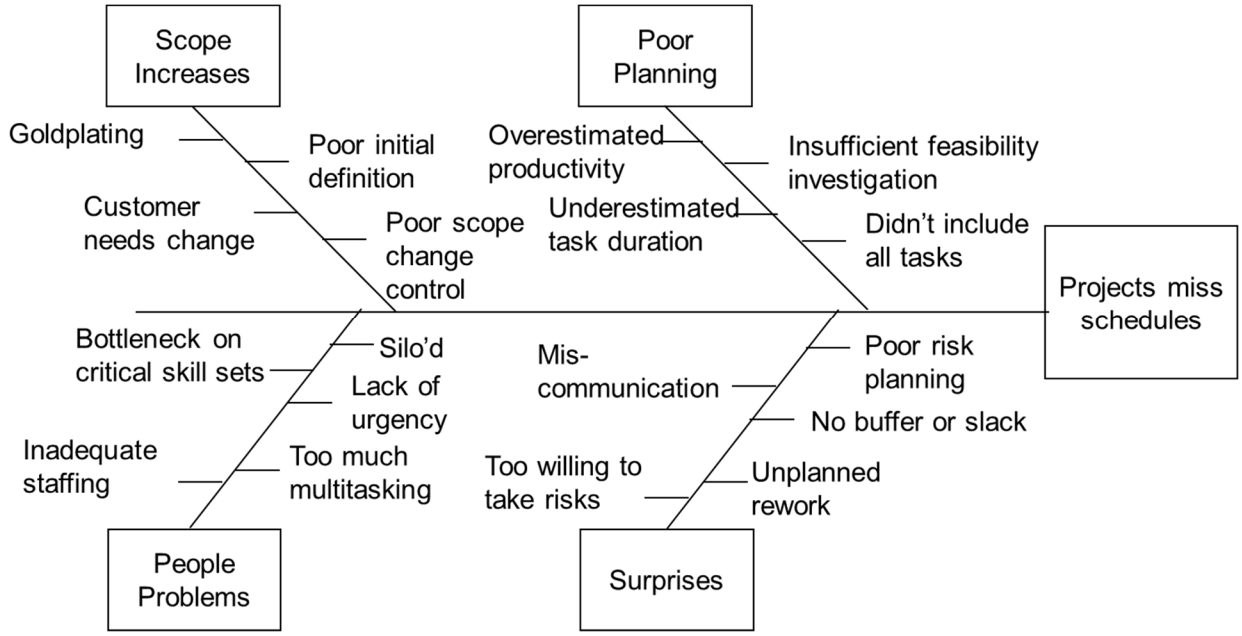
Procedure



Example

The example below shows the fishbone diagram for a situation where projects at a company often finished behind schedule. The company wanted to understand why so many projects were late and where to focus to improve things. Therefore the effect, shown on the head of the fish, is “Projects miss schedules.” The main bones of the fish are the four major categories of things that contributed to past slips, such as poor planning. The smaller bones are causes that contribute to each category.

Note that the diagram is not just a collection of causes. Causes are organized into major categories to help make sure some are not left out. The company found the causes by extensively interviewing the people who worked on projects. It used the affinity clustering technique to figure out the relevant categories for the fishbone, and finally it looked for overlooked causes in each category. Then it was ready to select a vital few root causes to focus on for improvement.



QuickTip - Pareto Analysis

Pareto analysis is used to help decide which of many causes to focus on in order to change a situation most effectively. It takes advantage of the Pareto Principle, which says that most problems have only a few primary root causes. Fixing those root causes will fix most of the resulting problems.

When to Use

Use this technique when you don't have enough time or resources to fix everything and want to focus on the things that will have the biggest effect on a situation.

It is often used together with cause and effect analysis. Cause and effect analysis is used to figure out the root causes of a situation, then Pareto analysis is used to decide which of those causes to focus attention on. A Pareto chart plots the frequency of occurrence of causes in descending order.

Procedure

1. Decide what causes you will analyze or what categories you will use to group items. For example, if you are working on improving customer service, you might use categories like "excessive wait time" or "unable to fix customer's issue."
2. Decide how to measure the categories. Common measurements are number of occurrences, frequency, cost, and time spent. For the customer service example, you could measure number of occurrences (how often the representative was unable to fix the issue) or frequency (what percentage of the interactions resulted in no fix).
3. Decide what period of time you will analyze. It should be long enough to capture a valid picture of what is happening, but not so long that it will be unfeasible to gather data.
4. Collect data for each category or gather data that already exists. Subtotal into each category.
5. Plot the categories on a column chart in decreasing order. If there are many categories with small measurements, they can be grouped as "other."
6. Optionally, also plot a line that shows the cumulative contribution of causes (see example below). This line should reach 100% at the rightmost category.
7. Based on this information, decide which categories you will focus on to get the most return for your improvement effort.

Example

Quality pioneer Joseph Juran popularized the Pareto Principle, which he named after Vilfredo Pareto, a 19th century Italian economist who developed a theory of unequal distribution. Pareto

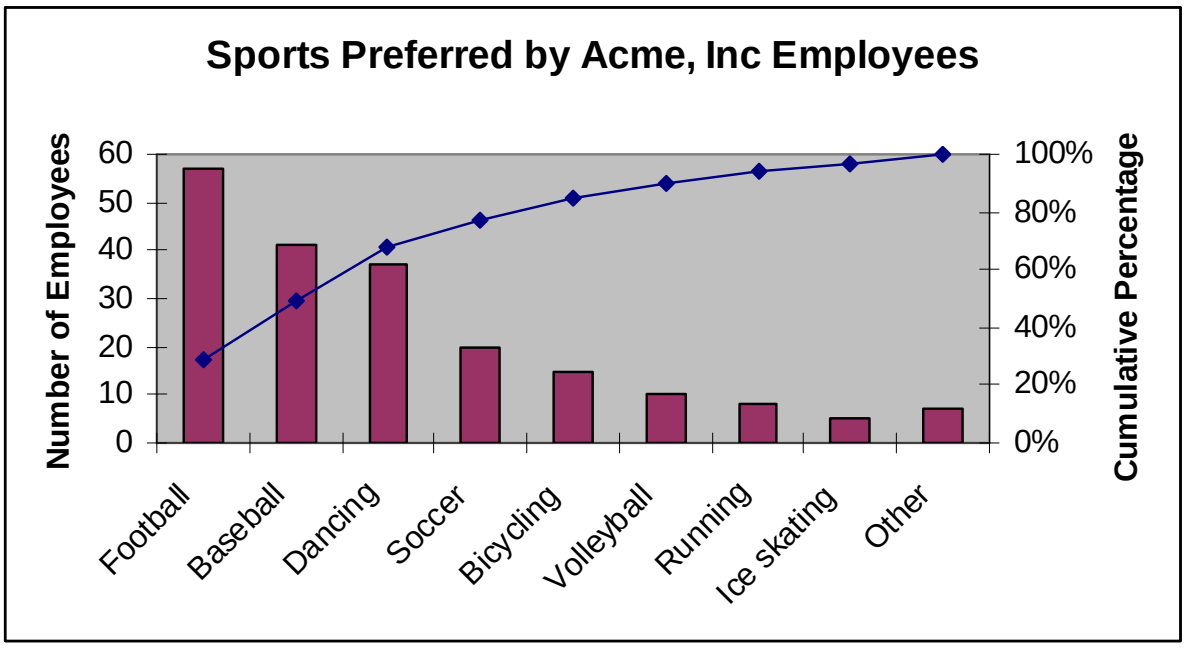
observed in the area he studied that 80% of the wealth was held by 20% of the population. The 80-20 ratio, or one similar to it, seems to apply to many situations.

For example, if 80% of customer complaints are caused by 20% of the issues that we have uncovered, we should focus on fixing those few issues to get the most return on our quality improvement investment.

The example Pareto chart below shows the primary sports that are preferred by employees at a company, which plans is doing a Pareto analysis to guide its decisions on which recreational benefits to offer to them.

By convention, the causes (in this case sports preferences) are arranged left to right in decreasing order of contribution. The columns show the number of employees who named a certain sport as their first preference, and the blue line shows the cumulative percent contribution of each sport in order of preference.

In this example, just over 80% of employees would get access to their preferred sport if the company offered opportunities for the leftmost four – football, baseball, dancing, and soccer. This isn't 80-20, but it illustrates that focusing on a subset of causes can satisfy most of the need.



See more about Pareto analysis at ASQ's quality tools resource center:

https://asq.org/quality-resources/pareto