

When is Enough Enough?

One person working alone is more productive than a group!

This is a really bad thing for specialists in group process to admit. But here it is, in print, for all the world to see. Now comes the caveat ...

- This appears to be true only for the short run. Individuals tend to run out of mental steam after a short while. Managed groups can go on and on. We have yet to experience a carefully designed and managed group that runs dry.
- Ideas are only a part of what happens at an Invention Session. We frequently start the liaisons which make for a successful implementation, exchange other vital information and create a history of success for the team.

The results on the next page are typical for idea generation sessions. A major assumption is that quality can emerge from quantity in a creative exercise (remember the formula for creativity).

$$\begin{array}{l} \text{QUALITY} \\ \text{OF} \\ \text{THINKING} \end{array} = f(\text{QUANTITY}) * \text{ORGANIZATIONAL CLIMATE}$$

Understanding this formula is a key factor in understanding the difference between *serial thinking* (what we usually do, one idea logically following the other) and *parallel thinking*. Parallel thinking is what should be occurring in this exercise; that is, thinking along many simultaneous tracks.

The following session results may help you to see the extent to which idea generation can be carried out. Keep in mind that ideas are infinite and you can spend three or four days redesigning what could be considered to be a "simple" household appliance.

Ideation Session Results

	Group Size	Time (Hours)	Facilitators	Concepts Developed	Concepts Selected
Commercial Consumable Technology	19	18	4	103	35
Push Packaged Goods	9	20	2	39	10
Technology Push Naming Session	11	24	2	64	30
Insurance Products	7	24	2	43	12
Organizational Issues	9	17	2	24	5
Positioning Lab	16	20	3	65	11
	32	4	2	9	3
	9	8	1	6	4
New Service Development	1	27	*	17	7
Line Extension Electronics	1	8	*	6	2

* WORKBOOK ONLY

Several points can be made about this data:

1. There is no perceived difference in the value of the first concept created when compared with the last concept created. Sessions do not reach a point of absurdity because you run out of ideas; rather, sessions stall at the point when people are tired or realize the amount of work necessary for the task.
2. Adding more people can reduce the cost-effectiveness of a session. Nineteen people took about 3.7 person hours to produce a concept, and this was an exceptionally productive group. Still, one person working alone produced one concept eighty minutes.
3. People tend to find enough value in 25 to 35% of ideas developed to be worth pursuing. By value we mean that a significant portion of the group felt that the concept should at least be looked at further. Interestingly, about the same percentage are rejected, outright, with the remaining 30 to 50% being loved by somebody.
4. Leading ideas come from all portions of the idea development process. They don't clump. Indeed, a Brand Manager for Scott Paper stopped a decision-making process with a dazzling idea that became the last idea, the 103rd concept, and went to market.

Summary

Numbers are interesting, but only go so far when expressing what happens during an invention process. Clearly, one person working alone is more productive over the short term. Our experience suggests that **working alone or in a pair is frequently a good first step**. You may find the ideas you want by taking only this step, or you may not. If you do, you will be in a good position to save your resources for other parts of the new product development cycle. If you need to go further, exploration will have had the value of clarifying your thinking and perhaps of helping you to the decision that you need a group session.

Sort Criteria

You should now be looking at a list of five to twenty-five concepts in your Concept Cabaret.

Up to this point we have worked to steer you away from thinking too much about what a **"good"** idea might be. Part of the reason is that for many types of invention issues, and for many of us that get involved in invention issues, implementation is an all too critical concern. We might fail to look outside of our initial box once we have started to set boundaries. Therefore, we suggest, and many others in our field would agree, that you start with few limits and become more rigorous as you approach implementation. (Again, in a professionally managed session, there is good evidence that the opposite is true.)

Based on the creativity formula, we have encouraged you to generate a large quantity of ideas through three levels of brainstorming. Many problem-solving techniques allow for only one round of brainstorming. This puts a tremendous pressure on the idea to be good in its infancy. We have suggested three rounds of ideation in this workbook, but there is nothing absolute about this. If an idea is still incomplete, a fourth round may be appropriate for you. We believe quality will emerge from quantity. We also believe that continuing to develop a single line of thought can be very profitable.

We find the formula to be true enough and more importantly, useful. We have also come to the inescapable conclusion that there is also a second equation at work as we move toward implementation.

FORMULA FOR INNOVATION

$$\text{Innovation} = \frac{\text{CREATIVITY}}{\text{EXPECTED EFFORT}^2}$$

This formula is still open to revision. My friends, Bob Welsh and Wally Brown, formerly of Westinghouse Electronics, have a positive variation which recognizes the value of the coach/facilitator in the process:

$$\text{Innovation} = \text{Facilitation} \frac{(\text{CREATIVITY} * \text{High Cover (management support)})}{\text{EXPECTED EFFORT}^2}$$

As we move toward the Final Screen and Next Steps, keep in mind the limits of what we have done here. We have attempted to increase the odds of generating a new solution through both quantity of thinking and through some exercises designed to assist the quality of ideas.

Creativity is just one essential aspect of innovation. High cover, or management and organizational support are equally important. The third component, "Expected Effort", comes from painful experience. The greater the expected effort, the more creativity and high cover you will need as you move through the project toward implementation.

Keep in mind the results of the McKinsey study on new product development – "Efforts that are six months late reduce lifetime profits by 33%. Those that are 50% over budget reduce lifetime profits by 4%." Neither is going in the right direction and both over-runs will damage your credibility. However, expectations are something that can be managed. Managing the expectations of your management is part of your job.

The "squared" comes from hard experiences in "new to you" efforts. The truly new issues and concepts – new systems, new products, new techniques – that challenge the status quo, seem to take longer than prior experience with modest change efforts would suggest. Their very newness adds a tremendous burden of proof to the new product concept. Implementation for a "new" concept always seems to take longer and more resources than we think it should.

We have already mentioned the value of Souder's work, *Managing New Product Innovations*. One critical factor that he reminds those of us who are individual contributors is that our projects are likely to meet or exceed expectations one out of four times. Projects managed by teams succeed three out of four times.

It is critical that we be aware of our limits and either stay within them or shift our process to one with a higher probability of success. Now that is a restrictive sort of statement. Did we say that? Let us rephrase it a bit: it is critical that we realize when we are moving to a point when we are exceeding our authority or base of knowledge. At that point, get help

Moving from Creativity Toward Innovation

**Leonardo Da Vinci was creative...
Edison was innovative.**



As much as we admire both men, we are in the business of getting things done. That means making ideas happen. In many cases that may mean setting aside some of the more creative ideas until a later time. This is one of the most difficult judgments to make – chasing a wisp of newness that can change the world, or going after an okay idea that you know you can do.

Search your soul. Or if you don't feel that profound, look at your industry and competing industries that may seek to meet your customers' needs with their special tools and techniques. Please look globally. **The greater the threat you perceive, the more you will need to step out on the creative edge.**

This is where courage comes into play.

The following points made by Bright and Rogers are remarkable for their perception and simplicity on a very complex subject.

INNOVATION TACTICS

(Adapted from the work of J.R. Bright)

Basic Assumptions

1. Individuals and organizations tend to settle into relationships and procedures to achieve social equilibrium. "Let's not waste energy."
2. Equilibrium is achieved by adjustments to work and to the management technology, daily practices, habits, values and prevailing structures.
3. Any innovation alters those adjustments and creates dis-equilibrium.
4. The amount of dis-equilibrium caused is proportionate to the perceived change the innovation creates, not necessarily the real change that it creates.
5. In times of crisis, innovations will be sought out instead of resisted.
6. Acceptance of innovation can be dramatically influenced by the social climate of the moment.
7. Most importantly, you must look at the innovation and its evaluation, **always from the user's perspective**. The innovator's perspective is irrelevant and even counter-productive.

TACTICS FOR REDUCING RESISTANCE TO INNOVATION

(Adapted from the work of E. Rogers.)

1. **Perceived Advantage:** The user should be able to see, easily, an advantage over what he is doing now.
2. **Failure Consequences:** The user must understand the consequences of failure of the innovation and, obviously, the less potential injury from failure, the more interested the user will be.
3. **Compatibility:** The better the new idea is perceived to fit with what is already being done, the more likely it is that it will be accepted.
4. **Simplicity:** Keep the supporting activity needed for the successful use of innovation as simple as possible. This does not mean that the mechanism should not be complex. It merely means that the user's perception of the innovation should be simple.
5. **Divisibility:** The more the innovation can be tried one piece at a time the easier it will be to accept.
6. **Communicability:** If you use old vocabulary to describe the new idea, you make it easier to accept.
7. **Reversibility:** It must be easy for the user to withdraw from the use of the innovation.
8. **Relative Costliness:** The degree to which the innovation absorbs the user's resources, including, time, money, person-power, emotional commitment, should be less than what it is replacing.
9. **Reputation of the Innovator:** The more the innovation can be associated with a trusted reputation, the easier it will be to accept.
10. **Timeliness:** Timing can be everything. It must be neither too soon or too late. Items one through nine can change over time.

Remember the key is how the user perceives the innovation, not how you, the innovator, perceive it!

We might add that your ideas are all on paper and infinitely modifiable. As we become more rigorous, don't hesitate to go back and explode with new thoughts around an idea that you like but for some reason fails to meet the criteria you are about to develop.

With that, let's develop a list of criteria for our own project. How would you like to sort out the concepts you have developed?

Examples:

1. Volume ... We should be looking for ideas that could approach the top third of our line (\$5 million in annual sales).
2. Gut ... It feels right and besides it is something I really want to do.

Sort Criteria

1. _____
2. _____
3. _____
4. _____
5. _____

Hint: If you haven't listed time to introduction, your time constraints and money, you probably aren't taking this seriously. As you move forward, you must be aware of the challenges you face. Go back through your ideas. Are there others that may be suggested in your thinking to this point?

6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

All of your criteria are important. But...

Select no more than five, and we strongly recommend that guy reaction be on your short list.

1. _____
2. _____
3. _____
4. _____
5. _____

This is a very good time to take a break. Go smell the roses.



Now, we'll set up the criteria rating grid.

We have included one sample and two blanks in case you want to redo your work or in the event that you are working with a partner who doesn't have the same fine understanding of the future that you have.

- You may wish to rewrite your criteria at the bottom of the grid as a reminder.
- We prefer this type of rating; however, it is not sacred and you may wish to go so far as to weight your criteria.
 - 1 = bad or zero
 - 3 = don't know
 - 5 = great or high

Note: If you are working with someone, work alone and then discuss your differences carefully. Differences are often caused by truly different perspectives on what the concept means.

If this happens to you, split the concept, write up the new one and add it to your list.



**EXAMPLE
FINAL GRID**

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1. <i>Robo Boat</i>	1	5	1	3	2	12	8
2. <i>Flex Arm</i>	4	4	5	4	4	21	2
3. <i>Robo Slow</i>	5	2	3	5	3	18	3
4. <i>Vend - Bot</i>	3	5	1	1	1	11	9
5. <i>Pill Pusher</i>	3	5	1	5	1	15	5
6. <i>Health Mate</i>	2	2	1	5	3	13	7
7. <i>Tire Tamer</i>	2	5	1	3	5	16	4
8. <i>Pool Master</i>	3	3	3	3	3	15	5
9. <i>Trash Sorter</i>	4	4	5	5	5	24	1
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
23.							
24.							
25.							

CRITERIA:

1. Market Size Estimate
2. Feasibility
3. Product Line Fit
4. Green (Environmentally / Socially Sound)
5. Gut Reaction

FINAL GRID

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
23.							
24.							
25.							

CRITERIA:

1. _____
2. _____
3. _____
4. _____
5. _____

FINAL GRID

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
23.							
24.							
25.							

CRITERIA:

1. _____
2. _____
3. _____
4. _____
5. _____

OPTION**EXMAPLE OF WEIGHTED
FINAL GRID**

CONCEPT NAME	CRITERIA					RATING	
	1 1/ Weight 4	2 2/ Weight 5	3 3/ Weight 2	4 4/ Weight 3	5 5/ Weight 5	TOTAL Unweighted / Weighted	RANK Unweighted / Weighted
1. <i>Robo Boat</i>	1/4	5/25	1/2	3/9	2/10	12/50	8/7
2. <i>Flex Arm</i>	4/16	4/20	5/10	4/12	4/20	21/78	2/2
3. <i>Robo Slow</i>	5/20	2/10	3/6	5/15	3/15	18/66	3/4
4. <i>Vend - Bot</i>	3/12	5/25	1/2	1/3	1/5	11/47	9/9
5. <i>Pill Pusher</i>	3/12	5/25	1/2	5/15	1/5	15/59	5/5
6. <i>Health Mate</i>	2/8	2/10	1/2	5/15	3/15	13/50	7/7
7. <i>Tire Tamer</i>	2/8	5/25	1/2	3/9	5/25	16/69	4/3
8. <i>Pool Master</i>	3/12	3/15	3/6	3/9	3/15	15/57	6/6
9. <i>Trash Sorter</i>	5/20	4/20	5/10	5/15	5/25	24/90	1/1
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							
25.							

CRITERIA:

1. *Market Size Estimate (weight 4)*
2. *Feasibility (weight 5)*
3. *Product Line Fit (weight 2)*
4. *Green (Environmentally/Socially Sound) (weight 3)*
5. *Gut Reaction (weight 5)*

TOTAL WEIGHTED RANKING = Sum of each rank * weight

CONCEPT NAME	WEIGHTED FINAL GRID CRITERIA					RATING	
	1 1/ Weight 4	2 2/ Weight 5	3 3/ Weight 2	4 4/ Weight 3	5 5/ Weight 5	TOTAL Unweighted / Weighted	RANK Unweighted / Weighted
1.	/	/	/	/	/	/	/
2.	/	/	/	/	/	/	/
3.	/	/	/	/	/	/	/
4.	/	/	/	/	/	/	/
5.	/	/	/	/	/	/	/
6.	/	/	/	/	/	/	/
7.	/	/	/	/	/	/	/
8.	/	/	/	/	/	/	/
9.	/	/	/	/	/	/	/
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
23.							
24.							
25.							

- CRITERIA:**
- 1. _____ (weight ____)
 - 2. _____ (weight ____)
 - 3. _____ (weight ____)
 - 4. _____ (weight ____)
 - 5. _____ (weight ____)

TOTAL WEIGHTED RANKING = Sum of each rank * weight

Note: Weighted options at this early stage feel like an over-statement of what you know about a new idea. This should be a rough screen.

Leading Concepts

List your leading concepts in order of priority. You can do this in a number of ways:

- Often there is a natural break or separation in the total point count. Just take all that fall above that point.
- List the top three to five in the ranking.
- Toss the ranking out and go on gut feel. This is far from the worst option. If your personal reaction to these ideas is significantly different from the ranking, we should reconsider the ranking.

Leading Concepts (Use code name)

Only the brave should proceed beyond this point. Skip to Next Steps if you have a weak heart and would rather not know.

Columns and Rows Should Balance

You have invested a good deal in this process if you are at this point. Now, it is time to test your leading ideas with some vigor.

We were always taught to check our subtraction with addition and to multiply out after long division (*Thank you, Mrs. Harris of the Eugene Field Elementary School*). This principle still has value. We are going to check our work.

A friend with packaged goods experience joined a company that was in the process of becoming new product oriented. After looking at their existing new product plan, she took a field trip around town buying and discovering ways the customer need was currently being met. She found eight competitors in what the company had believed to be a new product category. Her work did not kill the project. It did dramatically restructure expectations.

1. Think about the needs your new product will meet. List the top ways the need is currently being met by competitive methods.

Example: For a new type of wet napkin designed to work for small children.

How are the needs currently being met:

1. wet wipes
2. wash cloth in the purse
3. facial tissue
4. Dad's jeans

Your turn

For your leading new product idea, how are the needs currently being met by competitive methods?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Fill out the grid on the next page using several of the competing product or approach names listed above in conjunction with the leading concepts you have selected.

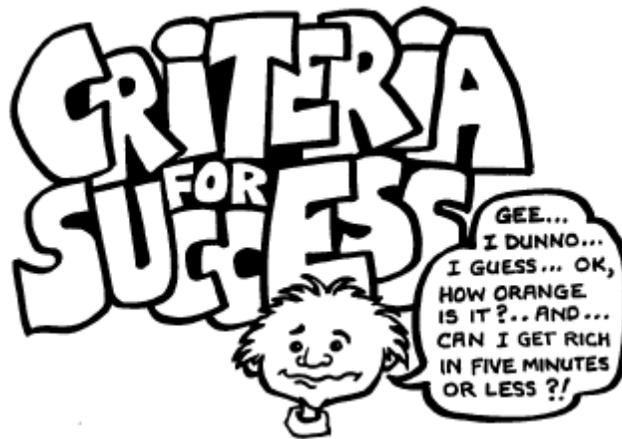
Give each alternative method for meeting the need its own concept name

Again, I have provided an example and two grids for you and a partner. Make copies if you need more

EXAMPLE EVALUATION GRID

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1. <i>By Hand</i>	3	5	5	5	3	21	2
2. <i>Trash Compactor</i>	1	5	1	1	1	9	5
3. <i>Not Done</i>	5	5	1	1	2	14	4
4. <i>Large Plant</i>	4	4	4	3	4	19	3
5. <i>Trash Sorter</i>	3	4	5	5	4	21	2
6.							
7.							
8.							
9.							
10.							

- CRITERIA:**
1. **Market Size Estimate**
 2. **Feasibility**
 3. **Product Line Fit**
 4. **Green (Environmentally/Socially Sound)**
 5. **Gut Reaction**



EVALUATION GRID

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

EVALUATION GRID

CONCEPT NAME	CRITERIA					RATING	
	1	2	3	4	5	TOTAL	RANK
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

What do you like about what you see?

+

+

+

+

+

+

+

+

+

+

What are the problems / gaps / missing pieces? (Turn these into problems to be solved.)

Example: How to compete against no perceived need.

1. How to _____

2. How to _____

3. _____

4. _____

5. _____

Your leading ideas will not be perfect. No idea is at this early stage. Be cautious about either euphoria or frustration. You might find that the idea improves with age. For example, you may have discovered that your idea will not stand up (in your opinion) to an alternative method for meeting the customer's need. The plus is that there is a recognizable consumer need.

Give your idea a chance to be worked through in several different ways:

1. Visualize different forms of the concept.
2. Go talk to some customers.
3. Bounce it off colleagues and ask for help.

If in the end you find that you can come out even, or ahead, on the evaluation grid, you should consider yourself a hero. If you are truly distressed by what you have discovered, you may need to repeat Chapters 1-6. You may also need the help of a diverse group with multiple sets of expertise. Life could be worse. You could have spent weeks, months, or years developing an idea that couldn't cut it.

Remember, ideas are cheap. Action is expensive.

Repeat the process for your other leading concepts.



