

Today's Agenda

1. How to Hack Brainstorming and Become More Creative
2. Your turn to brainstorm!

How to Hack Brainstorming?

Brainstorming?

What are characteristics of good brainstorming sessions?

Creativity / Brainstorming Takeaways

Creative visionaries / Lead users / talking to customers often a fertile source of ideas

Organizing can lead to increased group creativity

How many areas do you want to be

TABLE 3
Means and Standard Deviations, Experiment 2

Dependent Variables	Group Size			
	6		12	
	Electronic Brainstorming	Nonelectronic Brainstorming	Electronic Brainstorming	Nonelectronic Brainstorming
Number of nonredundant ideas ^a				
Means	39.10	30.20	85.90	29.50
s.d.	10.32	12.04	23.43	3.62
Overall quality				

^a Data are for 30 groups.
^b Data are for 120 individuals.
^c The higher the value, the better.

Table 2

Average Number and Quality of Ideas Suggested By Real and Nominal 4-Person Brainstorming Groups Working Under Personal- Versus Collective-Assessment Instructions

Condition	Measure			
	Number of ideas	Number of good ideas	Average originality	Average feasibility
Real group				
Personal	32.33	3.00	2.52	2.90
Collective	23.66	2.00	2.49	3.07
Nominal group				
Personal	84.33	13.33	2.46	2.60
Collective	64.66	5.66	2.43	2.70

Note. Lower numbers indicate higher originality and feasibility.

Table 4

Average Number of Ideas Suggested By Real and Nominal 4-Person Brainstorming Groups Working Under High-Versus Low-Evaluation Apprehension and Collective-Versus Personal-Assessment Instructions

Condition	Type of assessment	
	Collective assessment	Personal assessment
Real group		
Low-evaluation apprehension	34.50	52.50
High-evaluation apprehension	36.00	40.00
Nominal group		
Low-evaluation apprehension	82.00	102.00
High-evaluation apprehension	78.00	66.00

TABLE 1
Means and Standard Deviations, Experiment 1

Dependent Variables	Group Size					
	2		4		6	
	Electronic Brainstorming	Nonelectronic Brainstorming	Electronic Brainstorming	Nonelectronic Brainstorming	Electronic Brainstorming	Nonelectronic Brainstorming
Number of nonredundant ideas ^a						
Means	24.80	26.20	42.20	31.80	69.80	35.90
s.d.	8.22	9.68	11.77	11.87	19.10	10.11
Overall quality score ^a						
Means	70.95	67.65	125.30	81.35	205.90	109.20
s.d.	18.84	33.14	35.15	26.52	51.58	31.74
Number of high-quality ideas ^a						
Means	10.00	10.10	17.30	11.10	28.10	16.10
s.d.	3.33	5.68	3.71	3.66	7.84	5.42
Production blocking ^{b,c}						
Means	2.13	2.03	2.23	2.74	2.31	3.27
s.d.	0.95	1.24	1.03	1.19	1.05	1.34
Evaluation apprehension ^{b,c}						
Means	2.42	2.32	2.25	2.87	2.04	3.24
s.d.	1.21	1.00	0.90	1.10	0.87	1.54
Satisfaction ^{b,c}						
Means	5.05	5.72	5.36	5.22	5.38	4.81
s.d.	1.29	0.83	1.30	0.88	1.15	1.35

- ^a Data are for 30 groups, two observations per group.
^b Data are for 120 subjects, two observations per individual.
^c The higher the value, the stronger the perception or attitude.

Electronic Brainstorming and Group Size. R. Brent Gallupe, Alan R. Dennis, William H. Cooper, Joseph S. Valacich, Lana M. Bastianutti, Jay F. Nunamaker, Jr. Source: The Academy of Management Journal, Vol. 35, No. 2 (Jun., 1992), pp. 350-369

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Means	39.10	30.20	85.90	29.50
s.d.	10.32	12.04	23.43	3.62
Overall quality score ^a				
Means	146.00	99.10	340.00	111.00
s.d.	36.20	38.70	102.00	28.70
Number of high-quality ideas ^a				
Means	25.00	17.12	64.62	20.00
s.d.	7.56	7.81	14.94	4.60
Production blocking ^{b,c}				
Means	2.69	3.11	2.34	3.66
s.d.	1.26	1.26	1.20	1.37
Evaluation apprehension ^{b,c}				
Means	2.33	3.13	2.01	3.78
s.d.	0.95	1.23	0.96	1.38
Satisfaction ^{b,c}				
Means	5.07	4.73	5.64	4.35
s.d.	1.41	1.30	1.12	1.26

^a Data are for 16 groups, two observations per group.

^b Data are for 144 subjects, two observations per individual.

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Diehl and Stroebe. Productivity in Group Problem Solving. *Journal of Personality and Social Psychology*, 1991, 61, 497-509.

Electronic Brainstorming: A Meta-Analysis. R. Brent Gallupe, Alan R. L. Bastianutti and Jay F. Nunamaker Jr. (June, 1992), pp. 350-369.

Gary L. Lilien, Pamela D. Martin. Performance Assessment of Development. *Management Science*, 1992, 38, 1285-1295.

Diehl and Stroebe. Productivity Loss in Brainstorming Groups: Towards a Solution to the Riddle. *Journal of Personality and Social Psychology*, Vol. 53, No. 3. (September 1987), pp. 497-509.

Electronic Brainstorming and Group Size

R. Brent Gallupe, Alan R. Dennis, William H. Cooper, Joseph S. Valacich, Lana M.

Bastianutti and Jay F. Nunamaker, Jr. *Academy of Management Journal* , Vol. 35, No. 2 (Jun., 1992), pp. 350-369

Gary L. Lilien, Pamela D. Morrison, Kathleen Searls, Mary Sonnack, Eric von Hippel.

Performance Assessment of the Lead User Idea-Generation Process for New Product Development. *Management Science*, Vol. 48, No. 8 (Aug., 2002), pp. 1042-1059

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Brainstorming

1. Capture Ideas

a. Write them down

i. Beware of the tyranny of the pen

ii. Everyone writes

b. Record them Audio

c. Video

d. Pictures

2. Frame the Problem

a. A question contributed?

b. Neither too broad not too narrow

3. Facilitator - separate idea creation from idea screening!

as do you

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Dodd and Strube. Productivity Loss in Brainstorming Groups: Towards a Solution to the Public. *Journal of Personality and Social Psychology*, Vol. 55, No. 5, September 1987, pp. 145-156.

Electronic Brainstorming and Group Size. R. Brent Gallupe, Alan R. Dennis, William H. Cooper, Joseph S. Valacich, Liana M. Eastman, and Jay F. Naranjo, Jr. *Academy of Management Journal*, Vol. 35, No. 2 (Jun., 1992), pp. 350-369.

Electronic Brainstorming and Group Size. R. Brent Gallupe, Alan R. Dennis, William H. Cooper, Joseph S. Valacich, Liana M. Eastman, and Jay F. Naranjo, Jr. *Academy of Management Journal*, Vol. 35, No. 2 (Jun., 1992), pp. 350-369.

Group L. Liden, Pamela D. Moen, Kathleen S. Scharf, Mary S. Scharf, Eric van Houten. Performance Assessment of the Lead User Idea-Generation Process for New Product Development. *Management Science*, Vol. 48, No. 8 (Aug., 2002), pp. 1040-1052.

When are you going to use brainstorming in entrepreneurship?

Table 2
Average Number and Quality of Ideas Suggested
Nominal 4-Person Brainstorming Groups Working
Personal- Versus Collective-Assessment Instruction

Condition	Number of ideas	Number of good ideas	Average originality
Real group			
Personal			
Collective			
Nominal	32.33		

In groups of 4:

15 Best Startup Ideas

15 Worst Startup Ideas

Create a 2-5 minute ad for

15 Worst Startup Ideas

Create a 3-5 minute ad for your
"worst startup idea" turning it into
a good idea

Key Framework #9: Effectuation

What resources do I have now?

What can I do with them?



TECHNOLOGY VENTURES



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Fundamental Questions: Strategy



Do we have the right strategy?
What are our goals?
What are we selling?
Why are we better?



Opportunity Assessment Project (OAP) Reminder

What did we learn?

1. E-skip is about seeing problems as opportunities
The bigger the problem, the bigger the opportunity!
2. How to optimize/hack brainstorming
(customers/lead users as fertile source of ideas)
3. Best combination is a creative visionary +
operations/execution (hard to do)

Creativity / Brainstorming Takeaways

- 1.) Creative visionaries / Lead users / talking to customers often a fertile source of ideas
- 2.) Certain ways of organizing can lead to increased group creativity (plus sales/profits)!

Purpose of creativity in a startup - In how many areas do you want to be doing something new?