

Industry Process/Outcome Survey Report Sample 8/29/13

Respondents were asked in the process/outcome survey to provide estimates of various benefits they received from their participation in [Center] during the past year. The results were very impressive. For instance, the seven respondents indicated that on average they considered 2.5 of the centers projects sufficiently high priority that they would have had to conduct them internally if the center was not conducting the research. Based on research on R&D cost avoidance, I estimate that these seven firms saved approximately \$4.7 million in R&D costs by getting the research done within the center¹. In addition, firms reported a cost saving of \$850,000 through accelerated internal R&D and/or avoiding initiating research projects due to center research findings. Further, 3 of the seven respondents reported that they started new research projects based on center research that totaled \$950,000 in value.

Finally, when asked if they had benefitted commercially from their participation several indicated they had. For instance one reported “Formed 1 partnership with a [technology] manufacturer. Access to technical expertise that saved time on R&D via consulting. Hiring an employee. Learned about trends in the industry which steered our direction. Collaborations with a [technology] manufacture and an equipment maker.” Another reported: “Improvement paths on process/product identified through research. Research has provided benchmark data to compare against.” Finally, another reported: “Participation in [Center] has enabled us to be aware of new developments in the [technology] growth areas which are not currently pursued in-house but extremely critical in setting appropriate metrics for our [technology] vendors. In particular the issues of distribution of defects in [technology] have saved us significant investments (~\$500K) in evaluation of these [materials] through pre-production qualification and certifications”.

Thus all told, reports from roughly two-thirds of the center’s members suggest that members realized nearly \$5.5 million dollars in various types of cost avoidance or savings and also caused members to invest an additional \$1 million in new projects that were stimulated by the center’s research.

When asked what the center could do to make their membership renewal more likely once again members focused on some of the issues raised in previous questions including have a lower cost for pre-revenue companies; “More focused project execution and involvement with multiple industry partners”; “Have more related research topics.”

Encouragingly, when asked whether they would renew their membership, all but one said “yes” or “definitely yes”. The other indicated “uncertain. See the attached appendices for a full report on survey results.

¹ Cost avoidance is calculated by N of scientist years x Cost of Scientist years summed across reporting members. A more detailed description of this methodology can be found in: Gray, D.O. & Steenhuis, H.J. (2003). Quantifying the benefit of participating in an industry university research centers: An examination of research cost avoidance. *Scientometrics*, 58, 281-300.

APPENDIX A

CENTER NAME

20XX-20XX Process/Outcome Industry Questionnaire

Respondents: Feedback Provided by XX of XX Members

Table 1: RESEARCH PROGRAM

1a) What percentage of the Center's currently funded research projects do you consider relevant to your organization's current or future R&D needs?											THIS CENTER		NATIONAL	
INDIVIDUAL FREQUENCIES											Current Year	Previous Year		
0-19%		20-39%		40-59%		60-79%		80-100%						
1	2	3	4	5							MEAN	MEAN	MEAN	S.D.
N	%	N	%	N	%	N	%	N	%					
1	12.5	2	25.0	3	37.5	1	12.5	1	12.5		2.88	2.75	3.07	0.58
1b) Please think about the typical Center project you consider relevant to your organization. Approximately how many scientist-months (full-time) would it take your organization to plan, conduct, and complete this research project internally?											THIS CENTER		NATIONAL	
											Current Year	Previous Year		
											MEAN	MEAN	MEAN	S.D.
Number of scientist-months: 64											8.00	9.00	13.14	4.67
1c) In your opinion, how many of the Center's current research projects would be considered a high enough priority that your organization would almost certainly conduct the same or very similar project(s) internally or by contract within the next few years if the Center was not doing this research?											THIS CENTER		NATIONAL	
											Current Year	Previous Year		
											MEAN	MEAN	MEAN	S.D.
Number of projects: 20											2.50	2.44	2.29	0.82
2) During the past year, how satisfied were you with the following features of the Center's research program?											THIS CENTER		NATIONAL	
INDIVIDUAL FREQUENCIES											Current Year	Previous Year		
Not Satisfied		Slightly Satisfied		Somewhat Satisfied		Quite Satisfied		Very Satisfied						
1	2	3	4	5							MEAN	MEAN	MEAN	S.D.
N	%	N	%	N	%	N	%	N	%					
a. Capabilities of the researchers & quality of the research program	0	0.0	0	0.0	0	0.0	3	37.5	5	62.5	4.63	4.58	4.28	0.36
b. Breadth of the research topics covered	0	0.0	0	0.0	1	12.5	3	37.5	4	50.0	4.38	4.22	3.93	0.39
c. Focus of the research	0	0.0	0	0.0	1	12.5	3	37.5	4	50.0	4.38	4.11	3.86	0.44
d. Relevance of research to my organization's needs	0	0.0	1	12.5	0	0.0	2	25.0	5	62.5	4.38	4.44	3.70	0.42

Table 2: BENEFITS

4. Networking & Human Resource Benefits																	
	INDIVIDUAL FREQUENCIES												THIS CENTER		NATIONAL		
	No Impact 1		Slight Impact 2		Moderate Impact 3		High Impact 4		Very High Impact 5		Not Applicable NA		Current Year MEAN	Previous Year MEAN	MEAN	S.D.	
	N	%	N	%	N	%	N	%	N	%	N	%					
a) During the past year, what impact has participating in the Center had on your organization's scientific capability via enhanced cooperation and networking with industry and university scientists outside your organization?	0	0.0	0	0.0	2	25.0	4	50.0	1	12.5	1	12.5	3.86	3.71	3.25	0.44	
b) During the past year, what impact has participation in the Center had on your organization' ability to identify and recruit well-qualified graduate students?	1	12.5	1	12.5	1	12.5	3	37.5	0	0.0	2	25.0	3	2.90	2.50	0.57	
4c) During the past year, how many students trained in the Center research projects were hired by your organization?														THIS CENTER		NATIONAL	
												Current Year MEAN	Previous Year MEAN	MEAN	S.D.		
Number of students hired:												6	0.75	0.55	0.34	0.90	

5) During the past year, has your organization realized any of the following specific benefits? Please answer yes/no, and if possible estimate the value of the benefit:

	INDIVIDUAL FREQUENCIES					For those who responded "Yes" to Q5a OR b DOLLAR VALUE OF ACCELERATED AND/OR AVOIDED R&D					Total Sample DOLLAR VALUE OF ACCELERATED AND/OR AVOIDED R&D					
	Yes		No			THIS CENTER		NATIONAL			THIS CENTER		NATIONAL			
	1	0	N	%	N	%	Current Year	Previous Year		Current Year	Previous Year		Current Year	Previous Year		
	N	%	N	%			\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of
a. Accelerated my organization's internal R&D: Has access to Center research findings and outputs helped accelerate the pace and/or completion of some R&D projects already underway at (or contracted by) your organization?	6	75	2	25.0			625.0	600.00	400.00	300.00	600.00	625.0	600.00	226.90	50.00	813.13
b. Avoided new R&D costs: Has access to Center research findings and outputs helped your organization decide against starting one or more new R&D projects that otherwise would have been initiated?	5	62.5	3	37.5												
	INDIVIDUAL FREQUENCIES					For those who responded "Yes" to Q5d DOLLAR VALUE OF NEW/RE-DIRECTED R&D PROJECTS					Total Sample DOLLAR VALUE OF NEW/RE-DIRECTED R&D PROJECTS					
	Yes		No			THIS CENTER		NATIONAL			THIS CENTER		NATIONAL			
	1	0	N	%	N	%	Current Year	Previous Year		Current Year	Previous Year		Current Year	Previous Year		
	N	%	N	%			\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of	\$/member value of
d. Stimulated New or Re-directed Internal R&D: During the last year, has access to Center research findings and outputs triggered development of new R&D projects, or significantly redirected pending projects within your organization?	5	62.5	3	37.5			520.0	480.00	215.05	100.00	282.13	520.0	480.00	152.74	50.00	271.63
	INDIVIDUAL FREQUENCIES					For those who responded "Yes" to Q5d NUMBER OF NEW/RE-DIRECTED R&D PROJECTS					Total Sample NUMBER OF NEW/RE-DIRECTED R&D PROJECTS					
	Yes		No			THIS CENTER		NATIONAL			THIS CENTER		NATIONAL			
	1	0	N	%	N	%	Current Year	Previous Year		Current Year	Previous Year		Current Year	Previous Year		
	N	%	N	%			#/member value of	#/member value of	#/member value of	#/member value of	#/member value of	#/member value of	#/member value of	#/member value of	#/member value of	#/member value of
e. Number of projects	Total:	11					2.2	2.00	2.21	2.00	1.92	1.8	1.66	1.62	1.00	1.91

6a) During the past year, what impact participation in the Center had toward enhancing your organization's commercialization efforts via: new technical knowledge; expanded intellectual property resources; improved or new products, processes, services, improved sales; or new or retained jobs?

INDIVIDUAL FREQUENCIES												THIS CENTER		NATIONAL	
No Impact		Slight Impact		Moderate Impact		High Impact		Very High Impact		Not Applicable NA		Current Year	Previous Year		
1	2	3	4	5	NA							MEAN	MEAN	MEAN	S.D.
N	%	N	%	N	%	N	%	N	%	N	%				
0	0.0	1	14.3	2	28.6	1	14.3	1	14.3	2	28.6	3.40	3.33	2.02	0.65

Table 3: CENTER ADMINISTRATION & OPERATIONS

7) During the past year, how satisfied were you with the center's administrative operations?													
<u>INDIVIDUAL FREQUENCIES</u>										<u>THIS CENTER</u>		<u>NATIONAL</u>	
Not Satisfied 1		Slightly Satisfied 2		Somewhat Satisfied 3		Quite Satisfied 4		Very Satisfied 5		<u>Current Year MEAN</u>	<u>Previous Year MEAN</u>	<u>MEAN</u>	<u>S.D.</u>
<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>				
0	0.0	0	0.0	2	28.6	2	28.6	3	42.9	4.14	4.00	4.05	0.47

Table 4: GENERAL EVALUATION

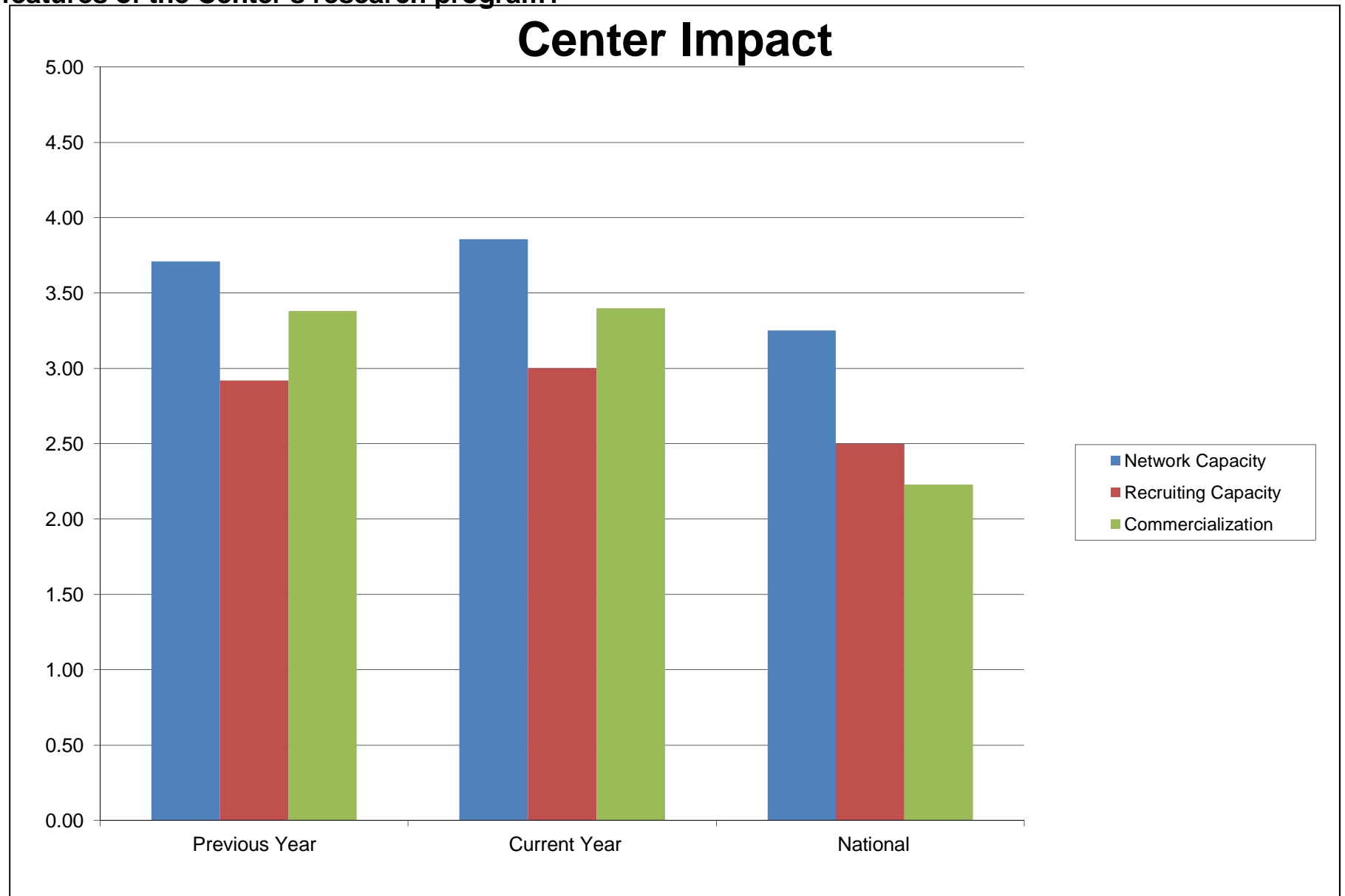
9) Will your organization renew its membership?													
<u>INDIVIDUAL FREQUENCIES</u>										<u>THIS CENTER</u>		<u>NATIONAL</u>	
Definitely Not 1		Probably Not 2		Uncertain 3		Probably Yes 4		Definitely Yes 5		<u>Current Year MEAN</u>	<u>Previous Year MEAN</u>	<u>MEAN</u>	<u>S.D.</u>
<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>				
0	0.0	0	0.0	2	25.0	5	62.5	1	12.5	3.88	3.66	4.07	0.42

11) Organization Size/Type:

	<u>THIS CENTER</u>				<u>NATIONAL</u>	
	<u>Current Year Individual Frequencies</u>		<u>Previous Year Individual Frequencies</u>		<u>Individual Frequencies</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
1) For-Profit-Large (>500 employees)	0	0.0	1	12.5	211	58.6
2) For-Profit Small (<500 employees)	7	87.5	6	75	69	19.2
3) Non-Profit/Government	1	12.5	1	12.5	65	18.0
4) Missing	0	0.0	0	0	12	4.1

Fig. 1

During the past year, how satisfied were you with the following features of the Center's research program?



Satisfaction with Research Program

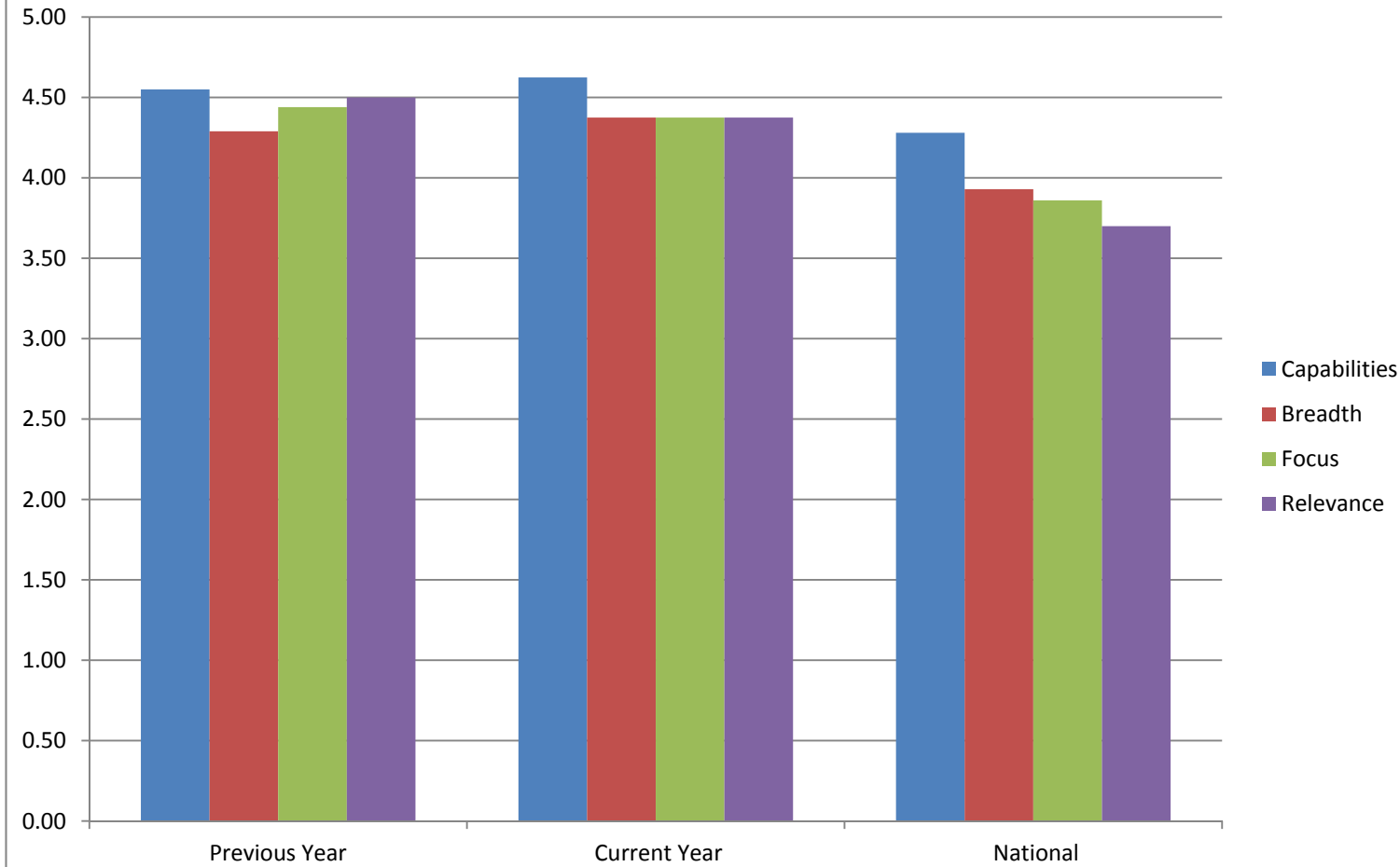


Fig. 3

During the past year, how satisfied were you with the Center's operations and activities?

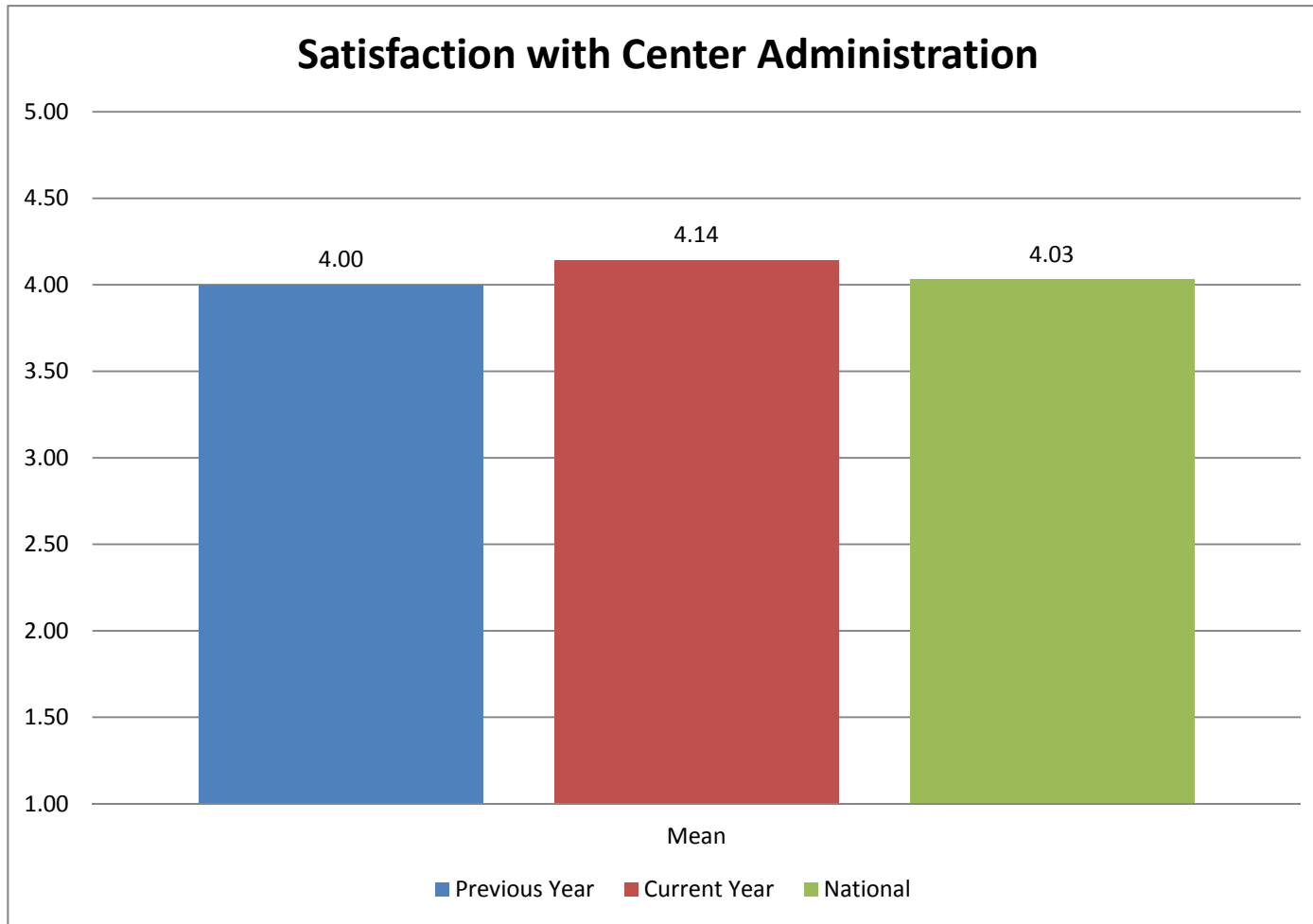


Fig. 4

Will your organization renew its membership?

