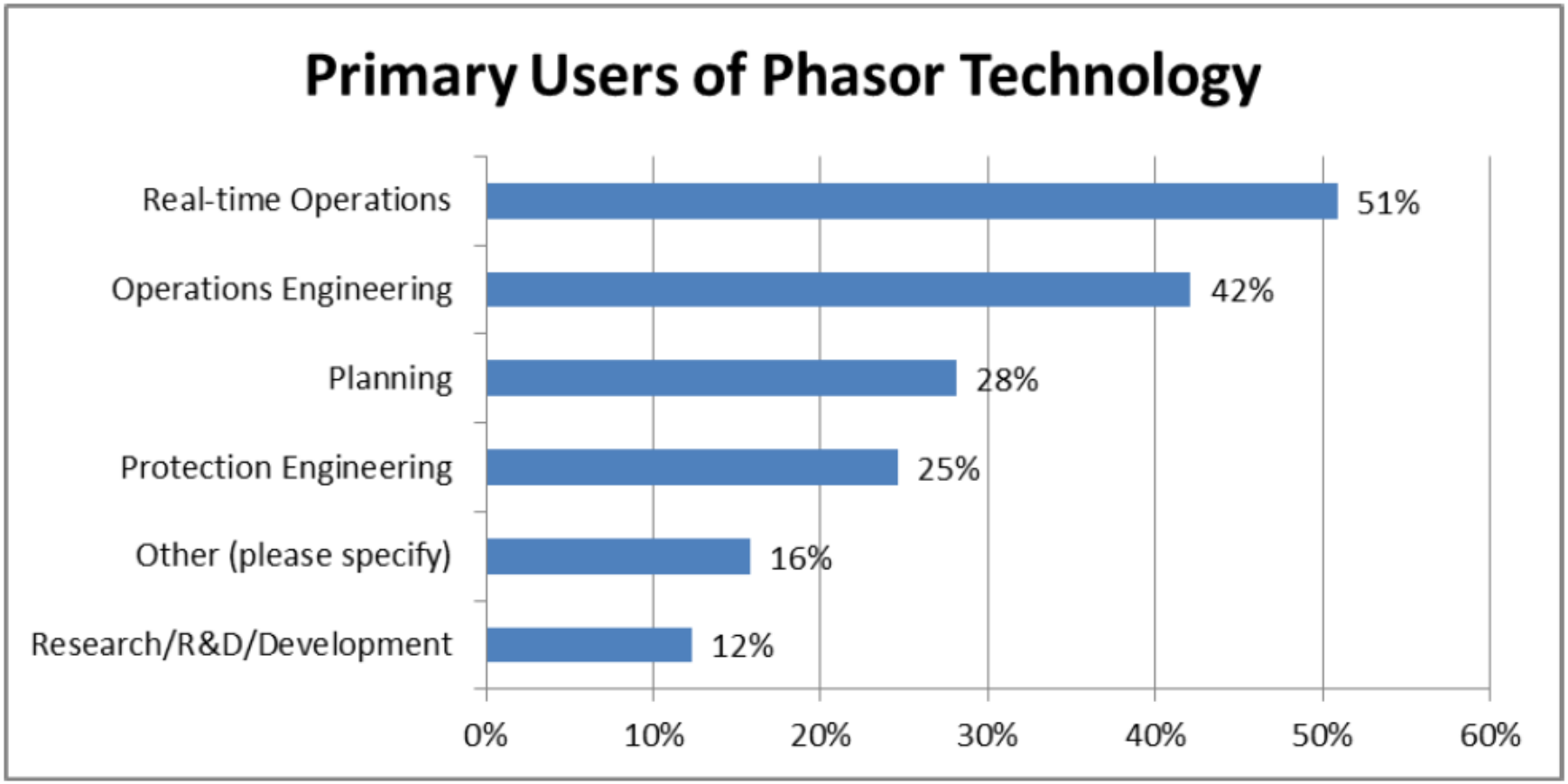
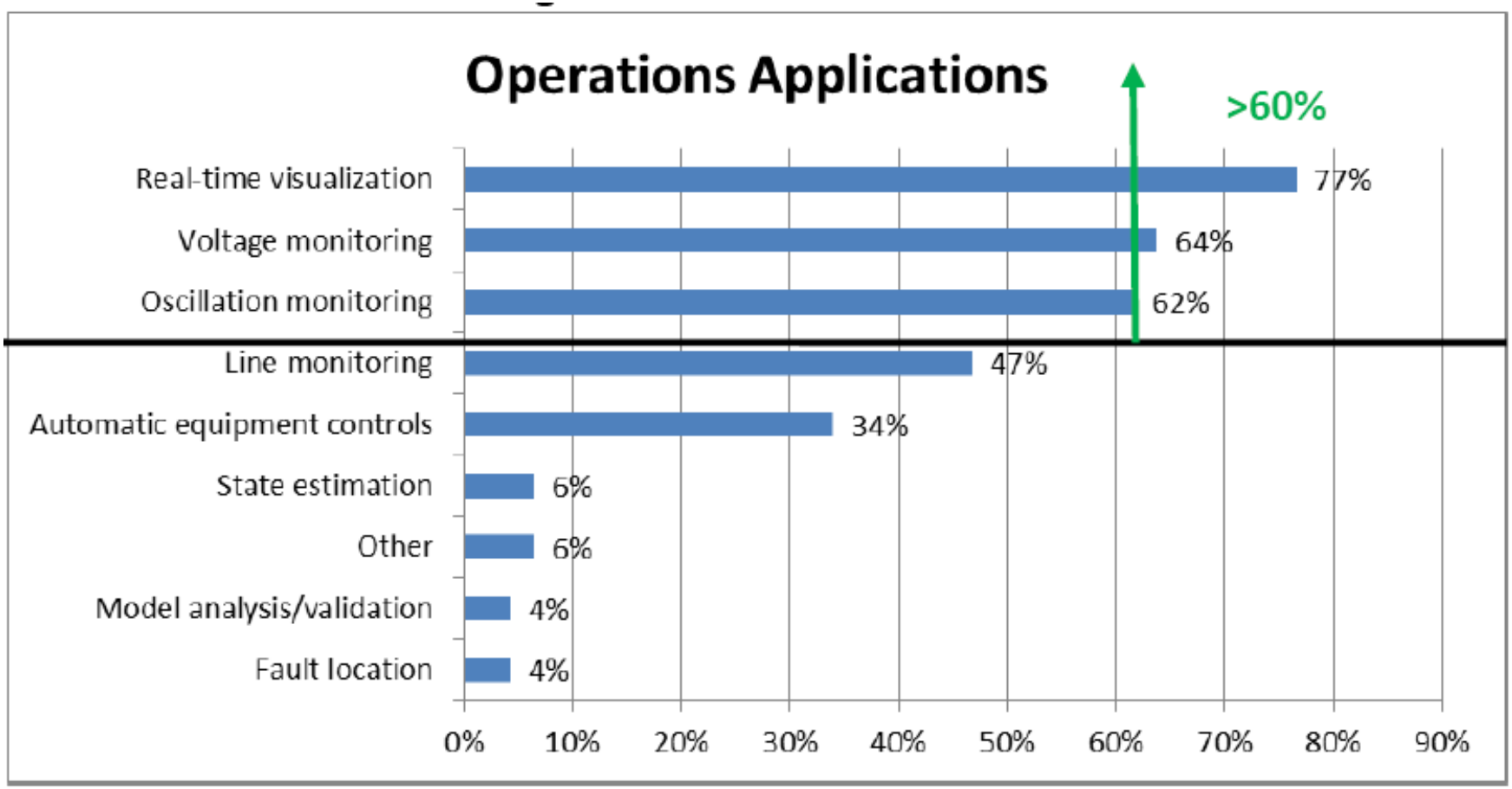
Training Survey

Summary of Results

Primary Users of Phasor Technology



Operation Applications



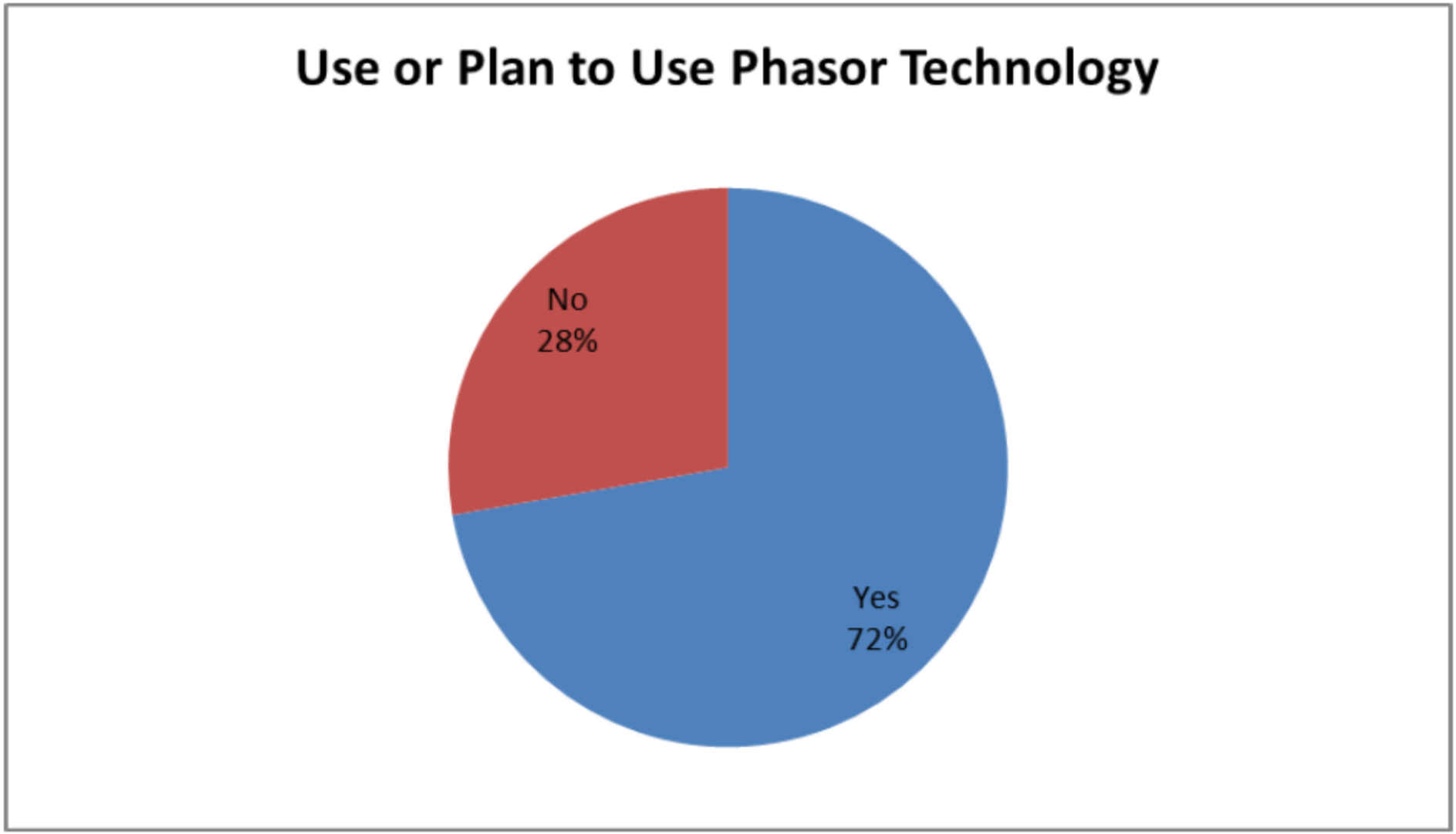
Training Gaps per Function

		1: What is your company's primary function? (Select all that apply.)						
		Reliability Coordinator	Transmission Owner/Coordinator	Generation Owner/Operator	Balancing Authority	Consultant	Vendor	Other (please specify)
PMU data quality	Count	**4**	**12**	**5**	**7**	**5**	**1**	**5**
	% by Col	**66.7%**	**70.6%**	**71.4%**	**87.5%**	**71.4%**	**25.0%**	**71.4%**
Calibration	Count	1	**9**	**4**	**4**	1	0	2
	% by Col	16.7%	**52.9%**	**57.1%**	**50.0%**	14.3%	0.0%	28.6%
Installation	Count	1	8	3	3	1	0	1
	% by Col	16.7%	47.1%	42.9%	37.5%	14.3%	0.0%	14.3%
Standards	Count	2	**9**	3	**5**	3	0	**4**
	% by Col	33.3%	**52.9%**	42.9%	**62.5%**	42.9%	0.0%	**57.1%**
Other (please specify)	Count	0	2	0	0	2	0	3
	% by Col	0.0%	11.8%	0.0%	0.0%	28.6%	0.0%	42.9%

Who Responded

Company Function	Frequency	Count
Transmission Owner/Coordinator	31%	26
Vendor	22%	18
Consultant	13%	11
Balancing Authority	12%	10
Generation Owner/Operator	12%	10
Reliability Coordinator	10%	8
Other	7%	6
Research/R&D	5%	4
University	4%	3
PMU Calibration	2%	2
Regulator	2%	2
Training	2%	2

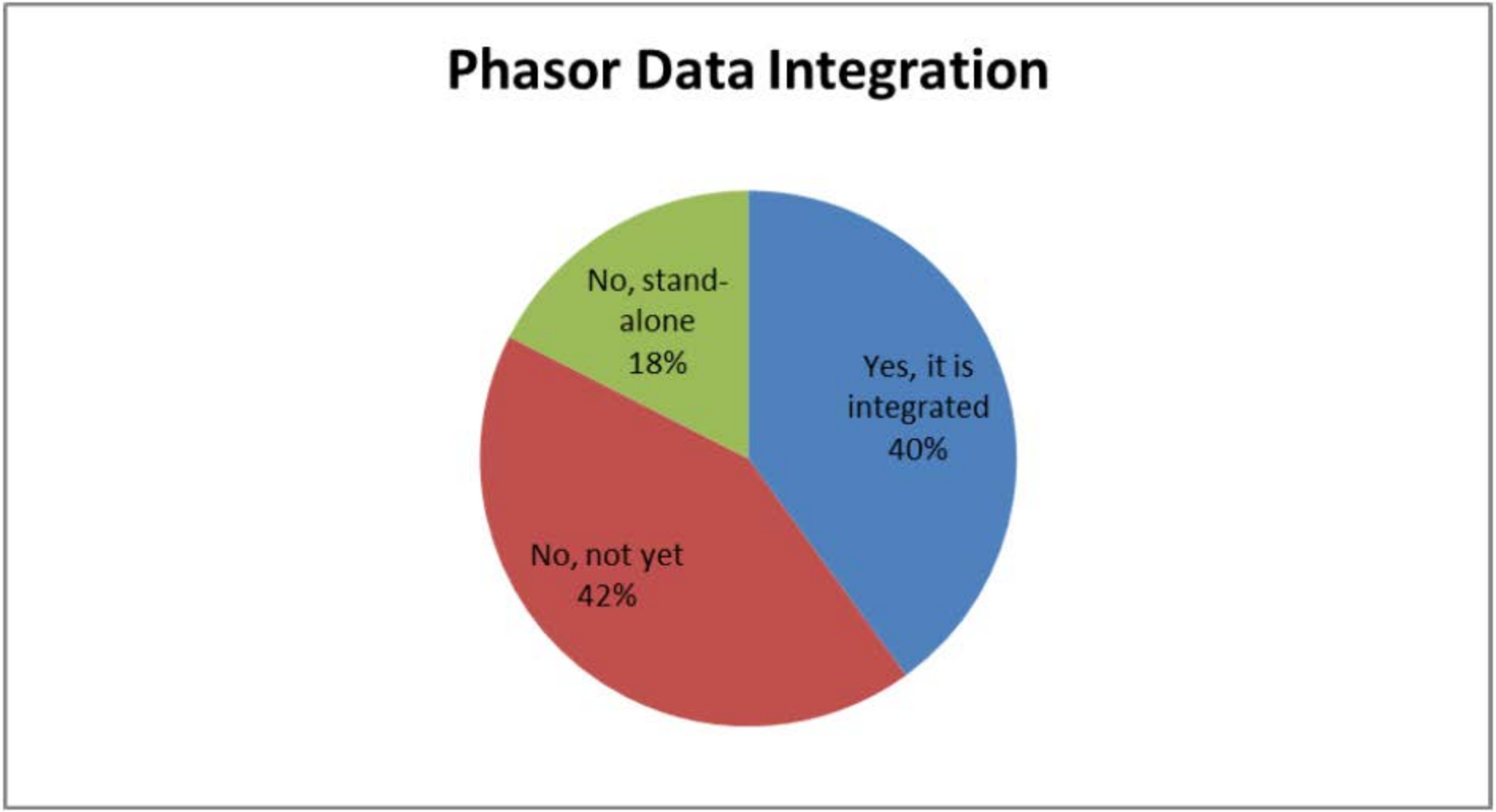
Plans to use Phasors



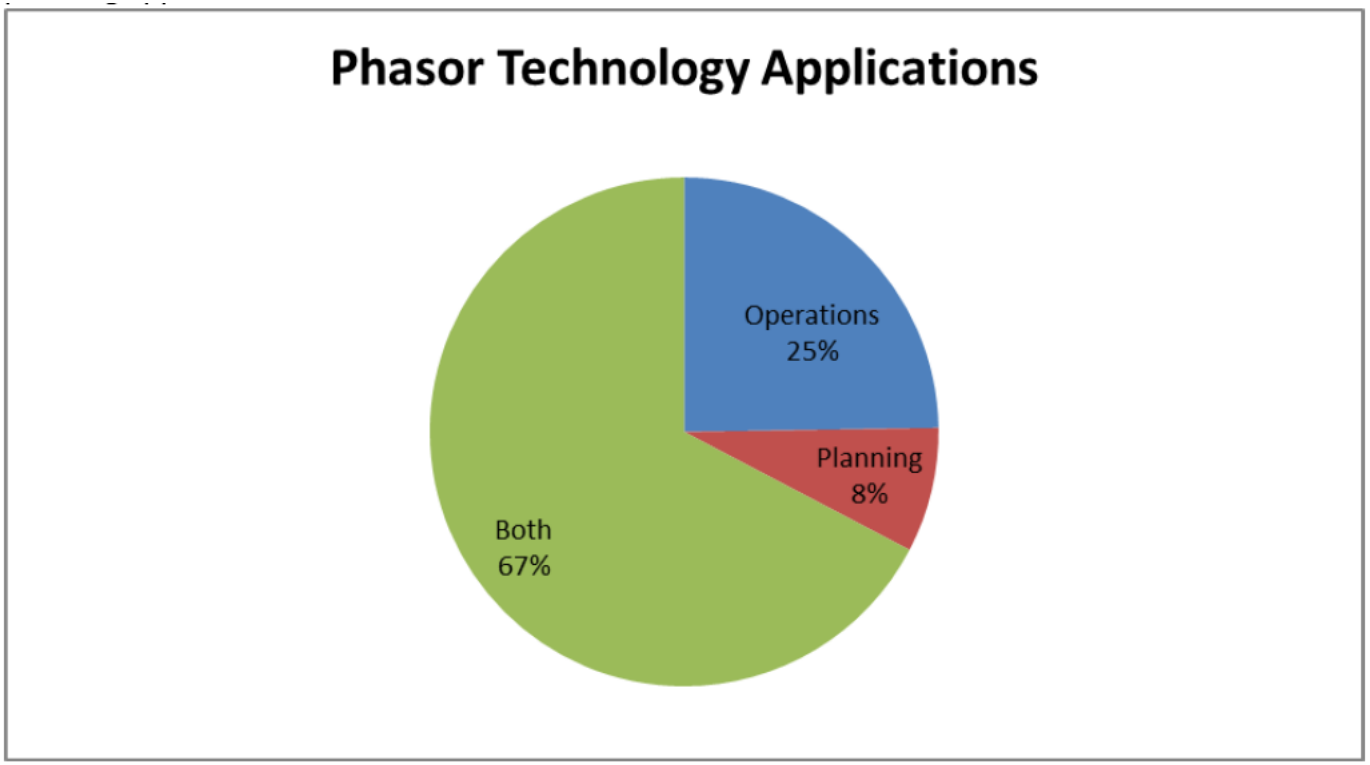
Primary Users

Primary Users	Percent	Count
Real-time Operations	51%	29
Operations Engineering	42%	24
Planning	28%	16
Protection Engineering	25%	14
Other (please specify)	16%	8
Research/R&D/Development	12%	7

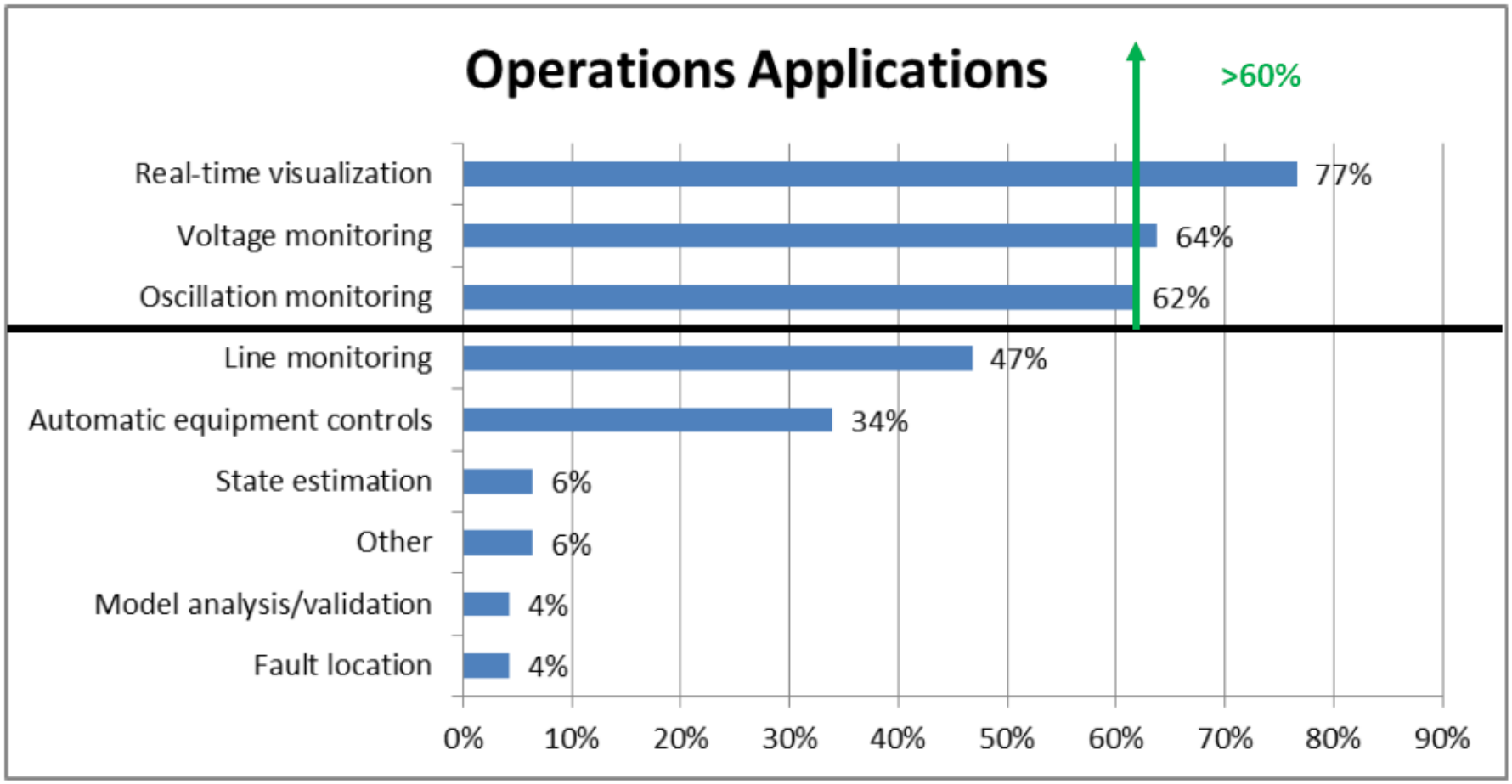
Integrated to Other Systems



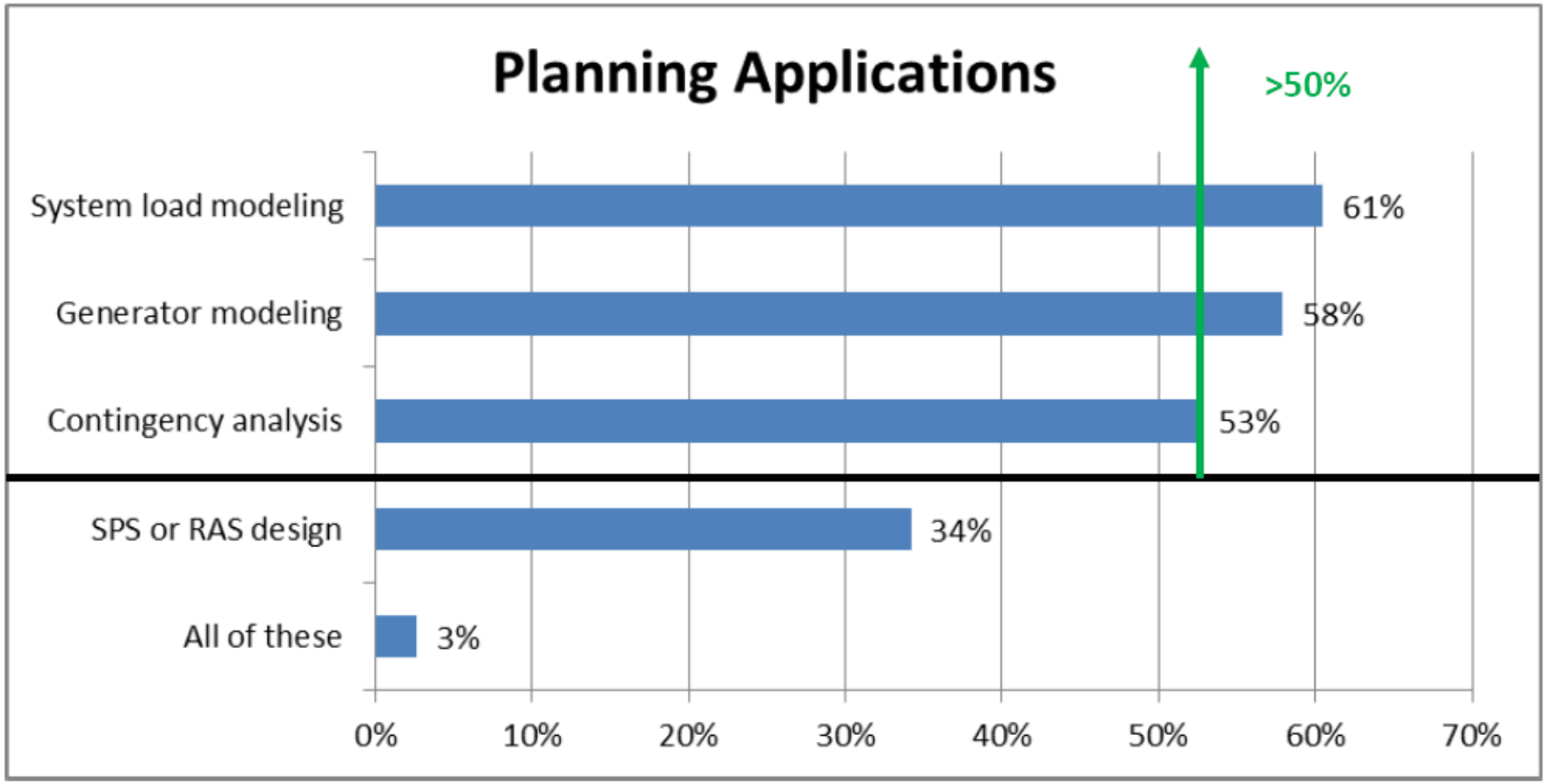
Who will use Phasor Data



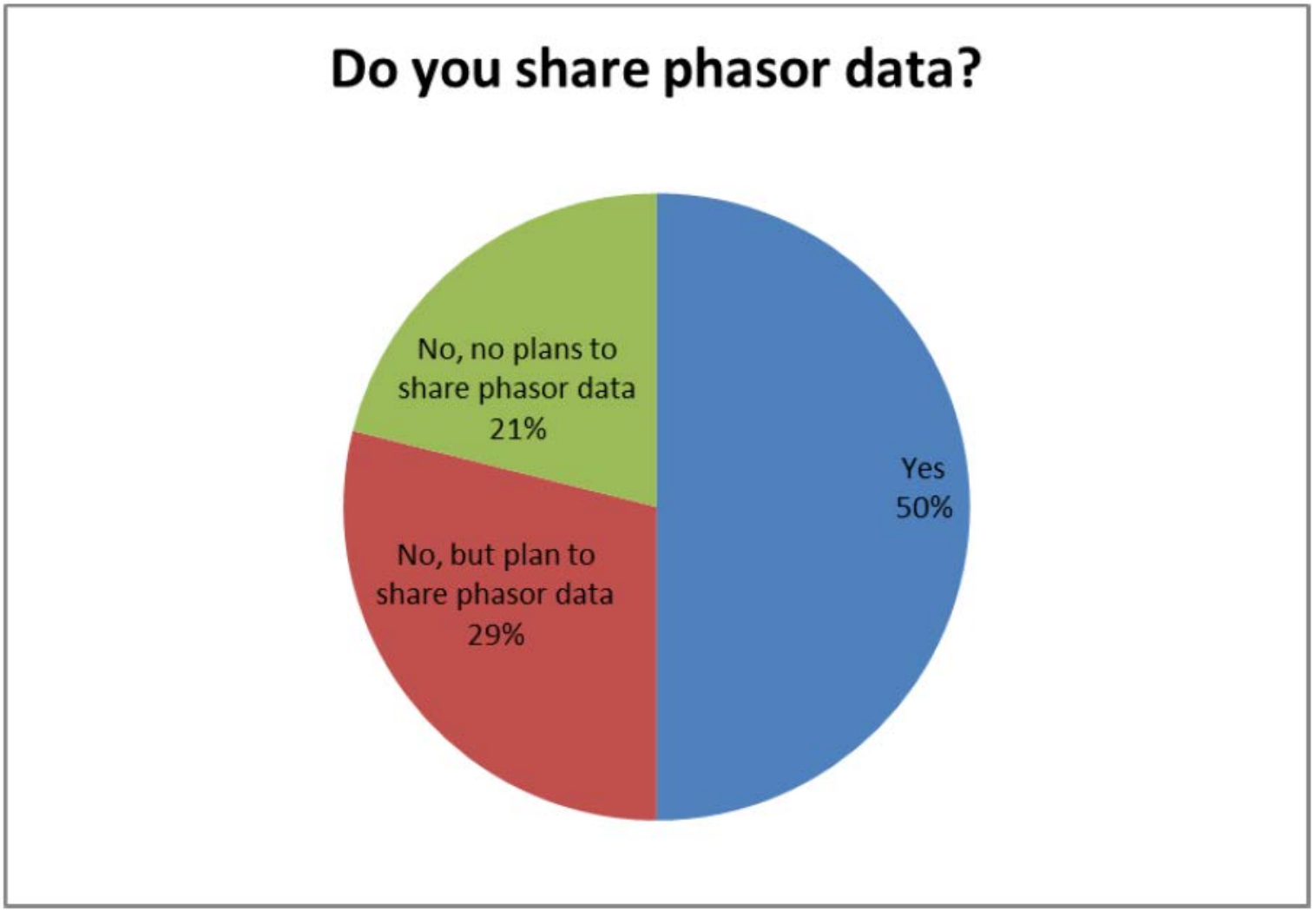
Operation Applications



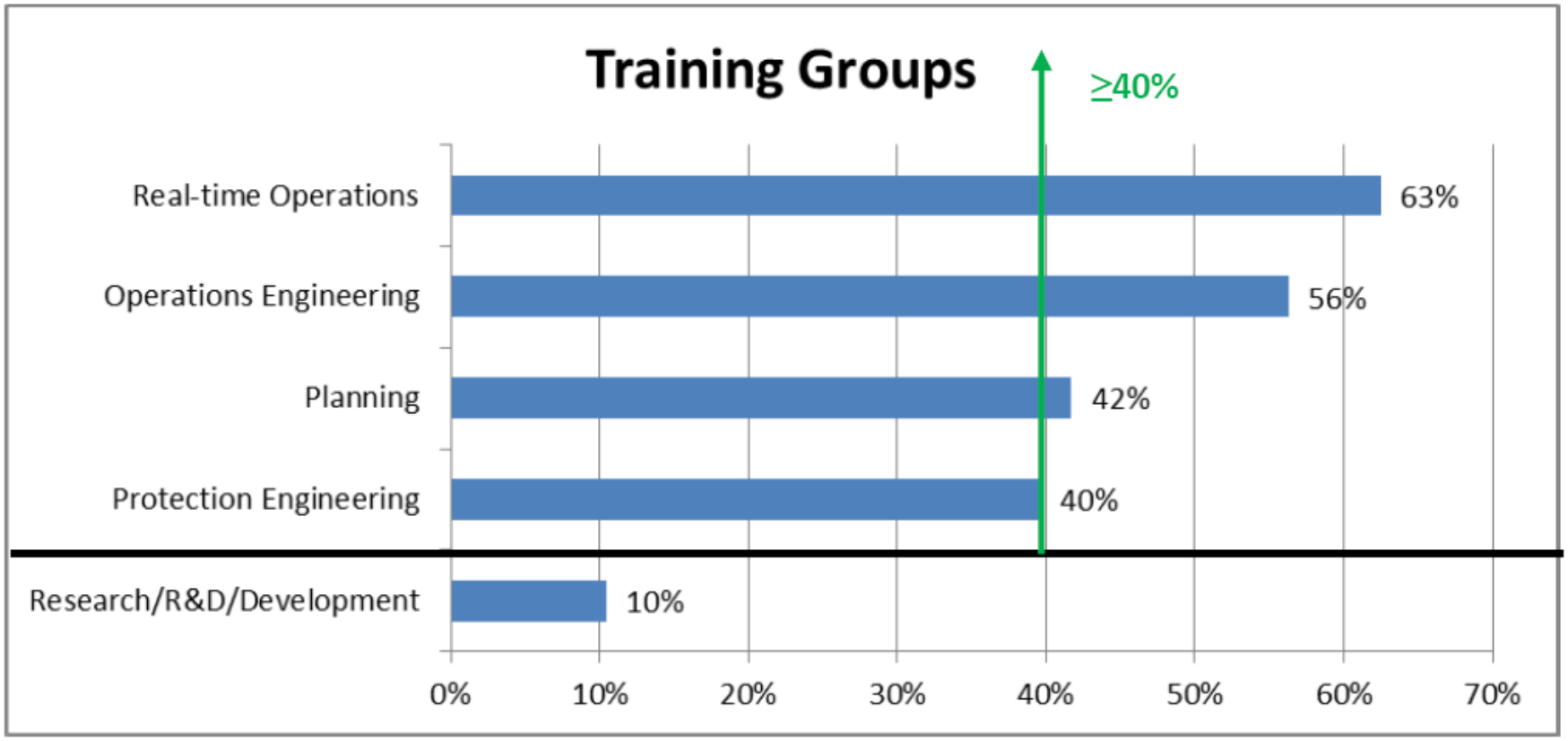
Planning Applications



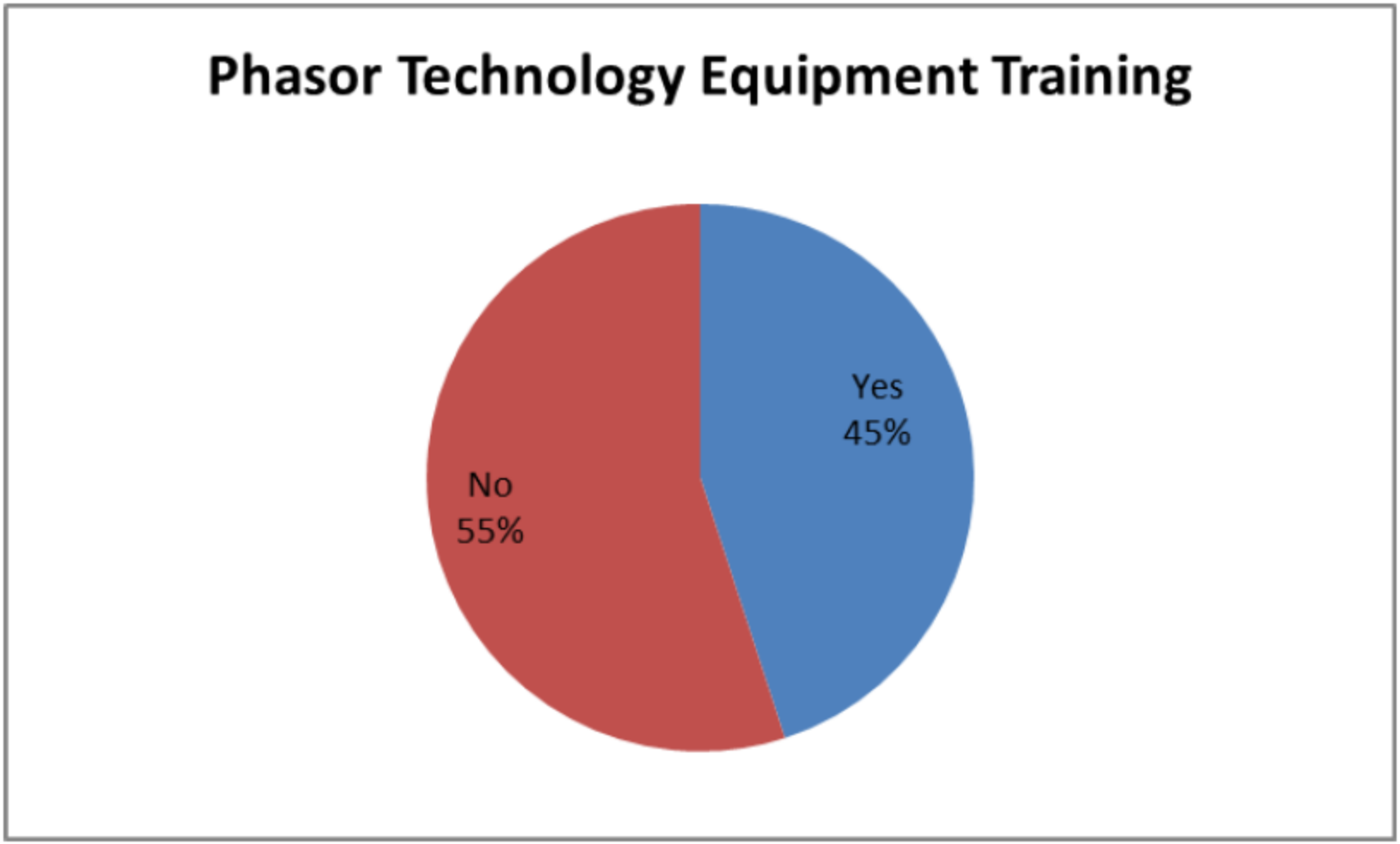
Data Sharing



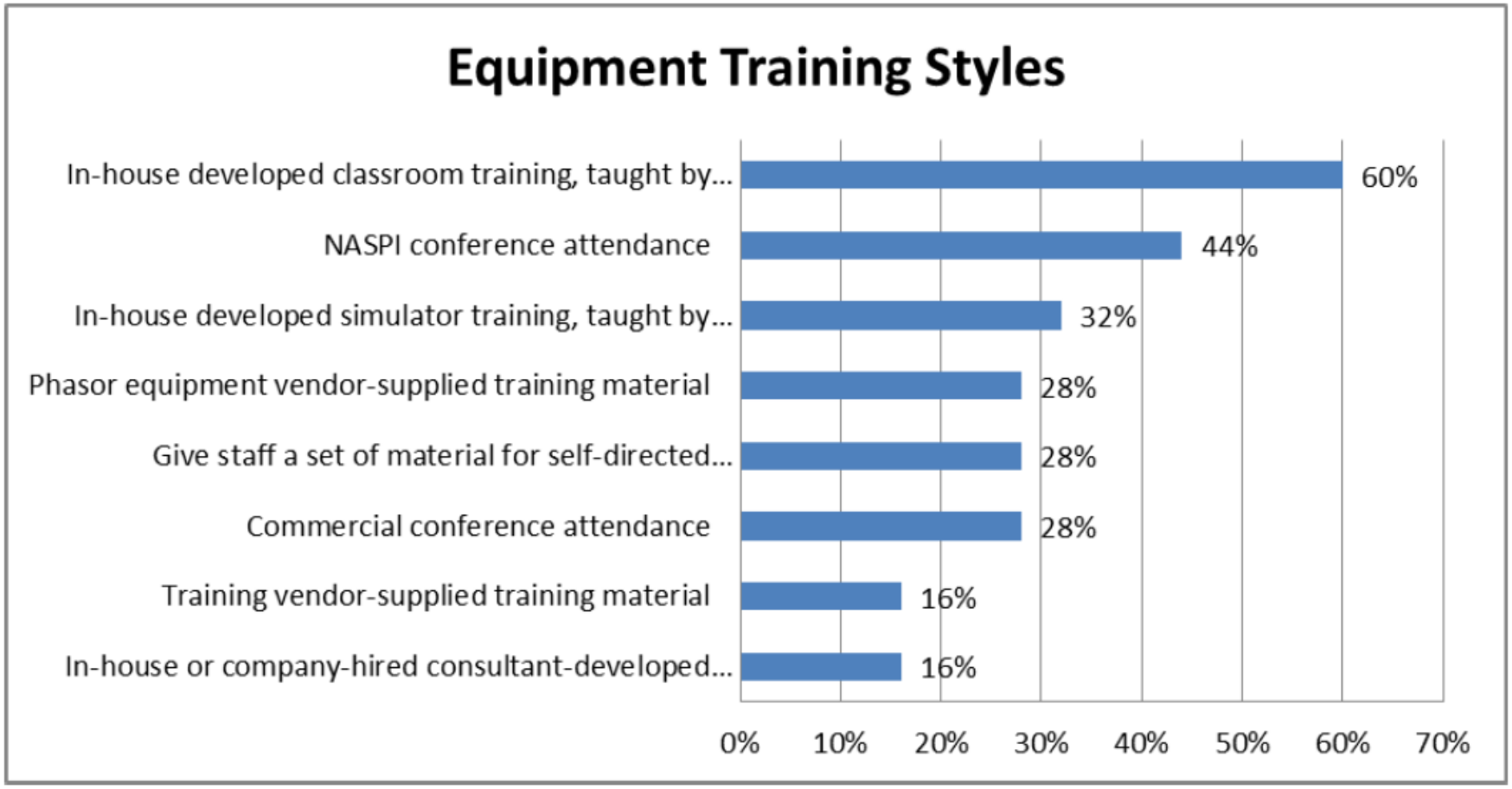
Who Need Training



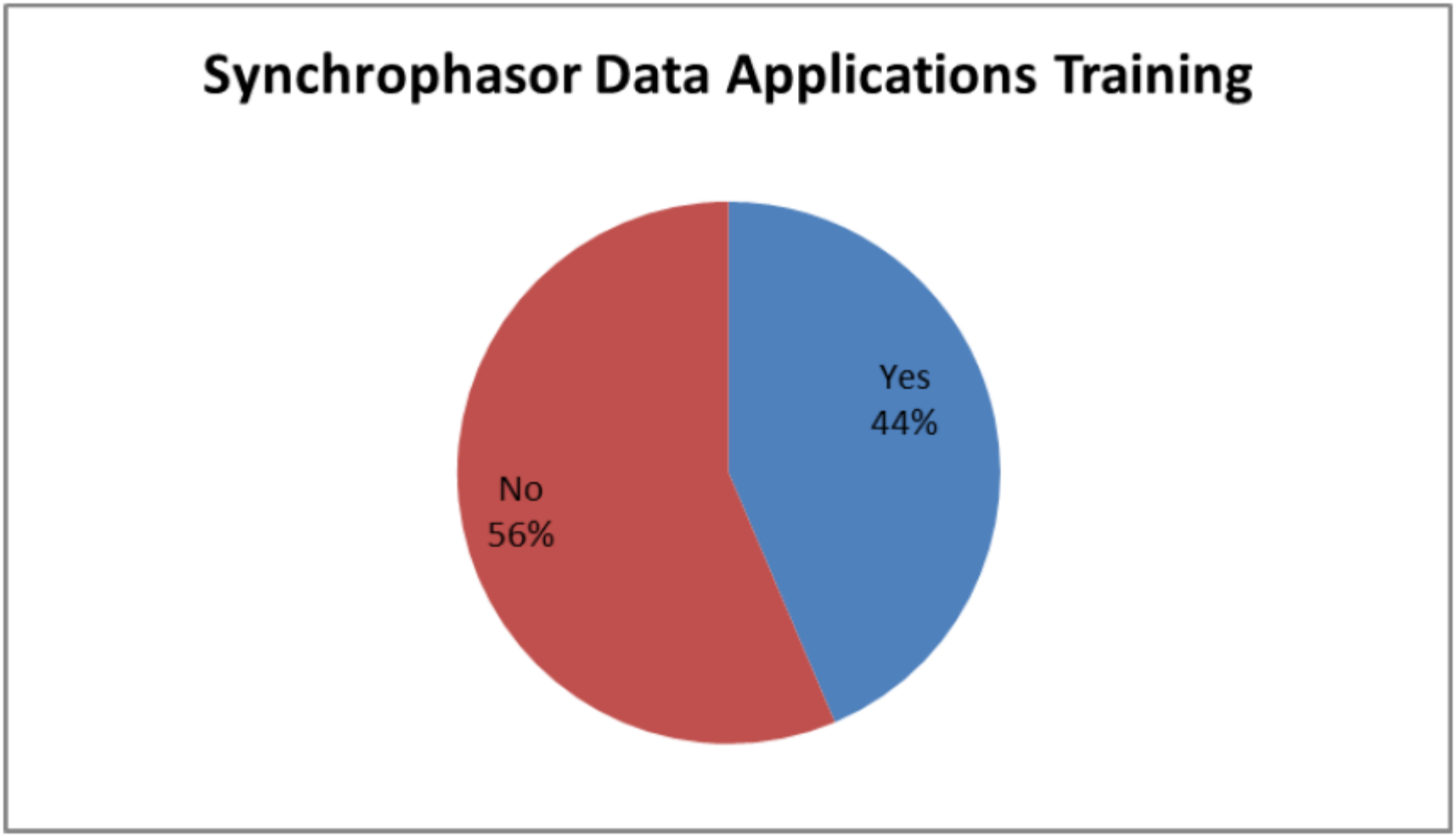
Equipment Training



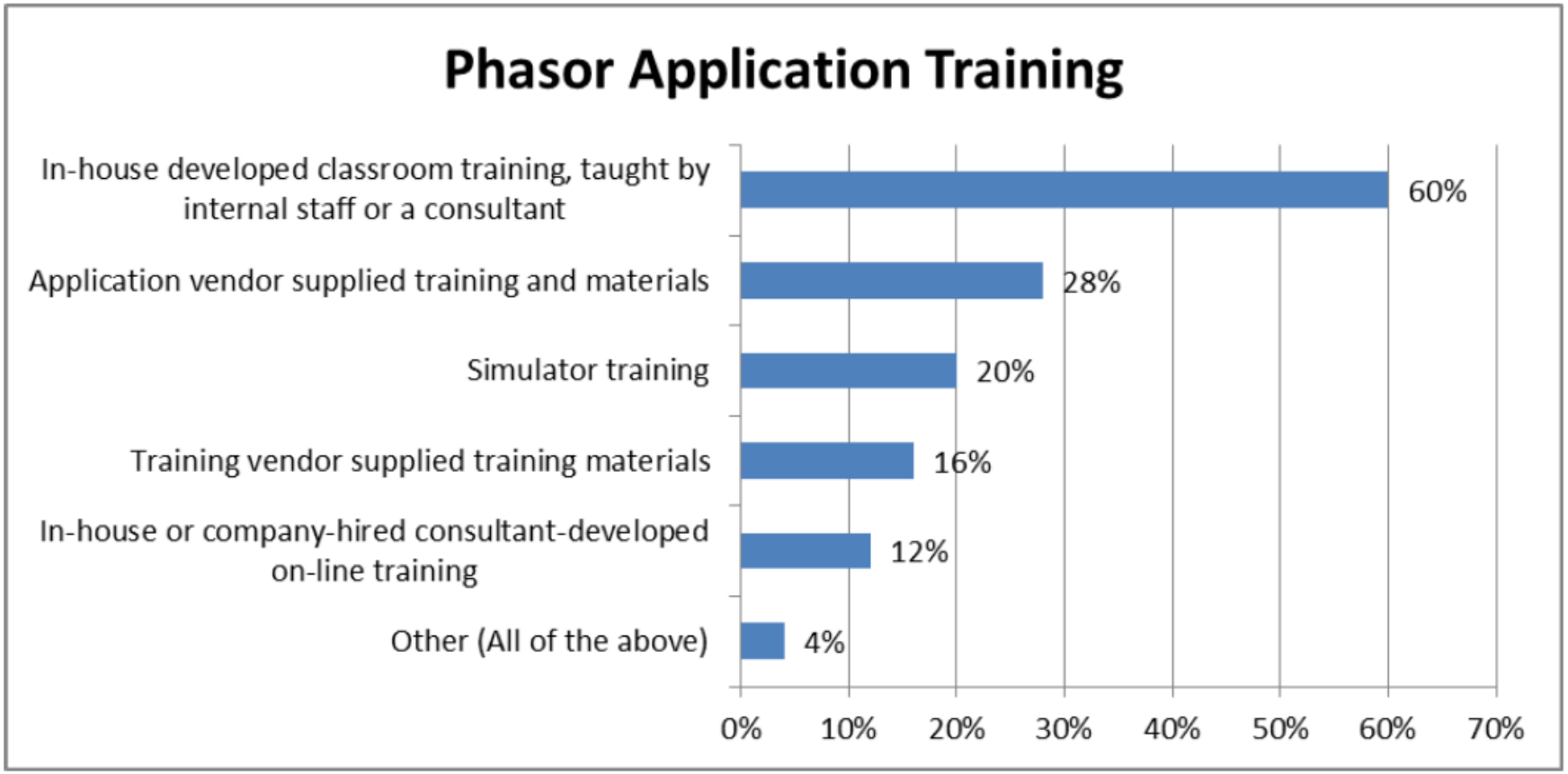
Equipment Training Methods



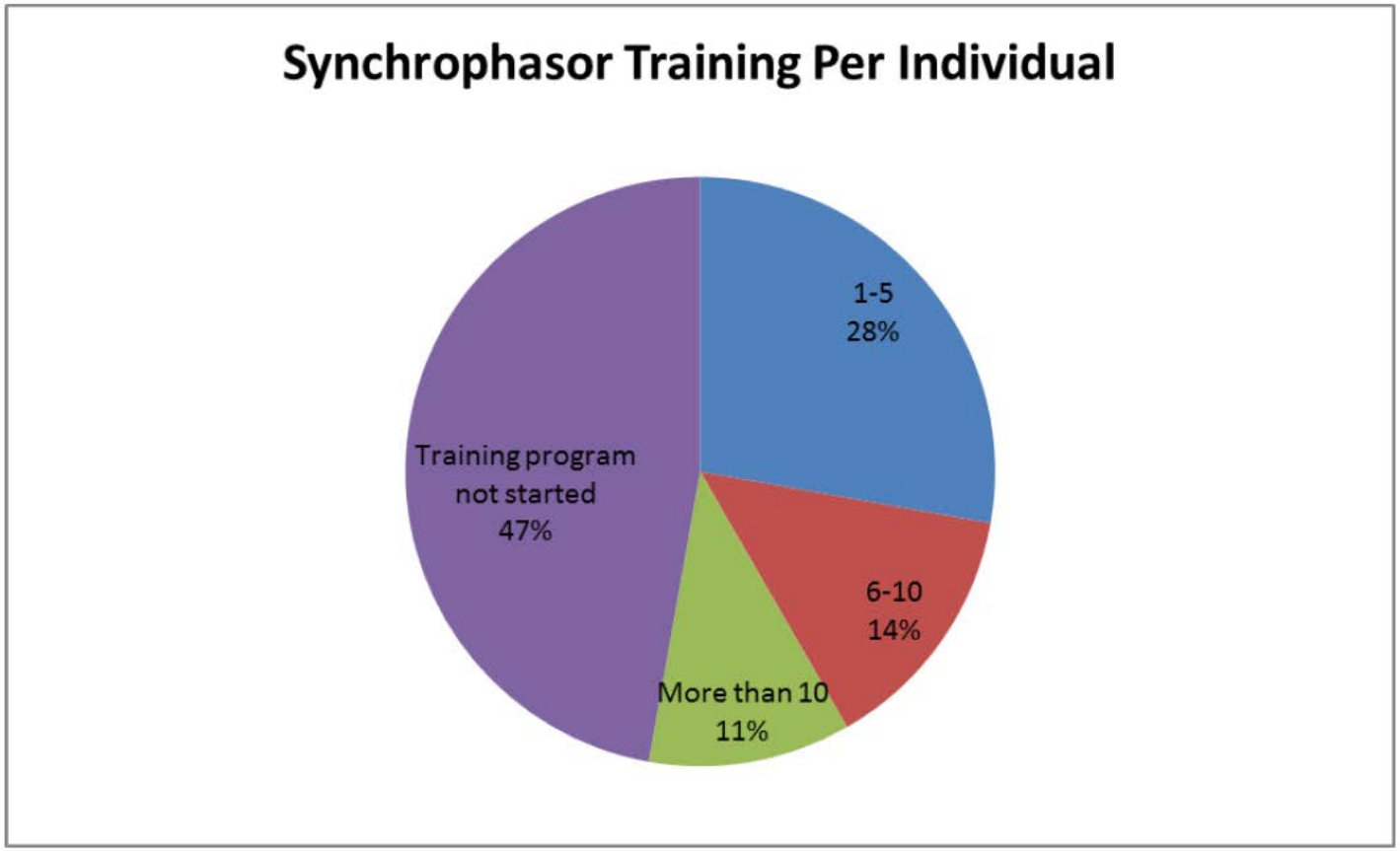
Application Training



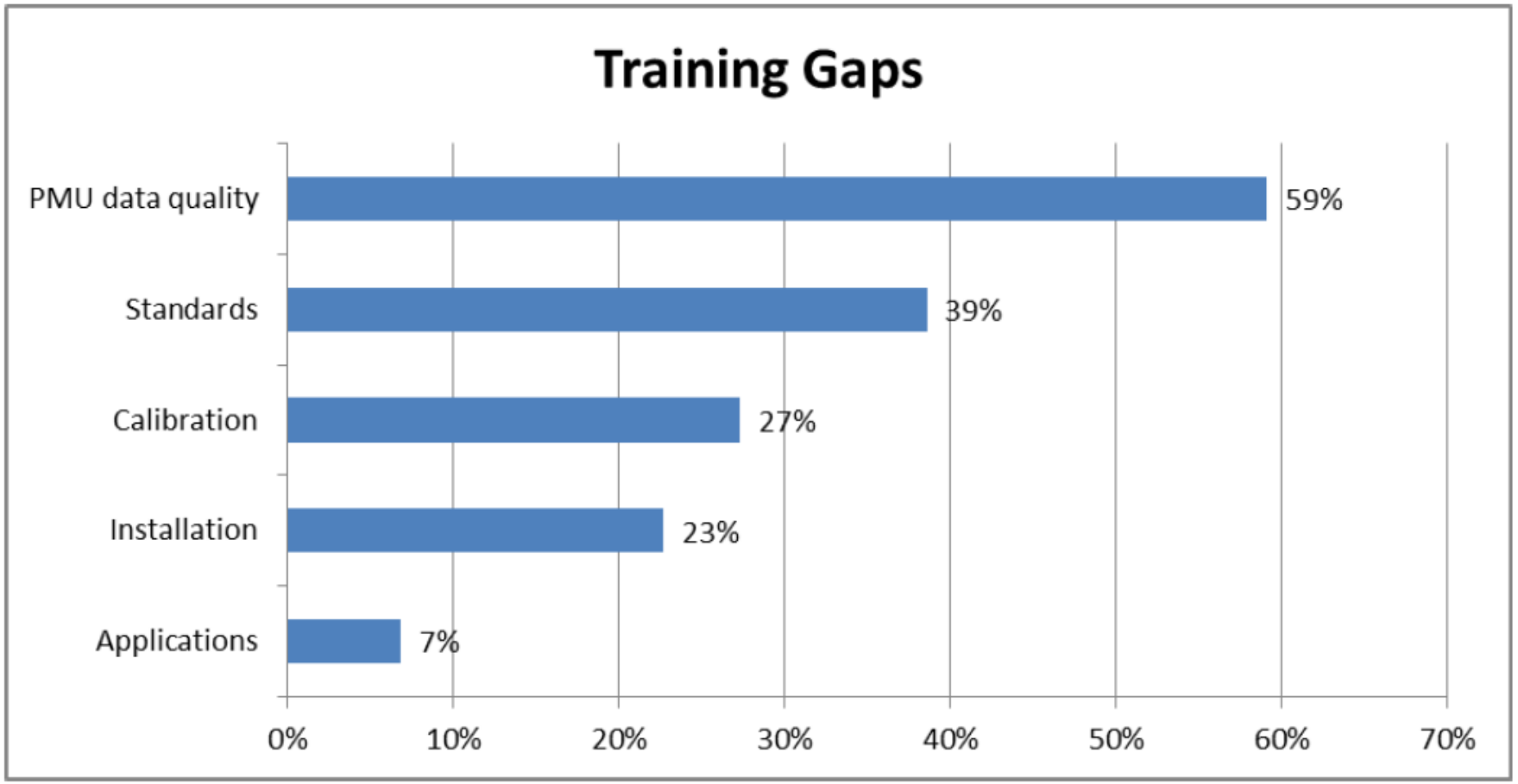
Application Training Methods



Training Hours per Person



Training gaps



Summary of Training Potentials

Training courses that could be offered that may appeal to a wide audience:

- Writing a phasor technology business case for operations
- PMU data quality
- Operations applications course to include:
  - Real-time visualization
  - Voltage monitoring
  - Oscillation monitoring
- Planning applications course to include:
  - System load modeling
  - Generator modeling
  - Contingency analysis
- Sharing phasor data