

ENPRO 360

Innovation in Spirometry

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Incidence of Respiratory Disorders*

- The prevalence of asthma increased 75% from 1980 to 1994
- Annual asthma statistics:
 - A. Results in almost 2,000,000 emergency room visits.
 - B. Causes more than 5,500 deaths/year
 - C. Total health care costs are \$12 billion

*American Lung Association Statistics

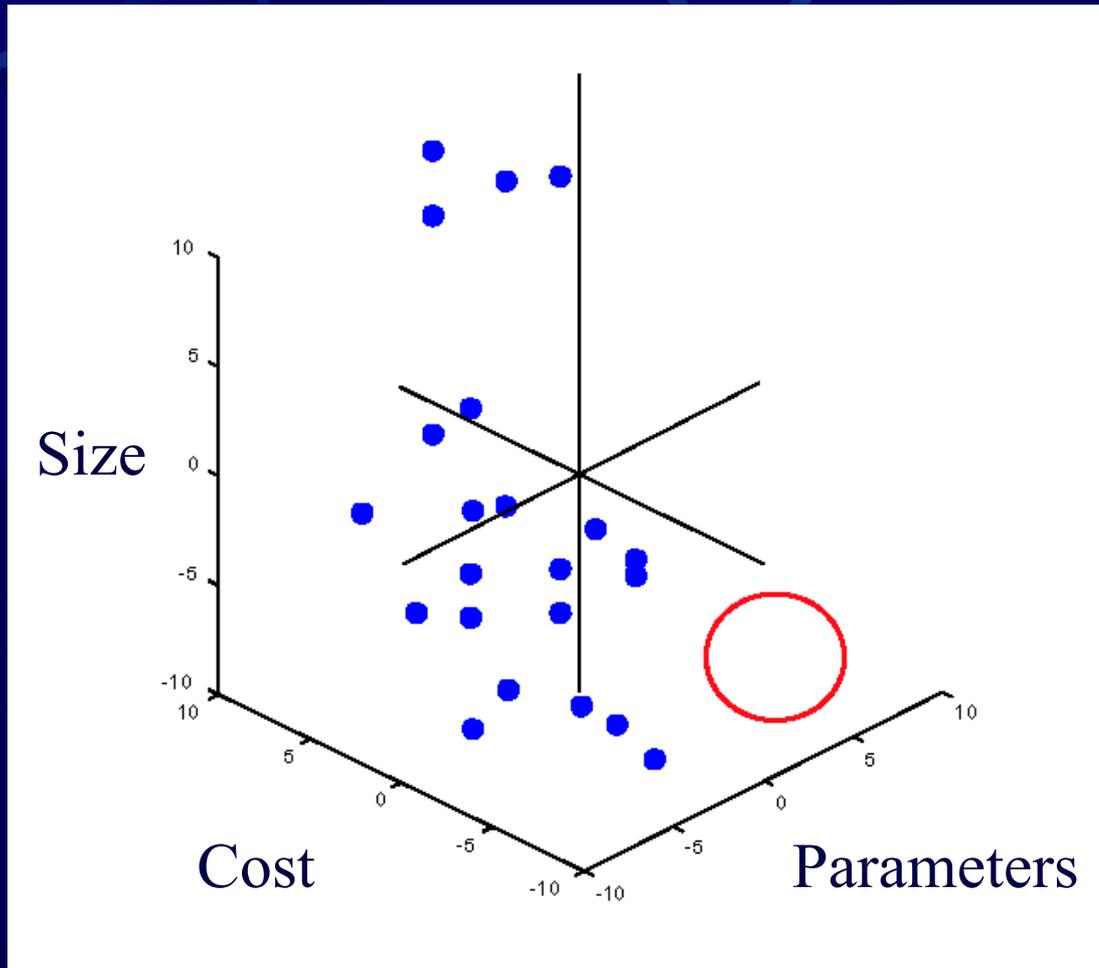
Product Advantages

- Low cost
- High accuracy and precision
- Records flow parameters:
 - FEV1, FVC, VC, Peak Flow, Flow Rate
- Portable, convenient size
- Internal electronic diary
- Durable, dish-washer safe
- No calibration required

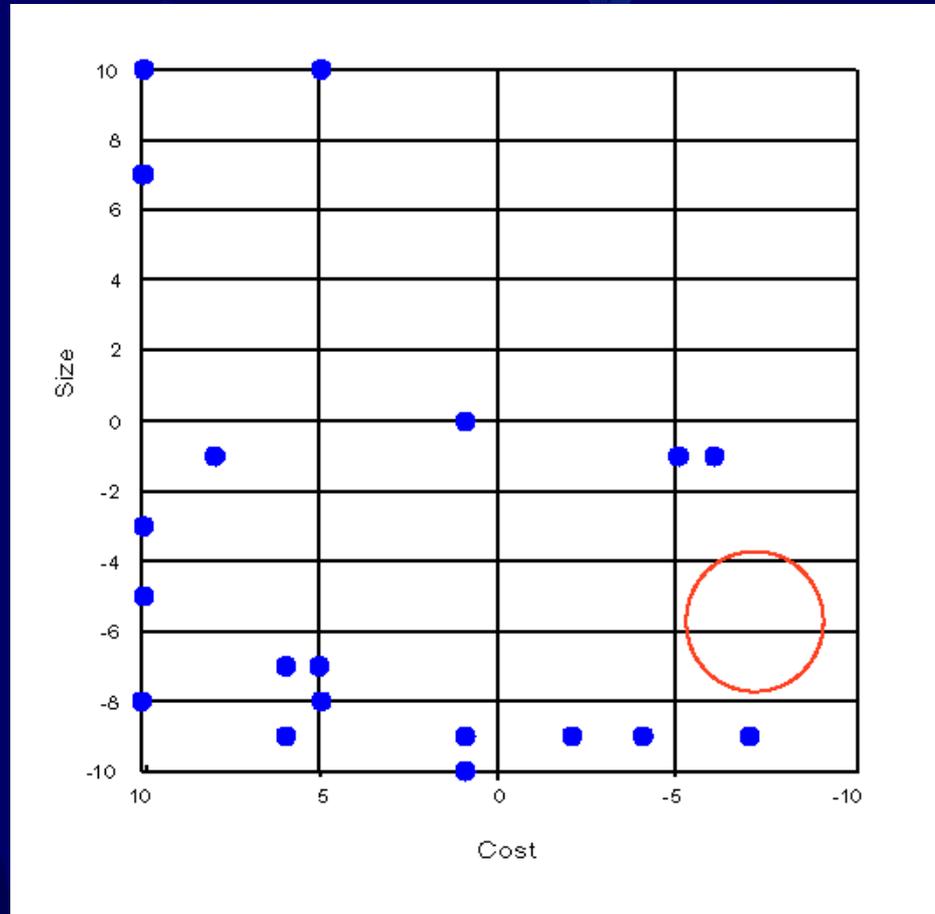
Product Technology

- Air flow oscillates inside the device with no moving parts
- The oscillations are sensed by thermistors
- Detection of the oscillation frequency allows calculation of the flow parameters
- Accuracy is maintained using ATS standards for A-D conversion

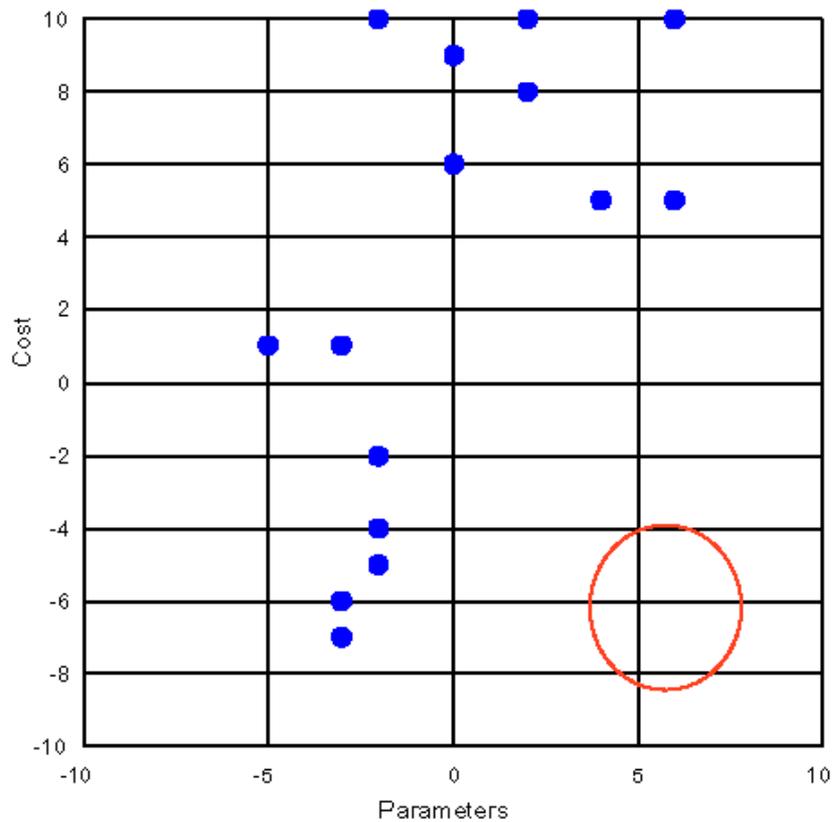
Perceptual Map of Spirometer Market



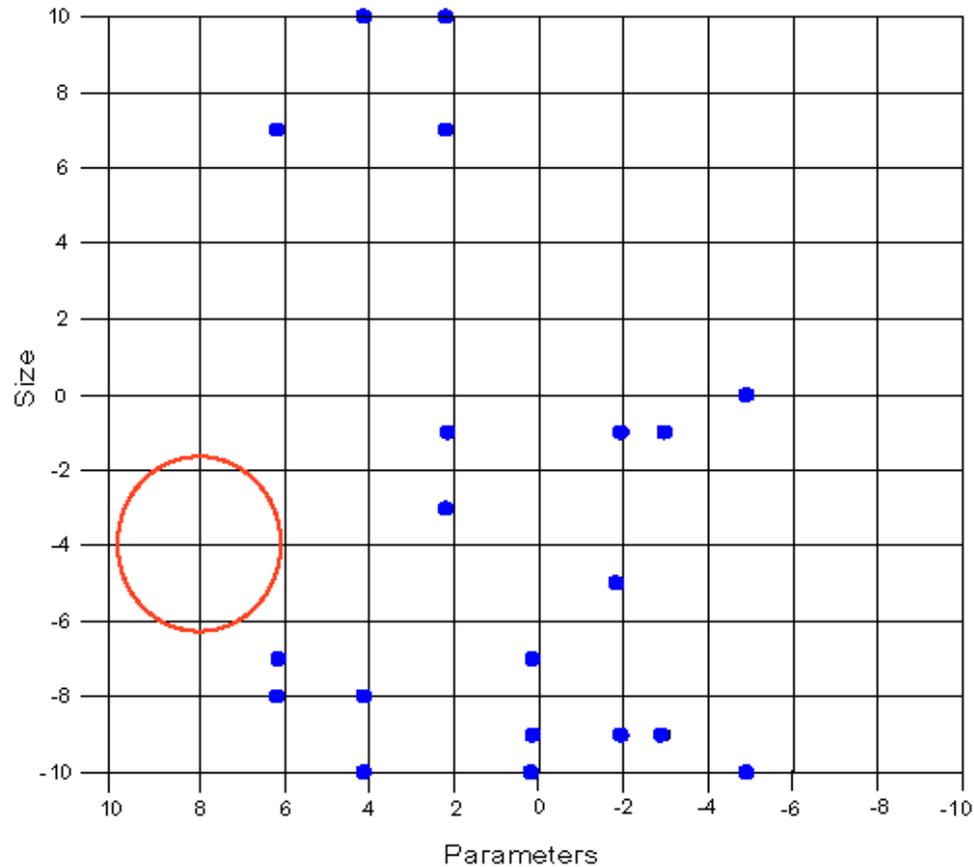
Size vs. Cost



Cost vs. Parameters



Size vs. Parameters



Competition

- Five major diagnostic competitors

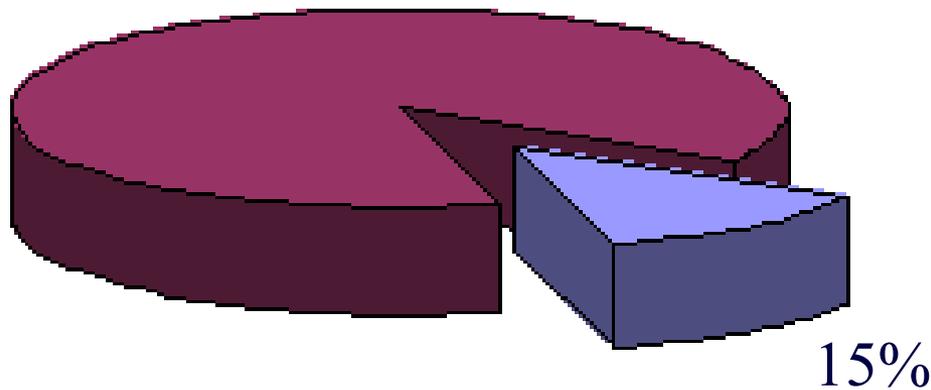
QRS Diagnostic, Schiller AG, Diagnostic Monitoring, Pulmonary Data Systems, Spirometrics

- Four major monitoring competitors

Ferraris Medical, Medical Systems Incorporated, The Breathing Company, Spirometrics

Market Description

- Number of people in the U.S. living with chronic lung disease: 40 million
- Market share



Extended Timeline

ID	Task Name	Start Date	End Date	Duration	2001												2002												2003											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Technology Development and Approvals	1/1/01	1/1/04	784d	★																																			
2	Design of Clinical Prototype	1/1/01	1/1/02	262d	● 1/1/02																																			
3	Patent -- US/Europe	4/1/01	1/1/02	197d	● 4/1/01 ● 1/1/02																																			
4	Mechanical Research Testing	1/1/02	12/31/02	261d	● 1/1/02 ● 12/31/02																																			
5	Publish Mechanical Research Findings	1/1/03	1/1/03	0d	◆ 1/1/03																																			
6	Medical/Clinical Research Testing	1/1/02	1/1/03	262d	● 1/1/02 ● 1/1/03																																			
7	Publish Medical/Clinical Research	1/1/03	1/1/03	0d	◆ 1/1/03																																			
8	FDA Approval	6/1/02	5/30/03	260d	● 6/1/02 ● 5/30/03																																			
9	Independent Testing	1/1/02	5/31/02	109d	● 1/1/02 ● 5/31/02																																			
10	ATS Approval/ EU Standards	6/1/02	6/1/02	0d	◆ 6/1/02																																			
11	Specific Manufacturing Issues	1/1/02	1/1/04	523d	● 1/1/02																																			
12	Financing/ Legal/ Business Structure	4/1/01	1/1/03	458d 16m	★ 4/1/01 ● 1/1/03																																			
13	Board of Advisors	4/1/01	1/1/03	458d 8m	● 4/1/01 ● 1/1/03																																			
14	Legal Support	4/1/01	1/1/02	197d 8m	● 4/1/01 ● 1/1/02																																			
15	Recruit Financing	4/1/01	1/1/02	197d 8m	● 4/1/01 ● 1/1/02																																			
16	Marketing/ Promotion	4/1/01	5/30/03	565d	★ 4/1/01 ● 5/30/03																																			
17	Develop Marketing Strategy	4/1/01	5/30/03	565d	● 4/1/01 ● 5/30/03																																			
18	Introduce Outside Institutions to Clinical Prototype	1/1/02	4/1/02	65d	● 1/1/02 ● 4/1/02																																			
19	Recruit Advocacy Support Group	1/1/03	5/30/03	108d	● 1/1/03 ● 5/30/03																																			

Proposed Future Budget

Development of 5 Clinical Prototypes for External Evaluation				
Item	Size	Model	Rate	Cost
Lexan Material	2"x24"x24"	8574K62	N/A	\$579.19
Shop Time (40 hours)	N/A	N/A	\$40/hour	\$1600.00
Casting Mold Materials (Aluminum)	2"x12"x12"	89155K84	N/A	\$148.00
Mouthpieces -design, mold, cast materials	N/A	N/A	N/A	\$700.00
Electronics - thermistors, breadboard, op-amps, power supply*	N/A	TBD	N/A	\$1338.67
Electronic Technician (40 hours)	N/A	N/A	\$40/hour	\$1600.00
Surface Mount Technology (\$1000/run)	N/A	N/A	N/A	\$3000.00 (approx.)
Student Summer Support (2 students)	N/A	N/A	\$10/hour	\$8000.00
Commercial Spirometer – calibration equipment, research device*	N/A	PDS Koko	N/A	\$2370.00
Total				\$19335.86

*Product price quotation included in Appendix III

Conclusion

- This is an opportunity that demands immediate action
- May 2nd is Asthma Awareness Day on Capitol Hill