SmartGuardian

Implementation of Smart Home Facilities in Personal and Assisted Living Environments to Physiologically Monitor Elderly Individuals

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Executive Summary

- Elderly Population in New York & New Jersey
- SmartGuardian proposes a physiological monitoring system which collects, organizes, and stores crucial data.
- No change of lifestyle and transforms daily activities into hi-tech methods of data collection.
- Plan to modernize the assisted living industry by eliminating the need for personal care and instead providing systems which allow for personalized medicine.

Significance

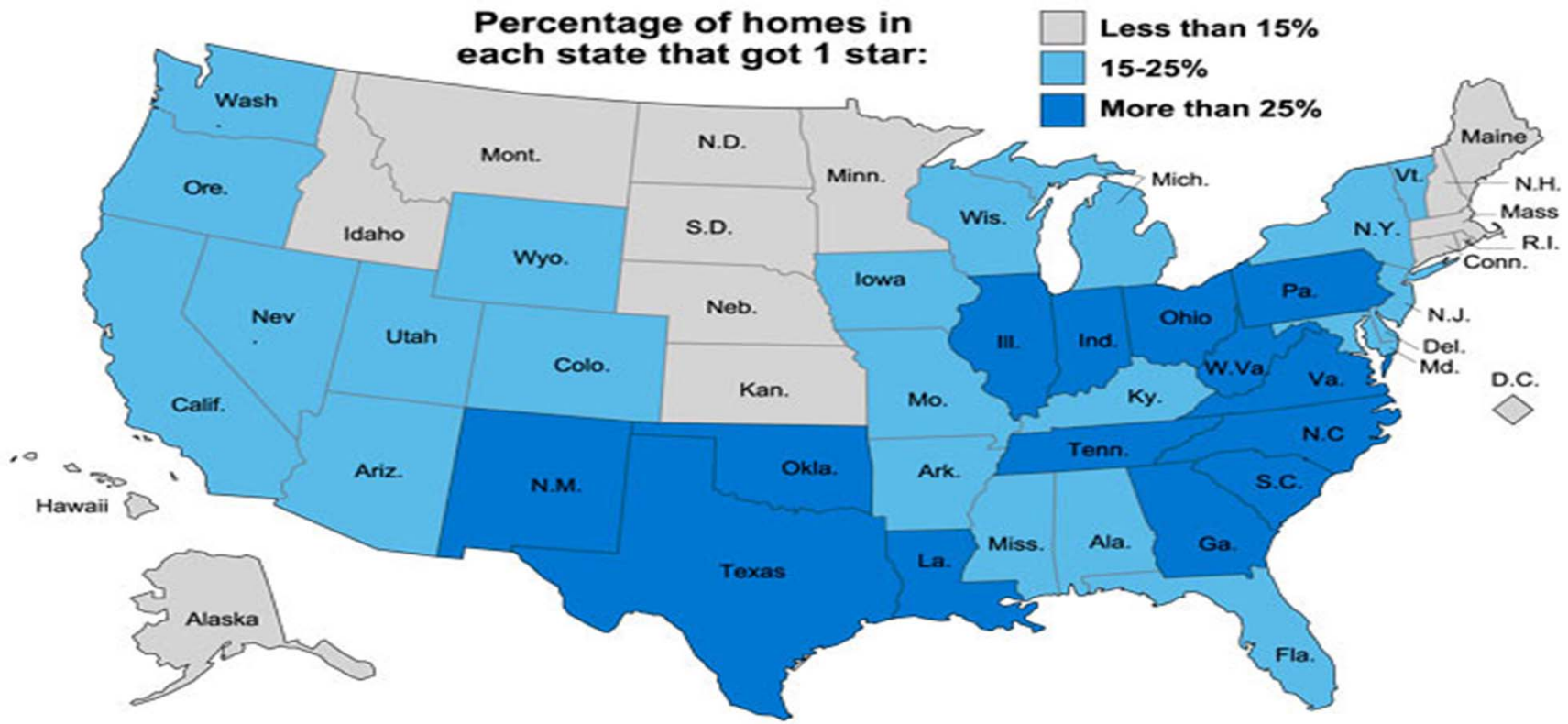
- Increase safety and independence for elderly population
- Organization and Storage of the following Physiological values:
  - Heart rate
  - Blood pressure
  - Stool samples
  - Temperature
  - Pulse Oximeter
- Potential for:
  - Reduced healthcare costs
  - Prolonging human lifespan

Potential Impact and Market

- Personalizing medical evaluation according to patients needs
- Individualized data gives patients and healthcare providers organized information – proper, personalized diagnosis
- “Smart” bathrooms installed helps store data in a system from each elderly person which can be accessible by medical professionals
- New alert mechanism if there are abnormal readings

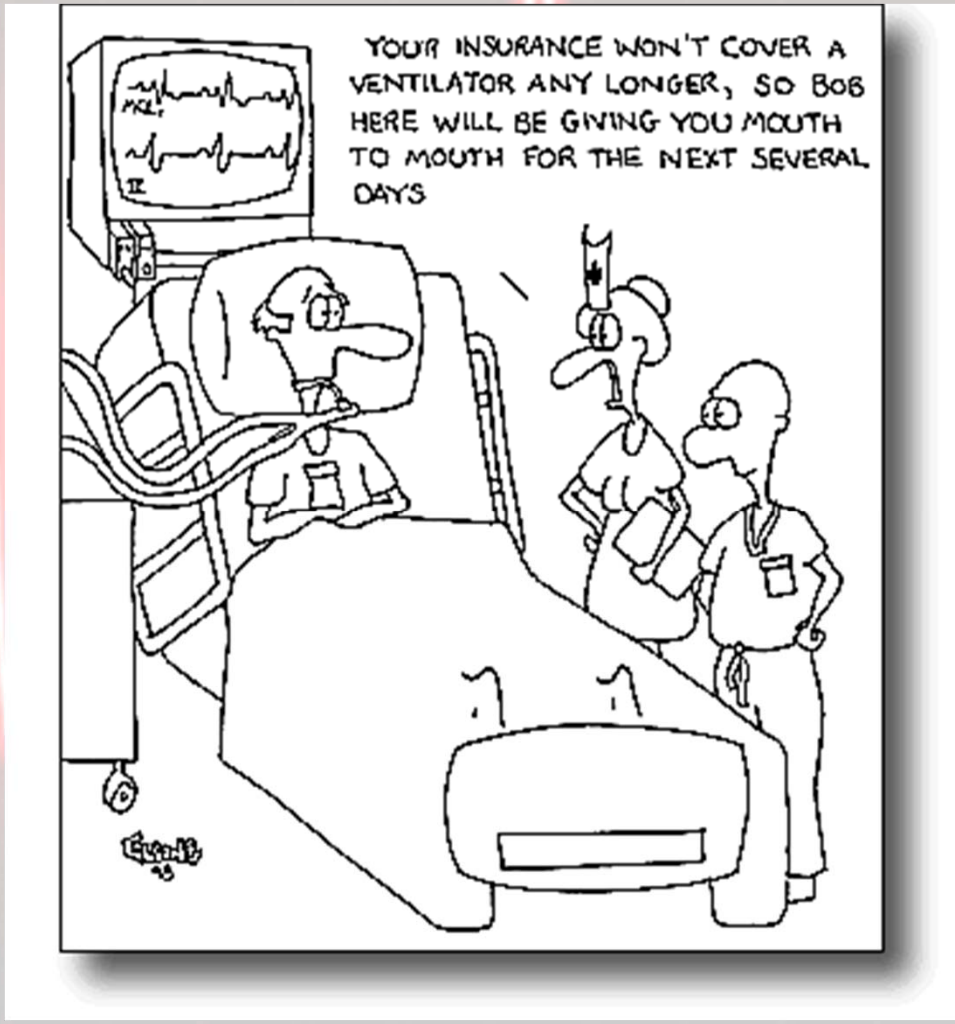
Inadequacy of Nursing Homes

A state-by-state look at the concentration of lowest-rated nursing homes, which the government assigned a 1 star (out of 5) for overall quality.



Source: USA TODAY analysis of data from the Centers for Medicare & Medicaid Services

Inadequacy of Nursing Homes cont'd



Market Analysis

- Over 39 million U.S. citizens over 65
- Over 17,000 nursing facilities in addition to extended living homes and senior communities
- Target community:
  - Year 1-5: Tri-state area (NY, NJ, PA)
  - 10% of entire senior community (Approx. 4 million consumers)
- Eventually, SmartGuardian would reach coast to coast in the United States and soon enough, it can be implemented on a global scale

Competition

Research Currently being done at the following institutions:

- **The University of Florida –**
  "Matilda's Smart House"

- **The Medical Automation Research Center (MARC) –**
  Home Automation Technology involving sensors and motion detectors

- **The University of Portsmouth –**
  Research on Sensor integration in Smart Homes

- **The Fraunhofer Institute for Experimental Software Engineering (IESE) -**
  "inBath" ; high-frequency sensors and radio-frequency identification sensors

- **Intel**
  Microelectromechanical Systems (MEMS)

Inadequacy of Current Technology

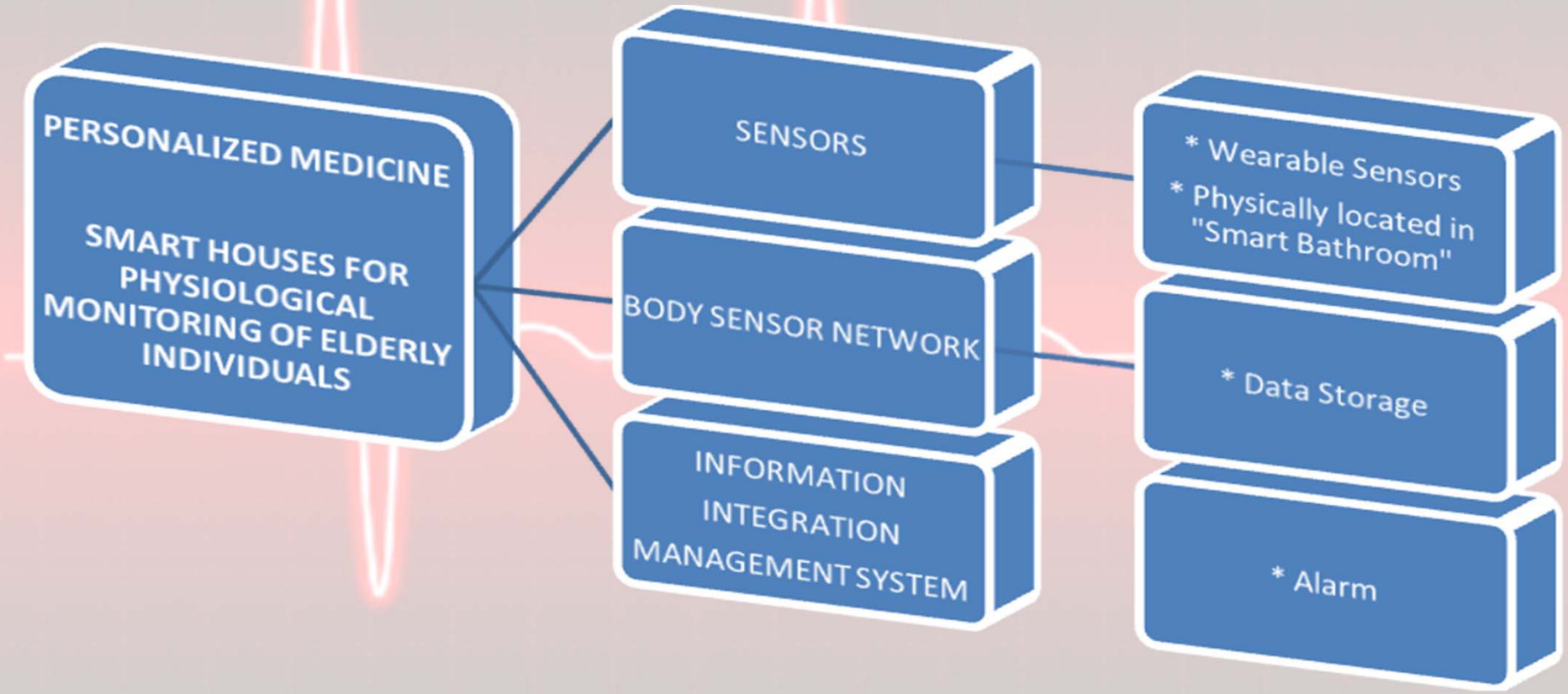
- Main Focus on Behavioral Monitoring
- Problem with sole focus on Behavioral Monitoring:

Elderly individuals may have: visual, auditory, or cognitive impairment and may have trouble navigating modern day technology

OUR TECHNOLOGY

- Focus on Physiological Monitoring
- Potential for Integrating both Physiological and Behavioral Monitoring

Proposed Plan



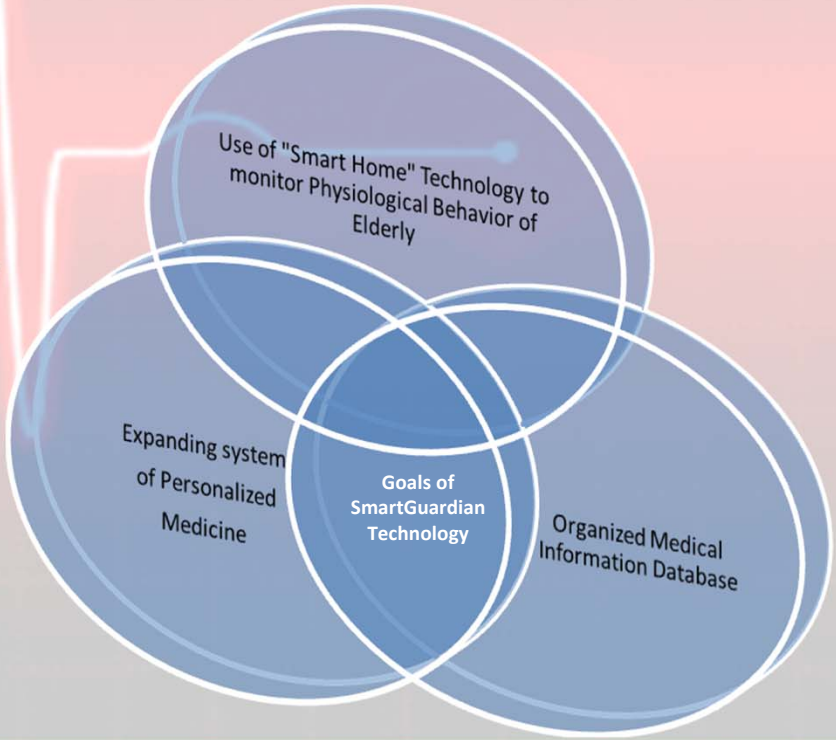
The Company

SmartGuardian

A Company striving to implement a Personal Approach to a Global Issue

- Mission and Goals:

  - *Freedom, independence, safety, and well-being of the aging population*
  - *Physiological monitoring in home and nursing home facilities*
  - *Integrate our medical information storage databases to move towards a system of personalized medicine*



Business Management Plan

Team Member Expertise and Roles:

•Jilyan Decker: Biomedical Engineering Major
Role: Research and Development

•Kathleen Uske: Biomedical Engineering Major
Role: Director and Representative

•Carmel Pratt: Architecture Major
Role: Marketing and Design

•Terence DiCorcia: Civil Engineering Major
Role: Research and Structural Engineering

Other Collaborators:

•Need for Electrical Engineering Expertise

Project Management

- We plan to go straight to the source by doing business directly with the assisted living facilities which would be installing our units.
  - We will sell our units directly to the facilities (CareOne, ViLiving, etc.) to lessen the inflation costs and develop business relationships with our clients.
  - There will be no need to advertise, as we will go directly to the source and allow the corporations themselves to advertise their implementation of our product.
  - We will service our own units and keep in close contact with every location we install our systems into.

Proposed Personnel Needs:

- Technicians for installing systems
- Scientists for research and prototyping
- Doctors for approval of equipment and medical data

Project Risks:

- Failure of units
- Lack of demand from assisted living facilities
- Hesitation of implementation and use by senior citizens

Financial Plan

Required Start-Up Funds		Amount	Totals
Fixed Assets			
Real Estate-Land	$	20,000	
Buildings		30,000	
Leasehold Improvements		5,000	
Equipment		30,000	
Furniture and Fixtures		5,000	
Vehicles		5,000	
Other Fixed Assets		10,000	
Total Fixed Assets			105,000
Operating Capital			
Pre-Opening Salaries and Wages		240,000	
Prepaid Insurance Premiums		5,000	
Inventory		5,000	
Legal and Accounting Fees		25,000	
Rent Deposits		1,500	
Utility Deposits		1,500	
Supplies		40,000	
Advertising and Promotions		-	
Licenses		1,000	
Other Initial Start-Up Costs		1,000	
Working Capital (Cash On Hand)		25,000	
Total Operating Capital			345,000
Total Required Funds			$ 450,000

Financial Plan (continued)

Cost Description		Fixed Costs ($)	Variable Costs (%)
Variable Costs			
Cost of Goods Sold	$	10,000	0.0%
Inventory	$	5,000	0.0%
Raw Materials	$	5,000	0.0%
Direct Labor (Includes Payroll Taxes)	$	200,000	0.0%
Fixed Costs			
Salaries (includes payroll taxes)	$	240,000	
Supplies	$	50,000	
Repairs & maintenance	$	10,000	
Advertising	$	-	
Car, delivery and travel	$	20,000	
Accounting and legal	$	25,000	
Rent	$	50,000	
Telephone	$	3,000	
Utilities	$	5,000	
Insurance	$	1,000	
Taxes (Real estate, etc.)	$	2,000	
Interest	$	2,000	
Depreciation	$	2,000	
Other (specify)	$	100,000	
Other (specify)	$	-	
Miscellaneous expenses	$	-	
Principal portion of debt payment	$	-	
Owner's draw	$	-	
Total Fixed Costs	$	730,000	
Total Variable Costs			0%
Breakeven Sales level =		730000	

Financial Plan (continued)

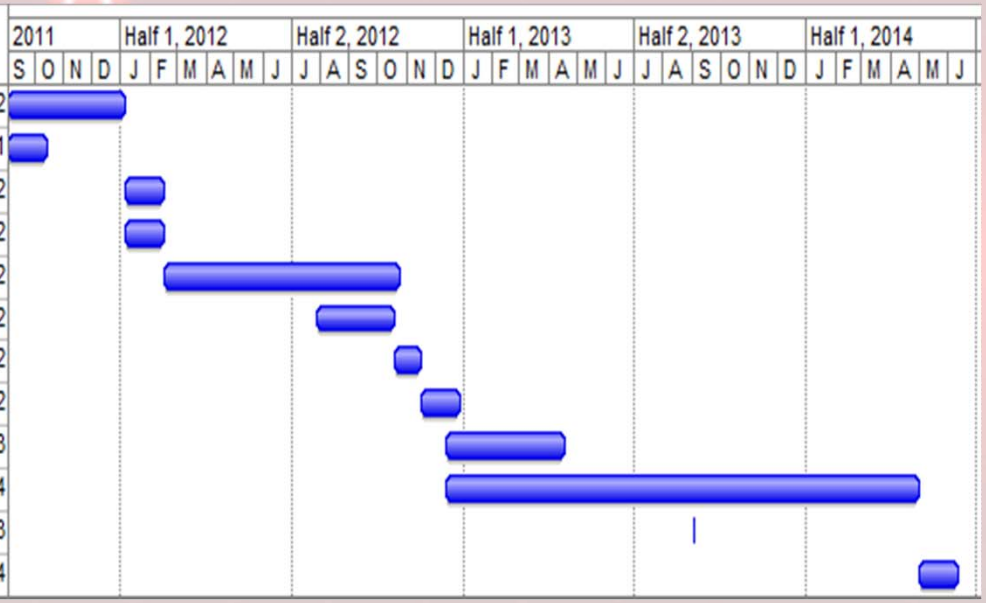
	2012	%	2013	%	2014	%	2015	%	2016	%
Sales	$ -	0.00%	$ -	0.00%	$ 500,000	100.00%	$ 2,500,000	100.00%	$ 10,000,000	100.00%
Cost/ Goods Sold (COGS)	-	0.00%	-	0.00%	100,000	20.00%	500,000	20.00%	2,000,000	20.00%
Gross Profit	$ -	0.00%	$ -	0.00%	$ 400,000	80.00%	$ 2,000,000	80.00%	$ 8,000,000	80.00%
Operating Expenses										
Salary (Office & Overhead)	$ 240,000	-	$ 240,000	-	$ 420,000	84.00%	$ 600,000	120.00%	$ 800,000	160.00%
Payroll (taxes etc.)	-	-	-	-	-	0.00%	-	0.00%	-	0.00%
Outside Services	-	-	50,000	-	50,000	10.00%	150,000	30.00%	150,000	30.00%
Supplies (off and operation)	50,000	-	100,000	-	100,000	20.00%	500,000	100.00%	2,000,000	400.00%
Repairs/ Maintenance	-	-	-	-	100,000	20.00%	100,000	20.00%	750,000	150.00%
Advertising	-	-	-	-	-	0.00%	-	0.00%	-	0.00%
Car, Delivery and Travel	2,000	-	2,000	-	7,000	1.40%	25,000	5.00%	40,000	8.00%
Accounting and Legal	25,000	-	5,000	-	3,000	0.60%	3,000	0.60%	3,000	0.60%
Rent	50,000	-	50,000	-	50,000	10.00%	50,000	10.00%	50,000	10.00%
Telephone	3,000	-	3,000	-	3,000	0.60%	3,000	0.60%	3,000	0.60%
Utilities	5,000	-	5,000	-	5,000	1.00%	5,000	1.00%	5,000	1.00%
Insurance	1,000	-	1,000	-	1,000	0.20%	1,000	0.20%	1,000	0.20%
Taxes (real estate etc.)	4,000	-	4,000	-	4,000	0.80%	4,000	0.80%	4,000	0.80%
Interest	2,000	-	2,000	-	2,000	0.40%	2,000	0.40%	2,000	0.40%
Depreciation	2,000	-	2,000	-	2,000	0.40%	2,000	0.40%	2,000	0.40%
Other expense (specify)	100,000	-	75,000	-	75,000	15.00%	75,000	15.00%	75,000	15.00%
Other expense (specify)	-	-	-	-	-	0.00%	-	0.00%	-	0.00%
Total Expenses	$ 484,000	-	$ 539,000	-	$ 822,000	164.40%	$ 1,520,000	304.00%	$ 3,885,000	777.00%
Net Profit Before Tax	(484,000)		(539,000)		(422,000)		480,000		4,115,000	
Income Taxes	-		-		-		-		-	
Net Profit After Tax	(484,000)		(539,000)		(422,000)		480,000		4,115,000	
Owner Draw/ Dividends	-		-		-		-		-	
Adj. to Retained Earnings	$ (484,000)		$ (539,000)		$ (422,000)		$ 480,000		$ 4,115,000	

Phase-1 IDS Budget

- Need certain inventory and supplies, including:
  - Sensors
  - Software
  - Laptop
- Not anticipating expenses to exceed $5000
- Further evaluation of the budget will be completed upon more complete research

Tracking Progress

ID	Task Name	Duration	Start	Finish
1	Research and Development of Sensors	90 days	Thu 9/1/11	Wed 1/4/12
2	Research and Development of PC Tablet/Con	30 days	Thu 9/1/11	Wed 10/12/11
3	Market Research and Analysis	30 days	Wed 1/4/12	Tue 2/14/12
4	Resources & Raw Material Analysis	30 days	Wed 1/4/12	Tue 2/14/12
5	Model Design	180 days	Tue 2/14/12	Mon 10/22/12
6	Prototype Development	60 days	Thu 7/26/12	Wed 10/17/12
7	Test Prototype	21 days	Wed 10/17/12	Wed 11/14/12
8	Revise & Evaluate Prototype	30 days	Wed 11/14/12	Tue 12/25/12
9	Product Business/Design Proposal	90 days	Wed 12/12/12	Tue 4/16/13
10	Sell SmartGuardian to Potential Buyers	360 days	Wed 12/12/12	Tue 4/29/14
11	Breakeven/ Achieve Payback	1 day	Mon 9/2/13	Mon 9/2/13
12	Expansion/Upgrades	30 days	Tue 4/29/14	Mon 6/9/14



Acknowledgements

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