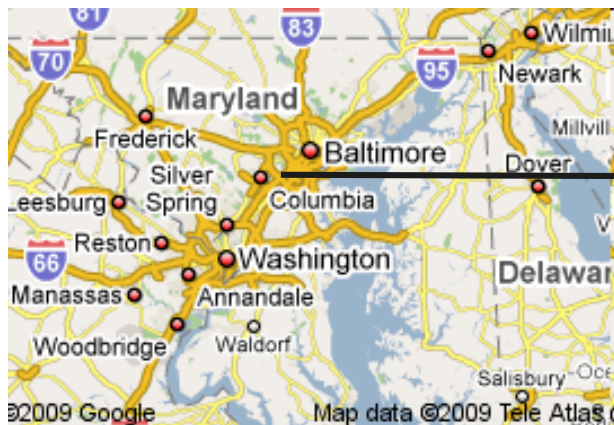


Opportunity Assessment and Feasibility analysis

Workshop on Entrepreneurship for Scientists and Engineers Durban, South Africa

May 20-24, 2013



About Me

Ph.D. Mechanical Engineering

Academics – State University of New York, Stony Brook

Industrial Scientist – Automotive and Consumer Products

6 Products: Invention to commercialization

Entrepreneur: Started Advanced Fluidics (Small Company)
in 2001

About Advanced Fluidics

Research and Product Development in

1. Aerospace Sciences – Aerodynamics, combustion
2. Micro/Nanofluidics/nanotech-based biosensors
3. Medical Instrumentation
4. Technology Roadmap Development and Training

Opportunity Assessment and Feasibility Analysis

Outline

Technology Road Maps

Technology Mind Maps

Technology Intersect Maps

Technology Forecasting



**Opportunity
Assessment**

Feasibility Analysis

Filtering your ideas

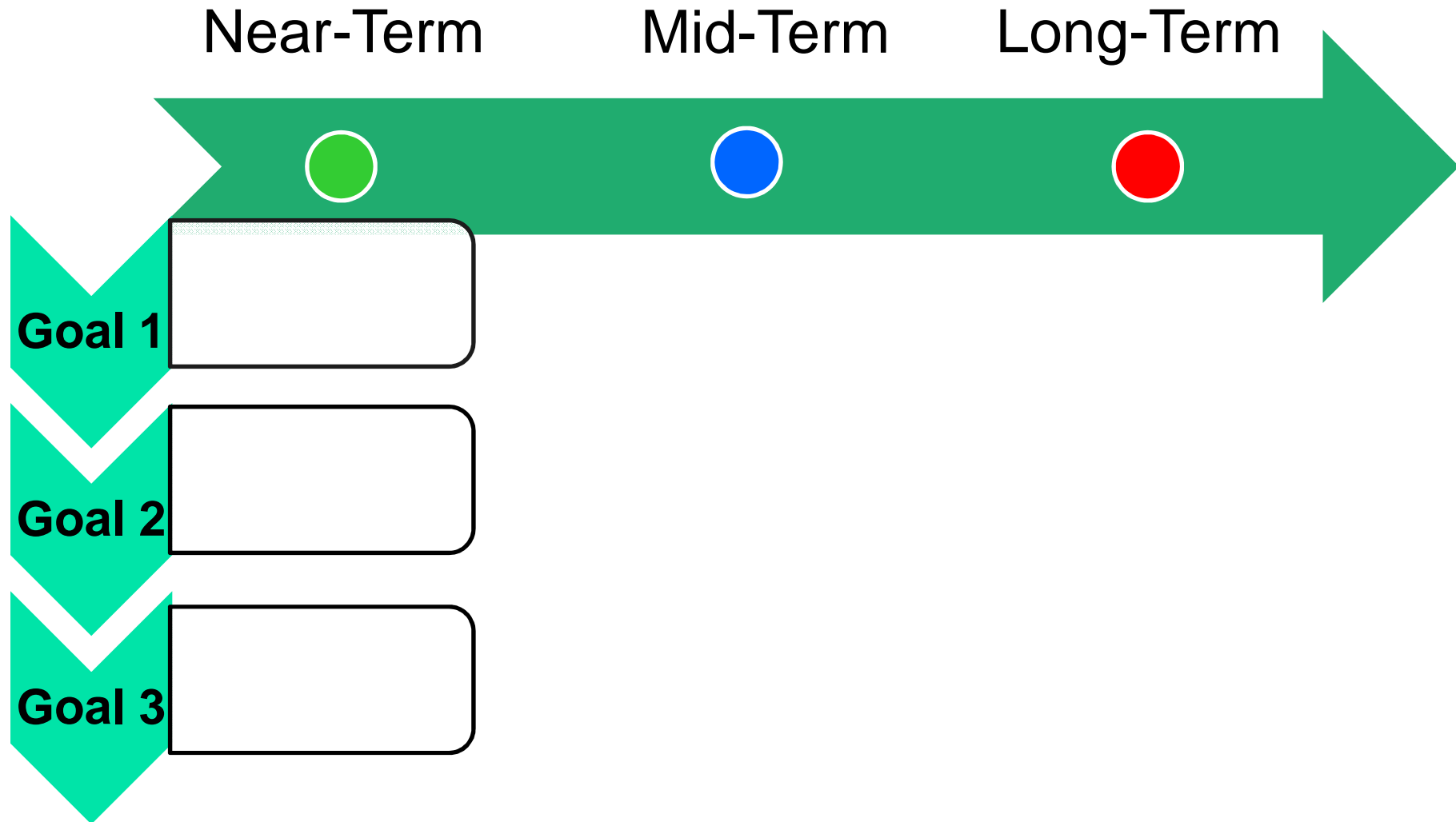
Conclusions

Technology Roadmaps

Technology Roadmap

– shows us opportunity for inventions.

Technology Road Map



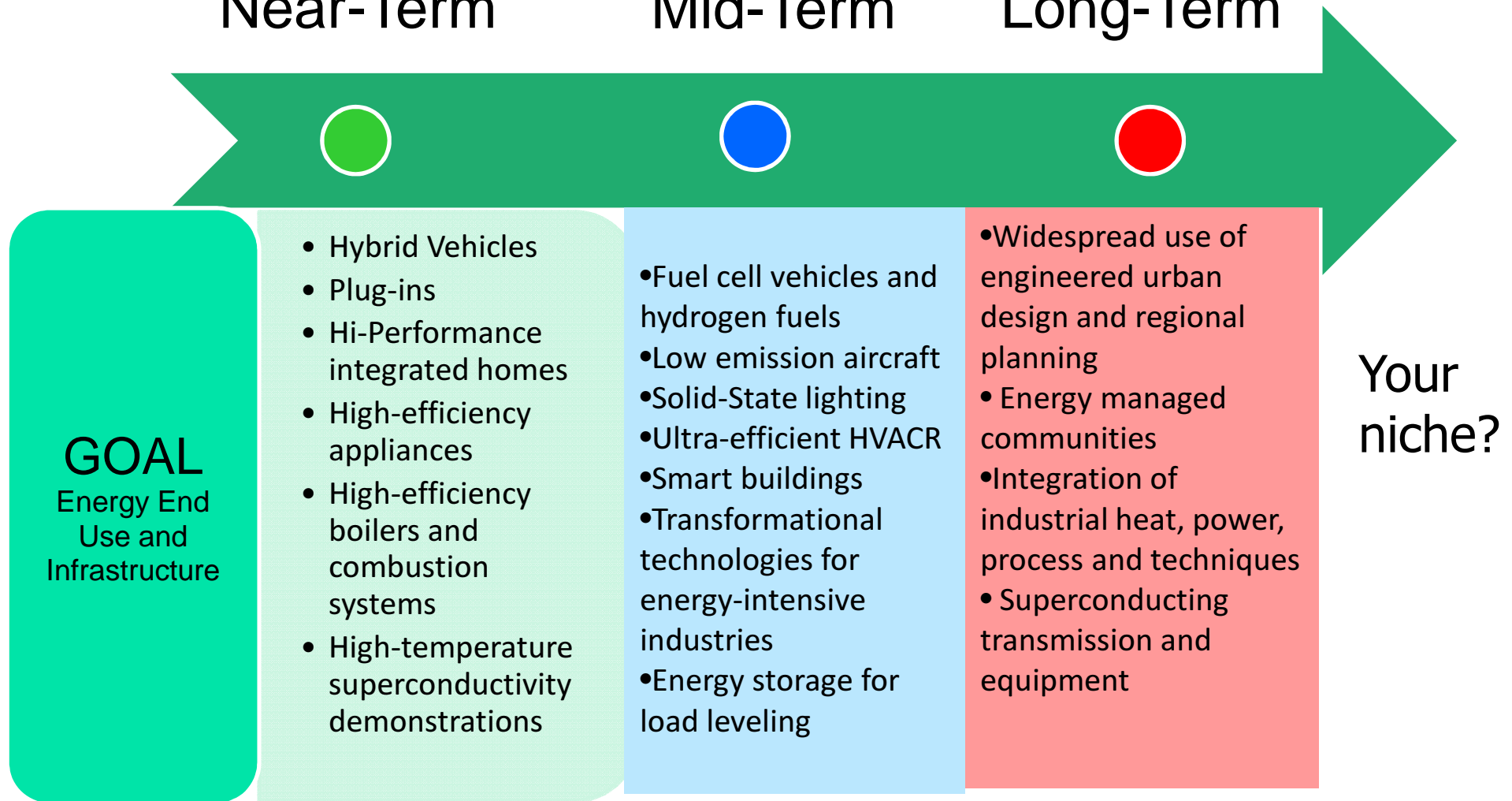
Technology Road Map

<http://www.climate technology.gov/library/2006/testimony20sep2006.htm>

Near-Term

Mid-Term

Long-Term



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Technology Roadmap

Example: Climate Change

Your
niche?



<http://www.climate technology.gov/library/2006/testimony20sep2006.htm>

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Technology Roadmap

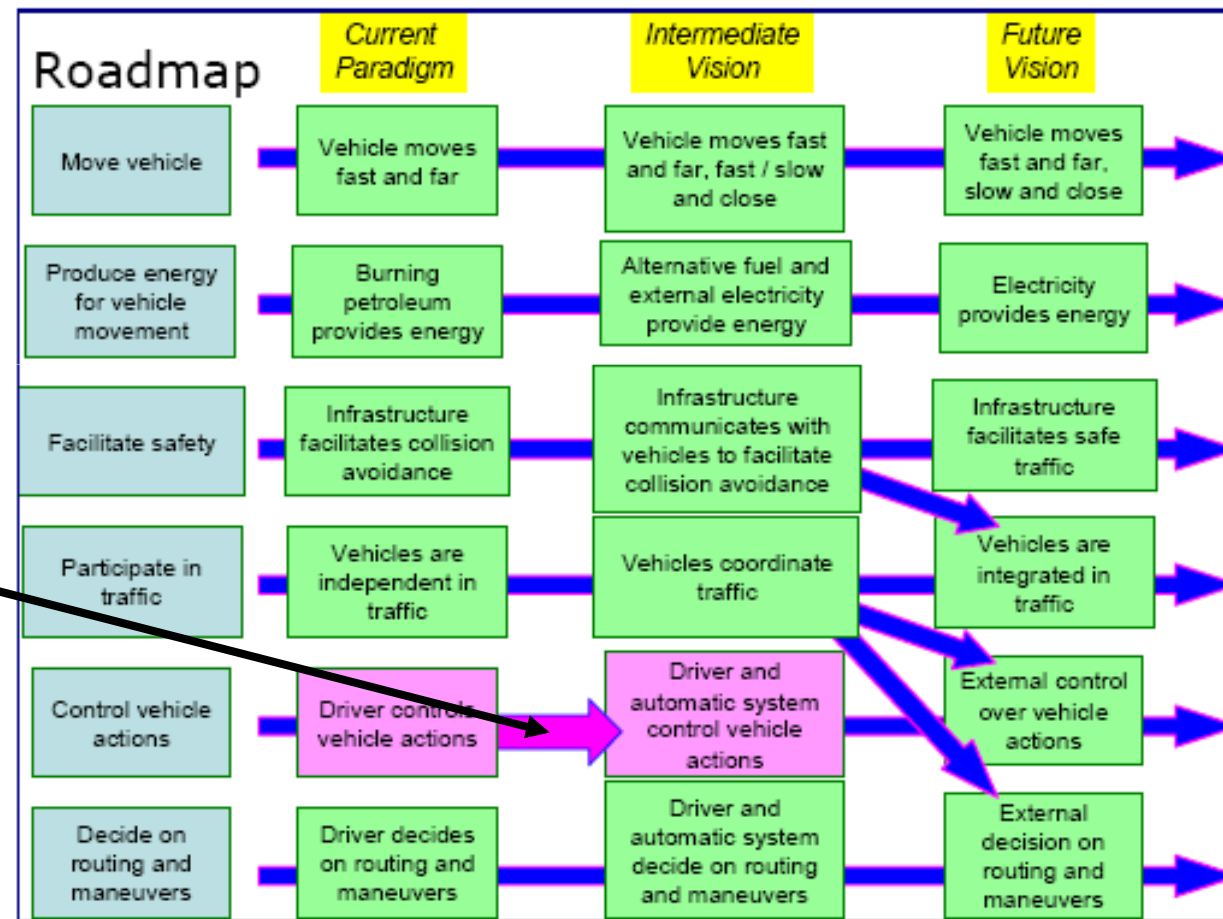
Example: Intelligent Vehicles



Technology Roadmaps

Roadmap for automobiles

Paradigm shifts offer opportunities for inventions?

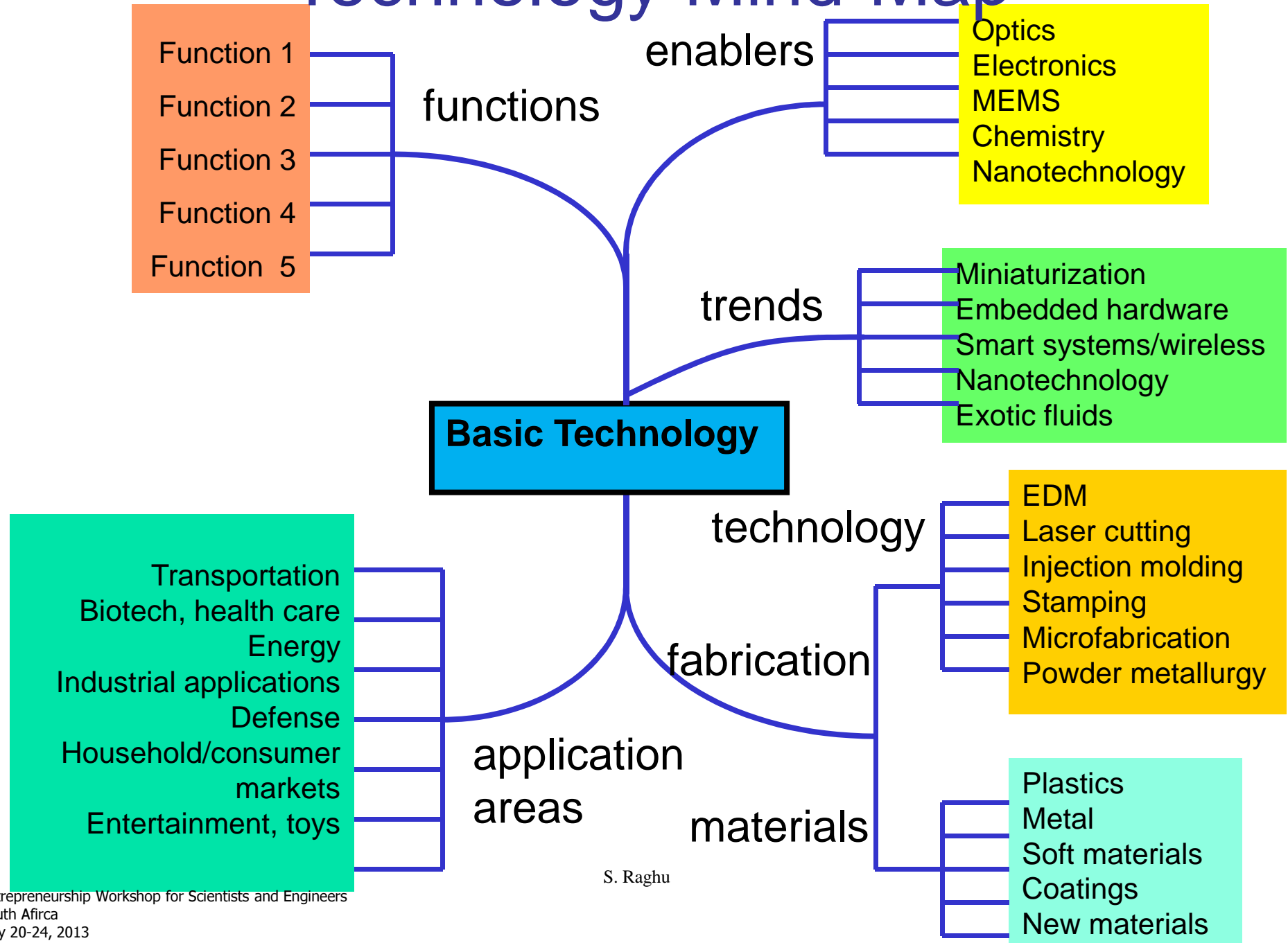


Your niche?

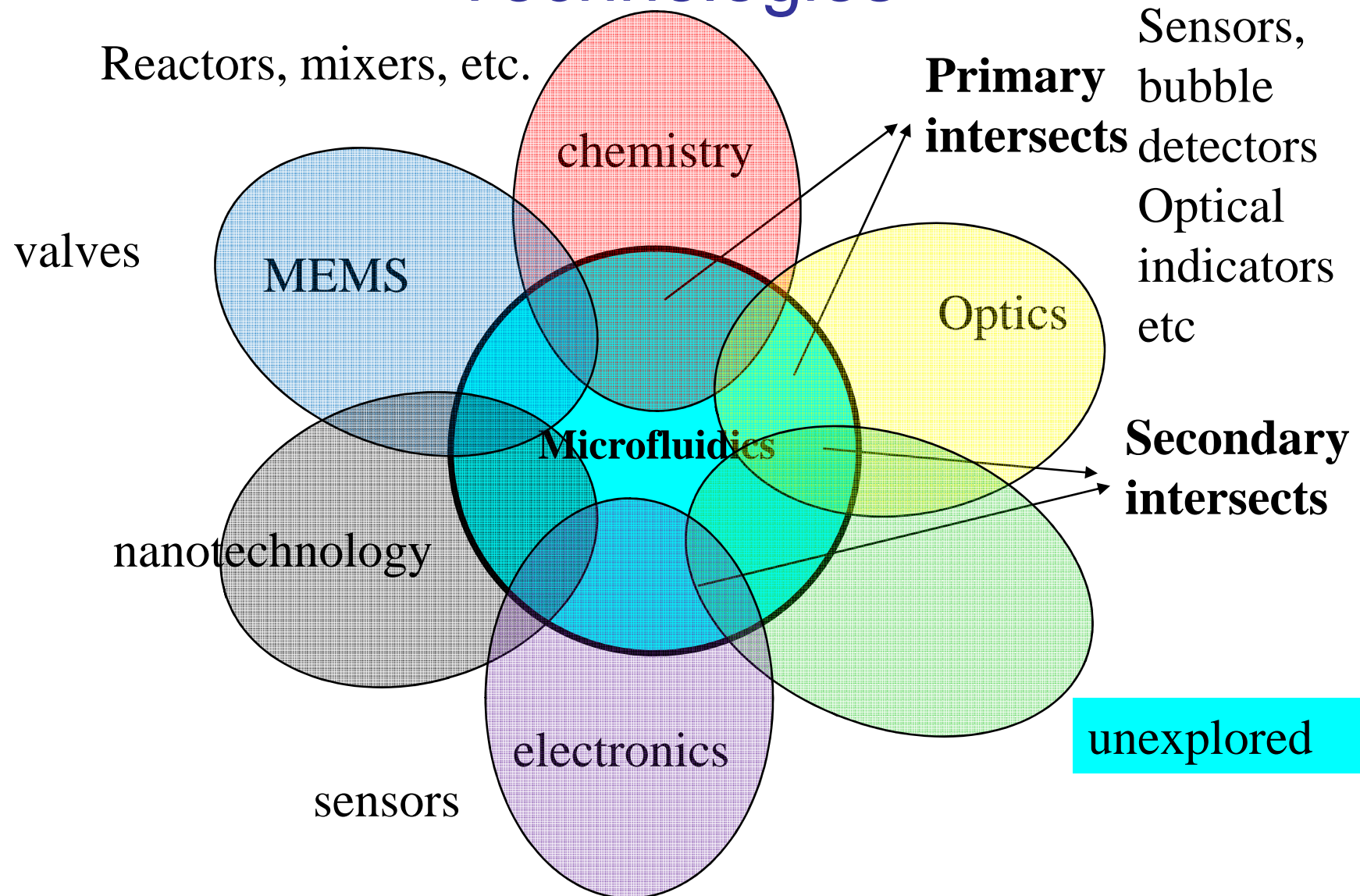
(http://www.ceeti.org/technology_roadmap/pdf/Roadmapping_Final_Report.pdf)

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Technology Mind-Map



Technology Intersects with Emerging Technologies



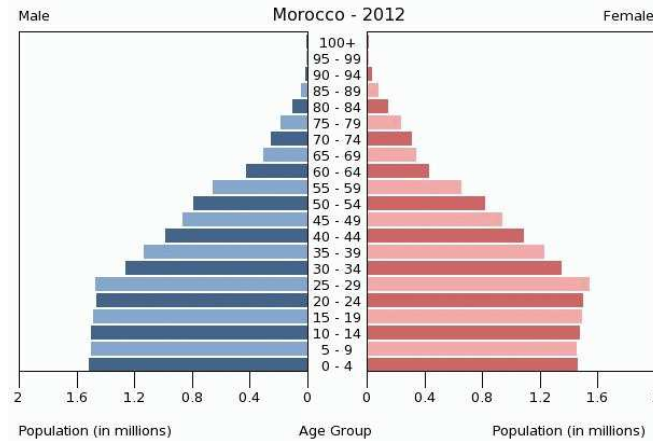
Technology Forecasting

Points to consider for forecasting

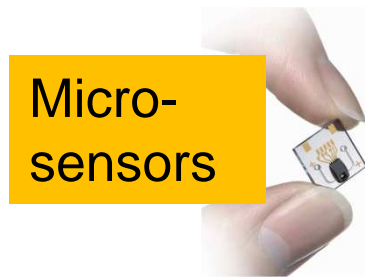
- Observing/Studying Trends
- Economic factors
- Societal factors
- Technological Advances
- Political Action/Regulatory statutes



Technology Forecasting



(http://www.indexmundi.com/morocco/age_structure.html)



Micro-sensors

<http://www.i-micronews.com/>

Health Monitoring

Generation-2 Internet

24-hour medical care

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Feasibility Analysis

Feasibility Analysis: The process to determine if an idea is viable and worth pursuing for commercialization

Product/service feasibility analysis

Customer interest, desirability and purchase interest

Industry/market feasibility

Industry attractiveness

Market timeliness example: (Handwash tissues)

Identification of niche market

Feasibility Analysis

Organizational feasibility

Sufficient management expertise, organizational competence & resources to successfully launch a business

- Management ability
- Resource sufficiency

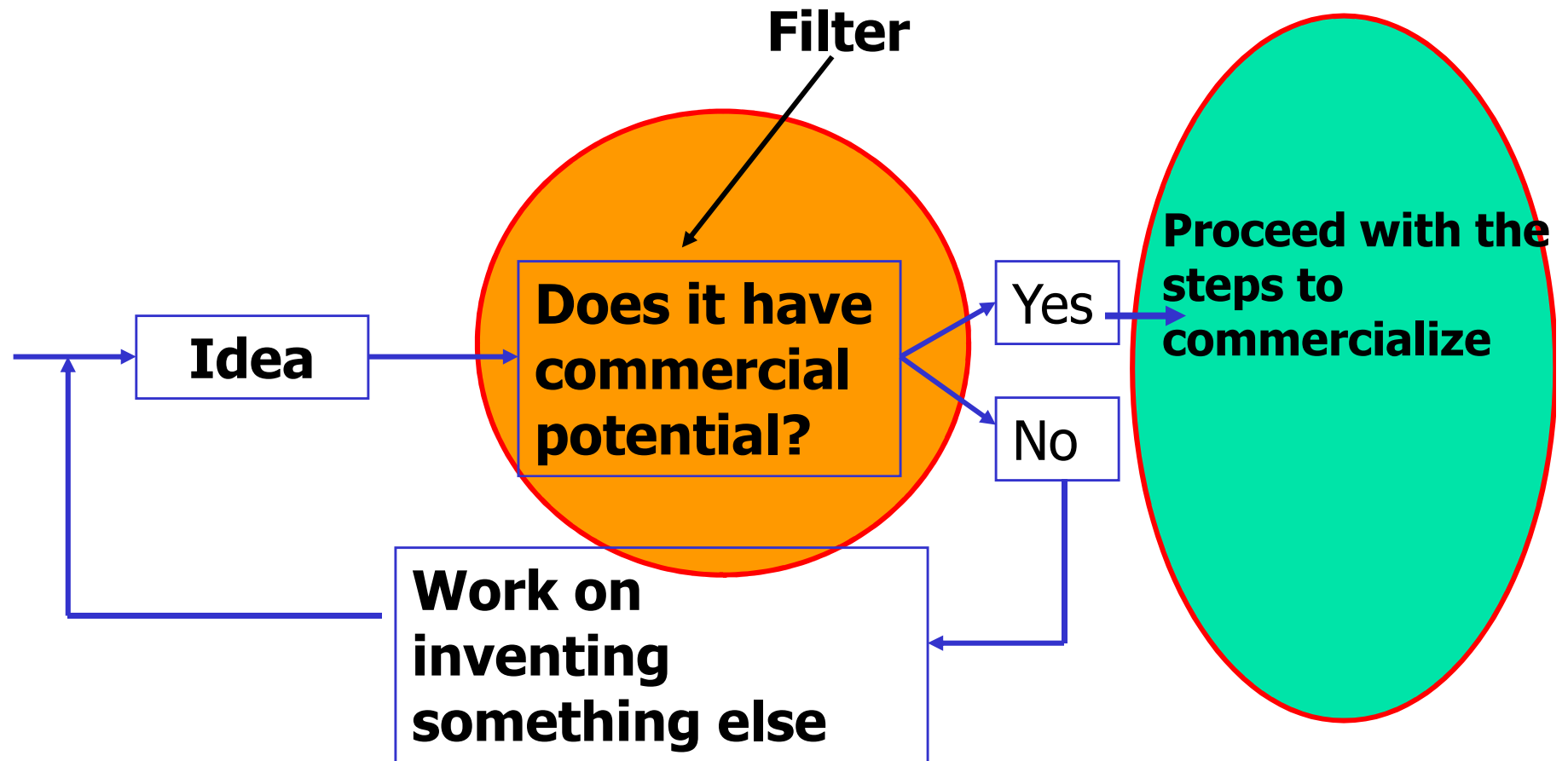
Financial feasibility

Total start-up cash needed (example)

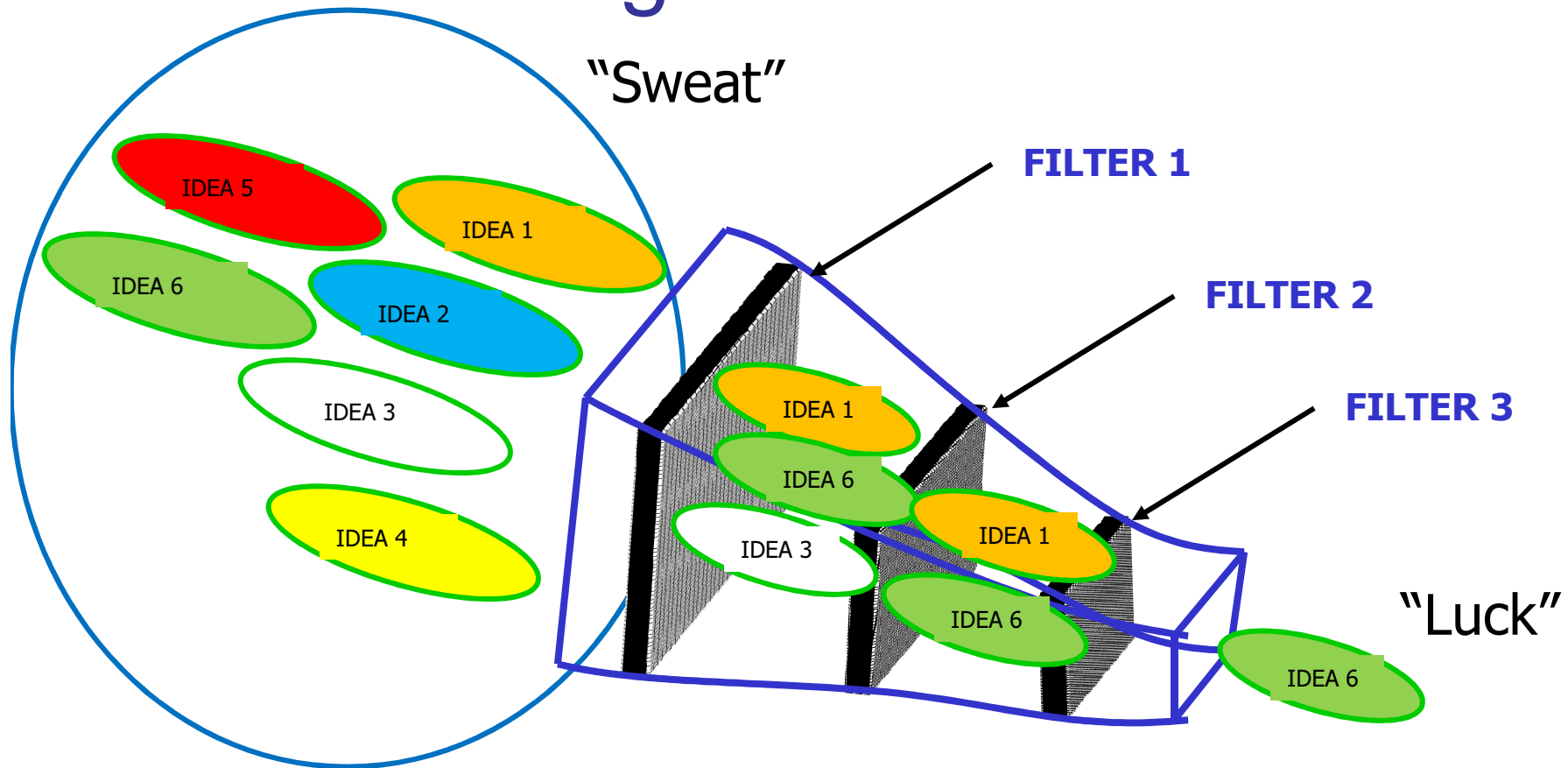
Financial performance of similar businesses

Overall Financial Attractiveness of the proposed venture

Filtering Your Ideas



Filtering of Technical Ideas



Just one idea at a time at
the end helps focus

Filters

Filters: Can be used to sort out feasible ideas right at the very beginning.

Examples of filters:

1. Market Opportunity and Market Attractiveness
2. Do you have the background to proceed with this product
3. Sustainability of market (seasonal or year-round), time scales of sustainability of market interest and technology. Give examples
4. Regional and international competition

What are the other factors that can be used as filters?

Possible Filters

Cost
Weight
Size
Safety/Health
Speed
Ease of Use
Ease of Production
Durability
Repairability
Novelty
Convenience
Social Benefit
Reliability

Saleability
Appearance
Noise
Odor
Trend of Demand
Seasonal Demand
Market penetration
Market size
Competition
Quality
Life cycle

Legality
Obsolescence
Product Liability
Service
requirements
Profitability
Learning &
unlearning
required

Summary

- Opportunity Assessment
 - Technology Forecasting
 - Technology mapping (Roadmaps, Mind-map, Intersects)
- Feasibility analysis
 - Filtering your ideas

Points to consider

1. Talk to some local entrepreneurs if they used filters and gating for developing their products/services. What would they do if they were to do it all over again?
2. Prepare a roadmap for the technology you are developing for your project?
3. Prepare a technology mind-map for your project?

THANK YOU

Opportunities Based on Extending Existing Technologies

