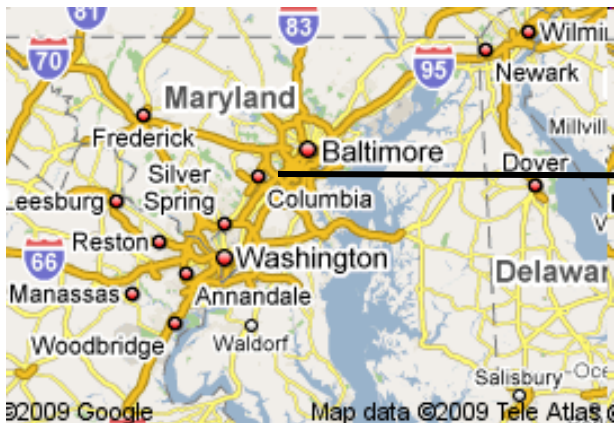


# Technology Triage: Assessment

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**Advanced Fluidics LLC &**  
**ET Cube International**

WIPO EIE Workshop II  
Colombo, Sri Lanka  
Sept. 17-21, 2018



# About Me

Ph.D. Mechanical Engineering – Yale University  
Academics – State University of New York, Stony Brook  
Industrial Scientist – Automotive and Consumer Products  
>20 inventions

15 issued US and International patents

6 Products: Invention to commercialization

Entrepreneur: Started Advanced Fluidics (Small Company) in 2001

Training: ET<sup>3</sup> International (Non-Profit Organization)

# About ET<sup>3</sup> International and Advanced Fluidics

## **ET<sup>3</sup> International**

Entrepreneurship and Research Commercialization  
Training and Consulting ~ 20 countries

## **Advanced Fluidics LLC**

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

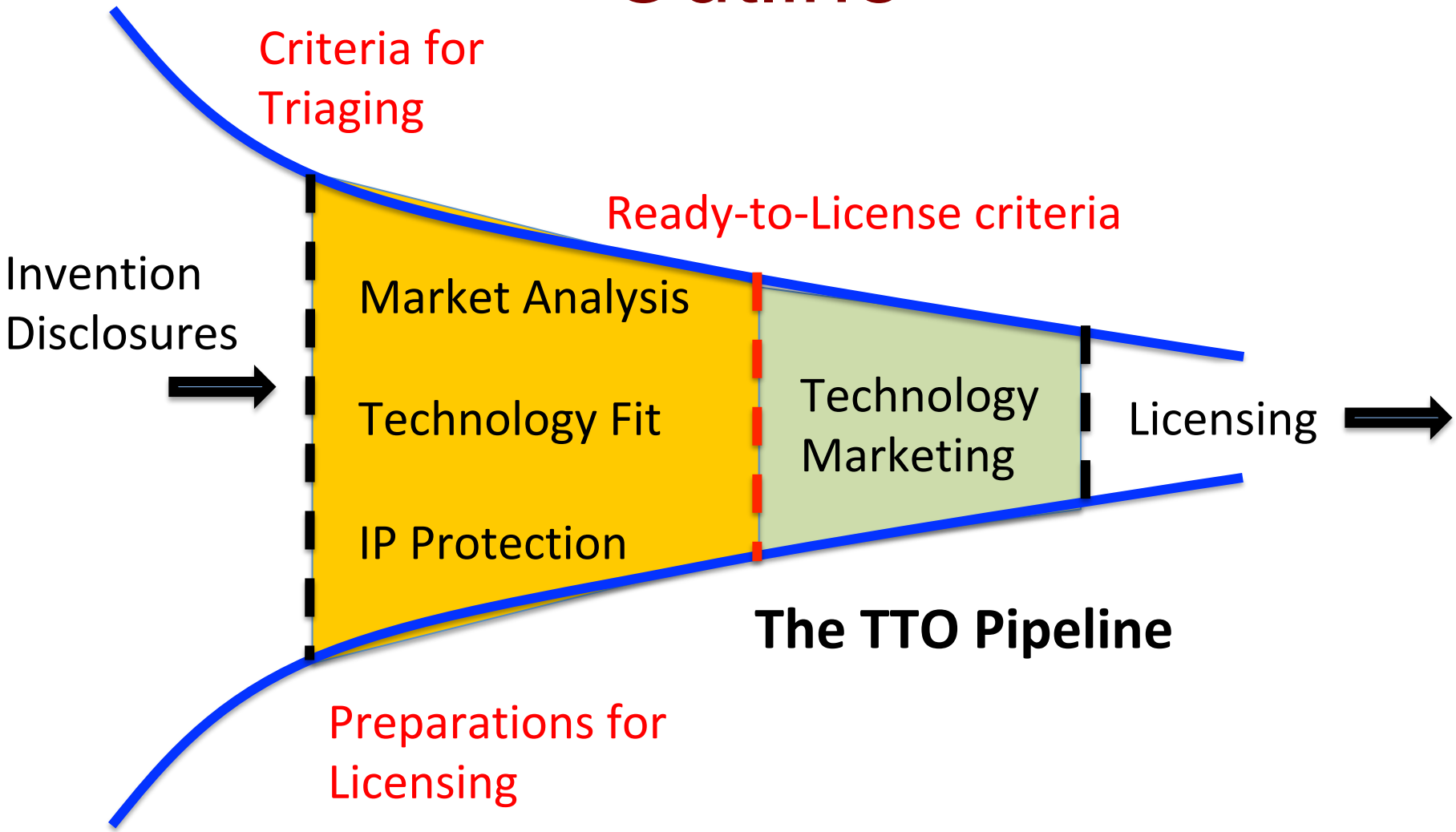
Worked with many Universities...and many Industries....

# Motivation

University researchers come up with many good ideas and invention disclosures....

Challenge for the TTO is to see how to prioritize the inflow of invention disclosures and create a pipeline towards licensing...

# Outline



# Top 20 Inventions in each decade

1960s	1970s	1980s	1990s	2000s
■ software	■ microprocessor	■ eeprom	■ computer readab	■ bluetooth
■ read only memor	■ personal comput.	■ hard disk drive	■ world wide web	■ markup language..
■ laser beam	■ pixels	■ network lan	■ intranet	■ voip
■ liquid crystal ..	■ microcomputer	■ laptop	■ web page	■ information del..
■ memory ram	■ microprocessors	■ area network la..	■ web browser	■ storage area ne..
■ initialization	■ floppy disk	■ dna sequence	■ web site	■ instant messagi..
■ initialized	■ downloaded	■ monoclonal anti..	■ pcr amplificati..	■ removable non r..
■ memory rom	■ eprom	■ expression vect..	■ web server	■ session initiat..
■ only memory rom	■ eukaryotic	■ computer progra..	■ web pages	■ volatile nonvol..
■ silicon substra..	■ polyclonal	■ gene expression	■ bus usb	■ computing syste..
■ emitting diode	■ recombinant dna	■ transfected	■ pci bus	■ protocol wap
■ light emitting ..	■ performance liq..	■ polymerase chai..	■ pcr product	■ xml file
■ data bus	■ reactive ion et..	■ polymerase chai..	■ pcr products	■ protocol voip
■ laser light	■ microprocessor ..	■ dna sequences	■ polishing cmp	■ internet protoc..
■ data communicat	■ affinity chroma..	■ monoclonal anti..	■ interface gui	■ nonvolatile mag..
■ ion implantatio..	■ sepharose	■ codon	■ user interface ..	■ mp3 player
■ light emitting ..	■ diode led	■ genomic dna	■ mechanical poli..	■ nonvolatile opt..
■ glass transitio..	■ emitting diode ..	■ sequence encodi..	■ internet servic..	■ mp3 players
■ initialize	■ communication p	■ gene encoding	■ pcr reaction	■ initiation prot..
■ mosfet	■ restriction enz..	■ expression vect..	■ jpeg	■ pci express

■ Chemical 
 ■ Computers & Communications 
 ■ Drugs & Medical 
 ■ Electrical & Electronics 
 ■ Mechanical 
 ■ Others

# Field/Subject Matter of Invention

- Single invention may involve multiple disciplines
- Single invention can map to multiple industries

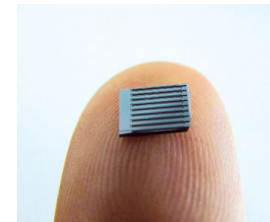
# Example: 5 Inventions Disclosures

1. Virtual Projector Screen
2. CO<sub>2</sub> Sequestration Material
3. Meteor approach detection system
4. Micro Fuel-Cell to replace batteries
5. Plant-based statins

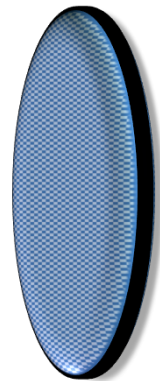
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2



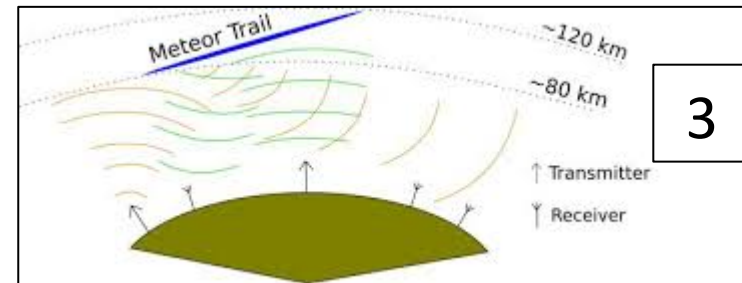
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5



3





# Triaging

Triage is the procedure of assigning **levels of priority** to tasks or individuals, **based on some important criteria**, to determine the most effective order in which to deal with them.











Three levels:            1. Low  
                                 2. Medium  
                                 3. High            OR



Scale of 1-5        where 1= Very unfavorable  
                                 2= Unfavorable  
                                 3= Neutral  
                                 4=Favorable  
                                 5=Very Favorable



# Triaging Criteria

	Criteria	Score
	1 Invention description	
	2 IP Potential	
	3 Market relevance or need (Technology fit)	
	4 Market Size and Characteristics	
	5 Value proposition potential	
	6 Potential for economic value	
	7 Stage of Development/TRL	
	8 Scale-up feasibility	
	9 Support, funding and resources	
	10 Licensing Opportunity	

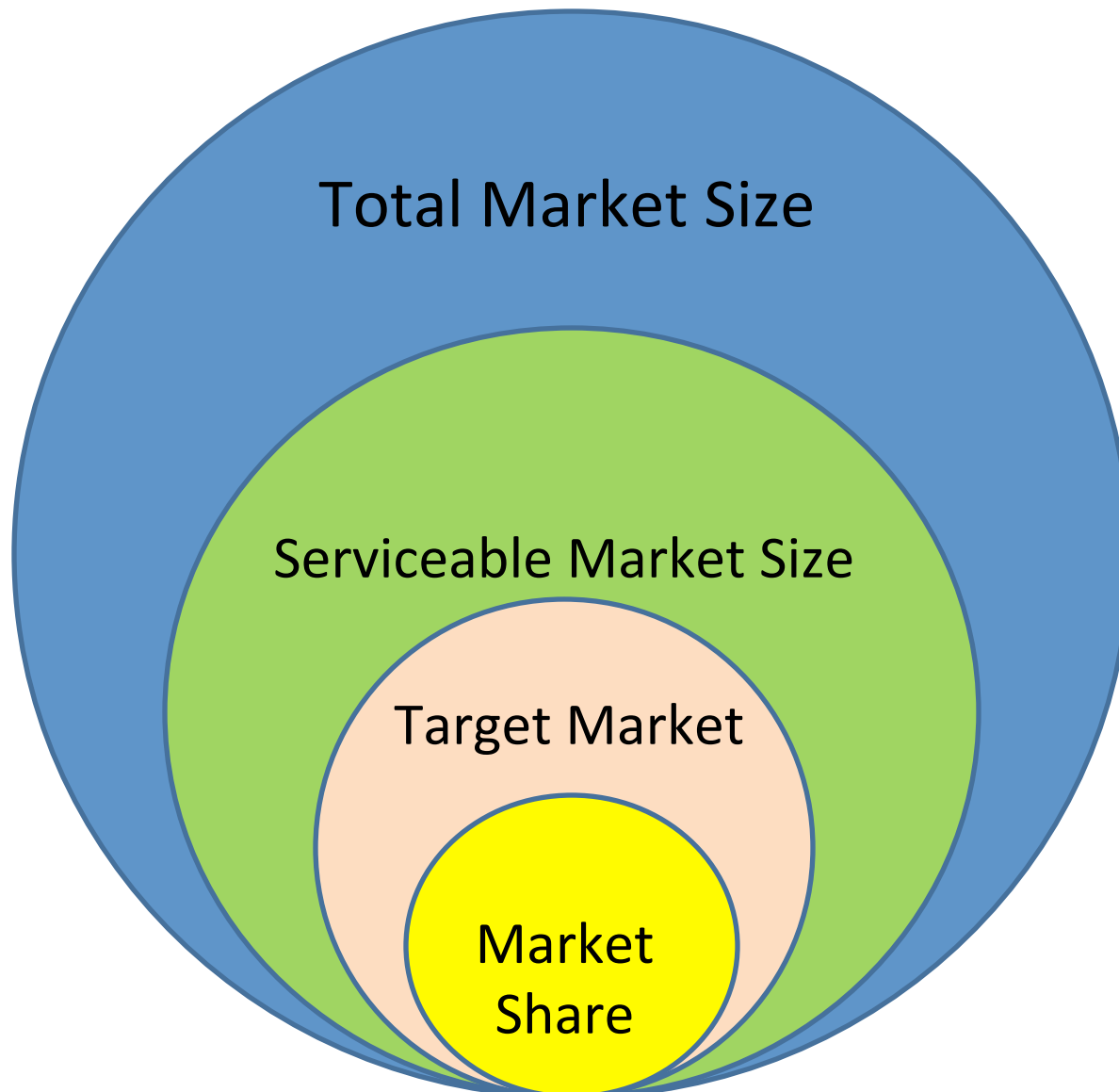
# Market Size and Characteristics

Market size

Entry barrier

Competition

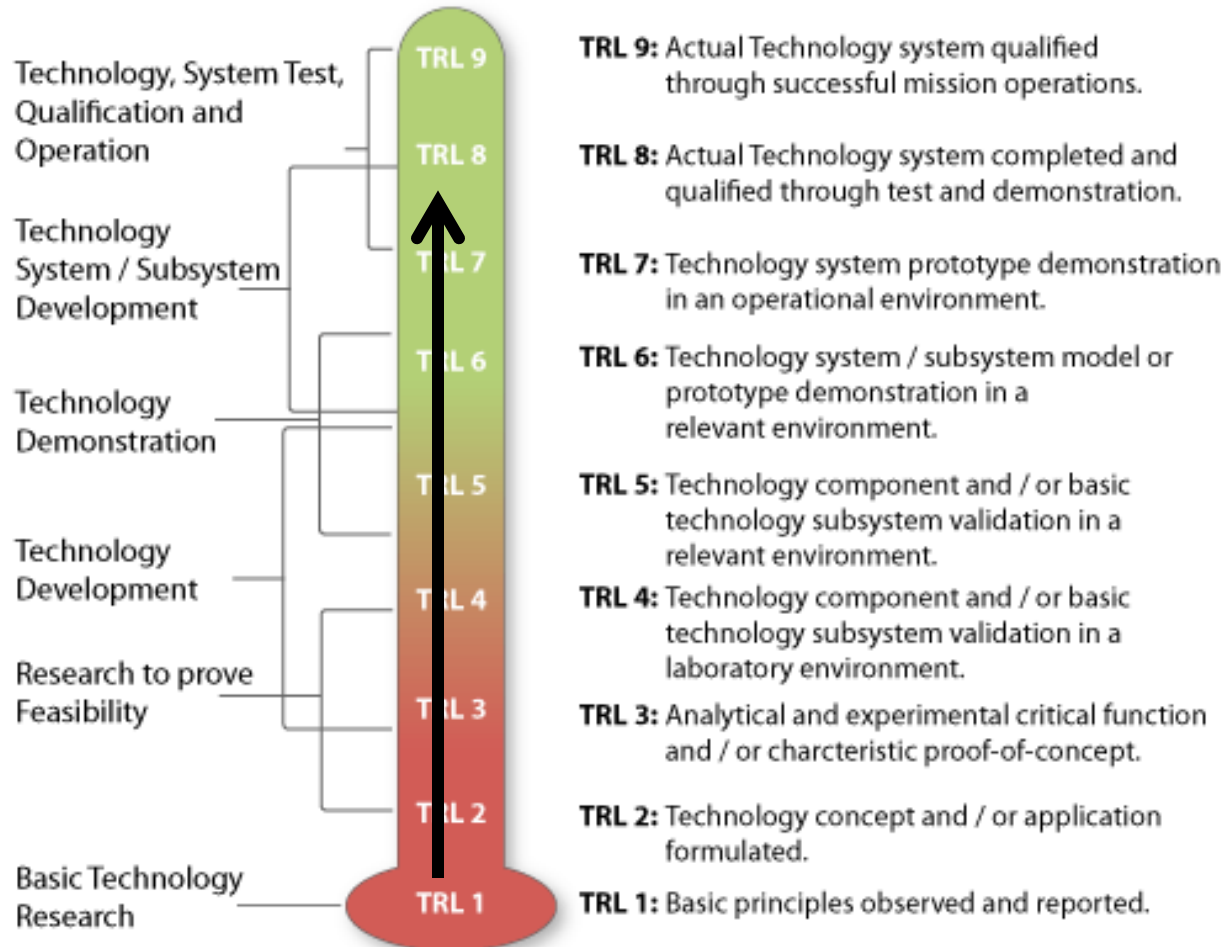
# Market Size



# Entry Barrier



# Technology Readiness Levels (TRL)



[http://www.aof.mod.uk/aofcontent/tactical/techman/content/trl\\_applying.htm](http://www.aof.mod.uk/aofcontent/tactical/techman/content/trl_applying.htm)

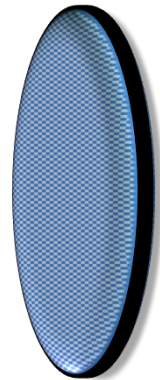
# Ranking the Inventions

Invention	Score	21-30: High
Invention 1	19	11-20: Medium
Invention 2	15	
Invention 3	8	1- 10: Low
Invention 4	27	
Invention 5	23	

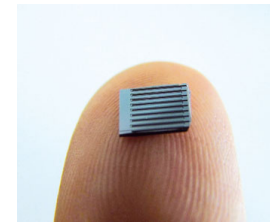
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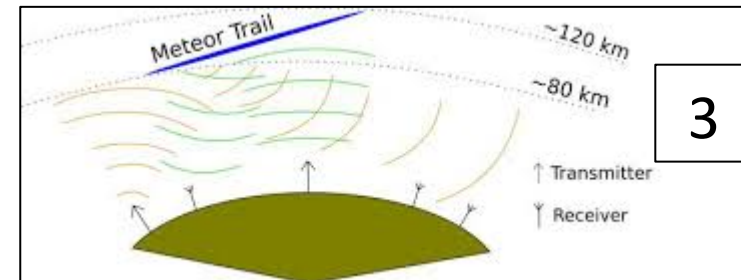


Low hanging fruit?

5



3



# Creating a Pipeline for Licensing

## Processing the invention disclosures after triage

IP Protection

Marketing

Upgrade TRL/requires further research

Licensing Negotiations

Release “Not pursued” IP?

Other conditions (special priorities – windows of opportunity cases) would help.



# Ready-to-license Criteria

Rank invention disclosures in a **scale of 1-4** for the following quantities

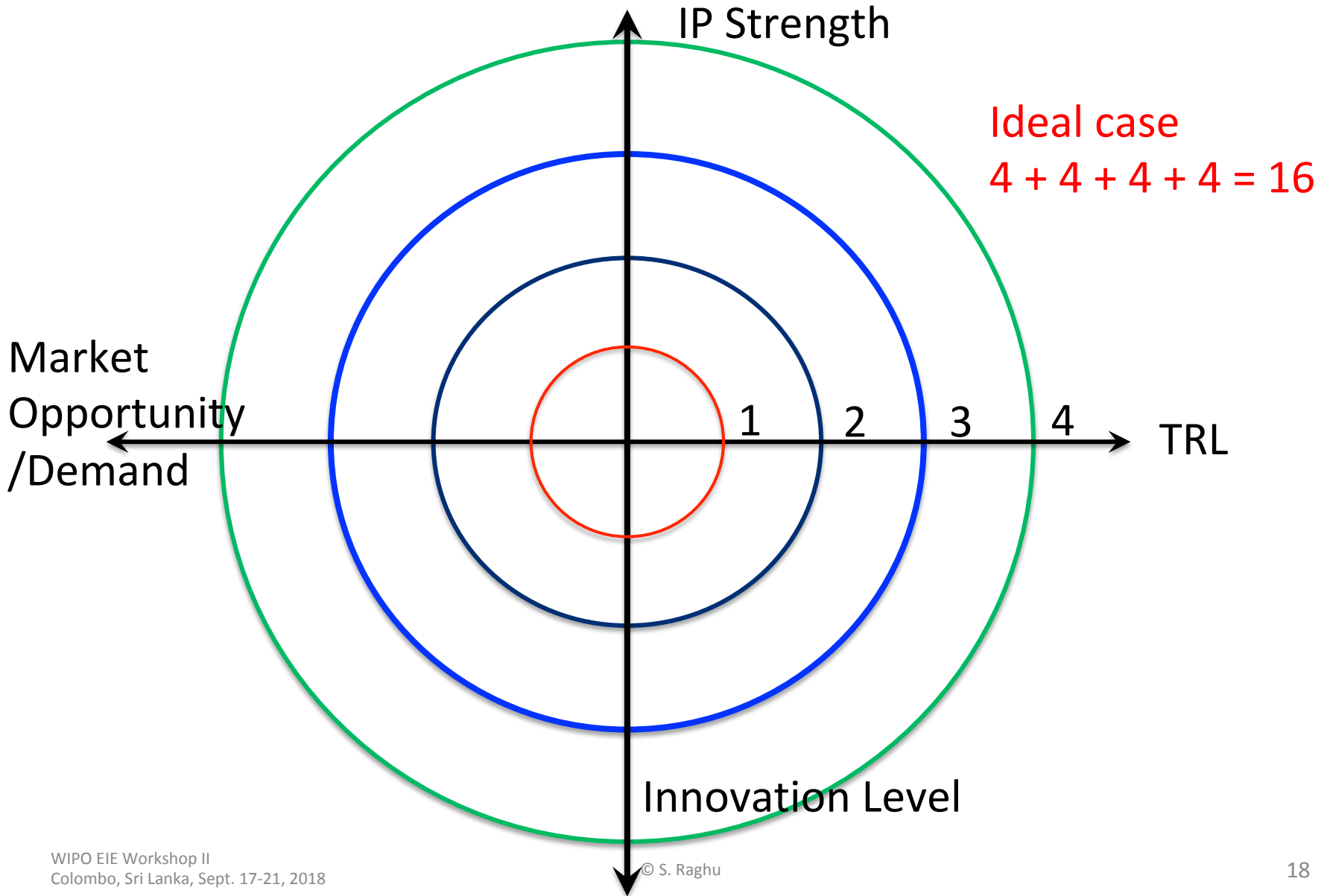
**IP Strength/Status:** 1. Invention Disclosure 2. Patent being applied 3. Patent Pending 4. Patent Issued: (local/Global)

**TRL:** 1-4

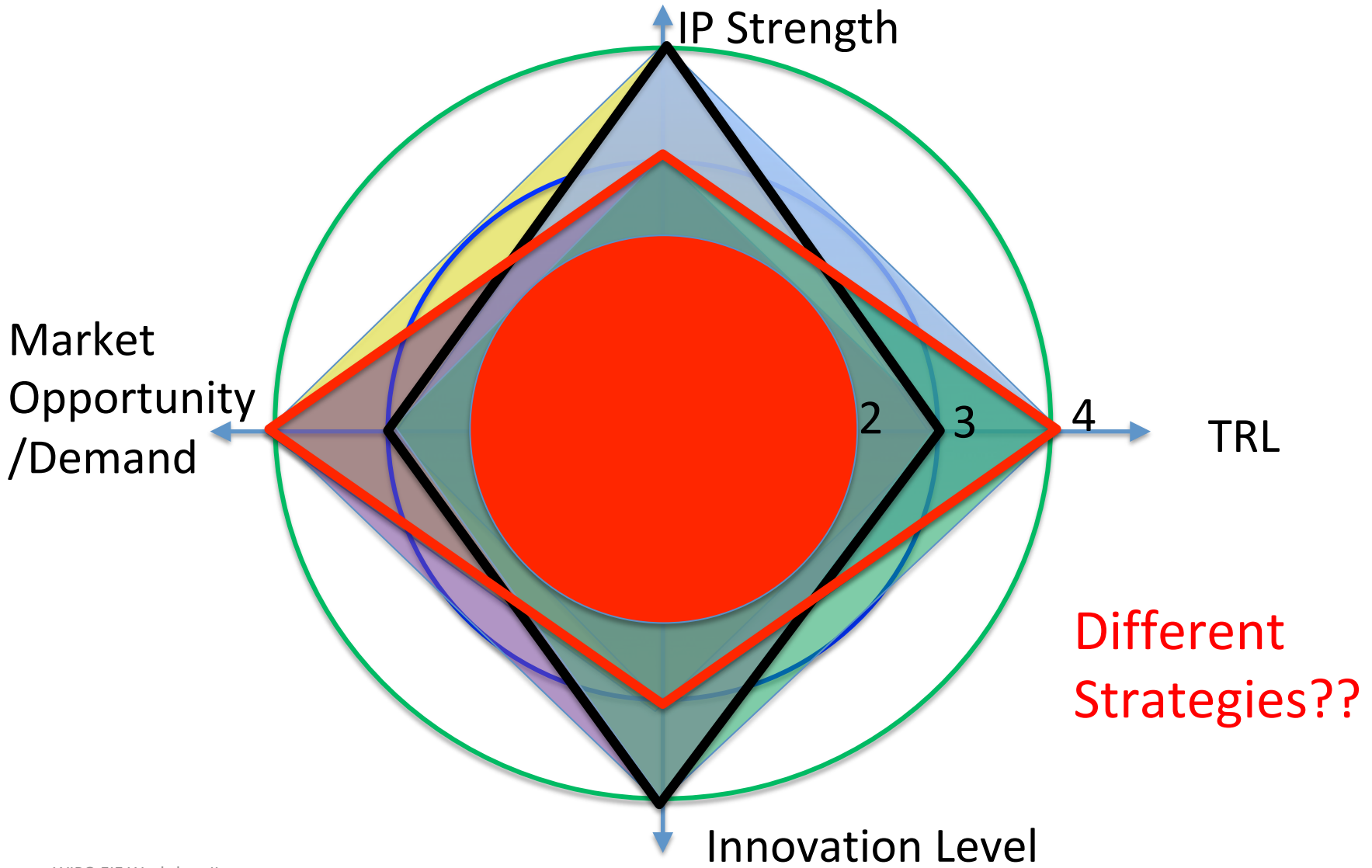
**Market Opportunity/Industry demand:** 1. Unknown market (Technology push) 2. Small market share 3. Medium market share 4. Large market share

**Innovation:** 1. Low 2. Medium 3. High. 4. Extraordinary

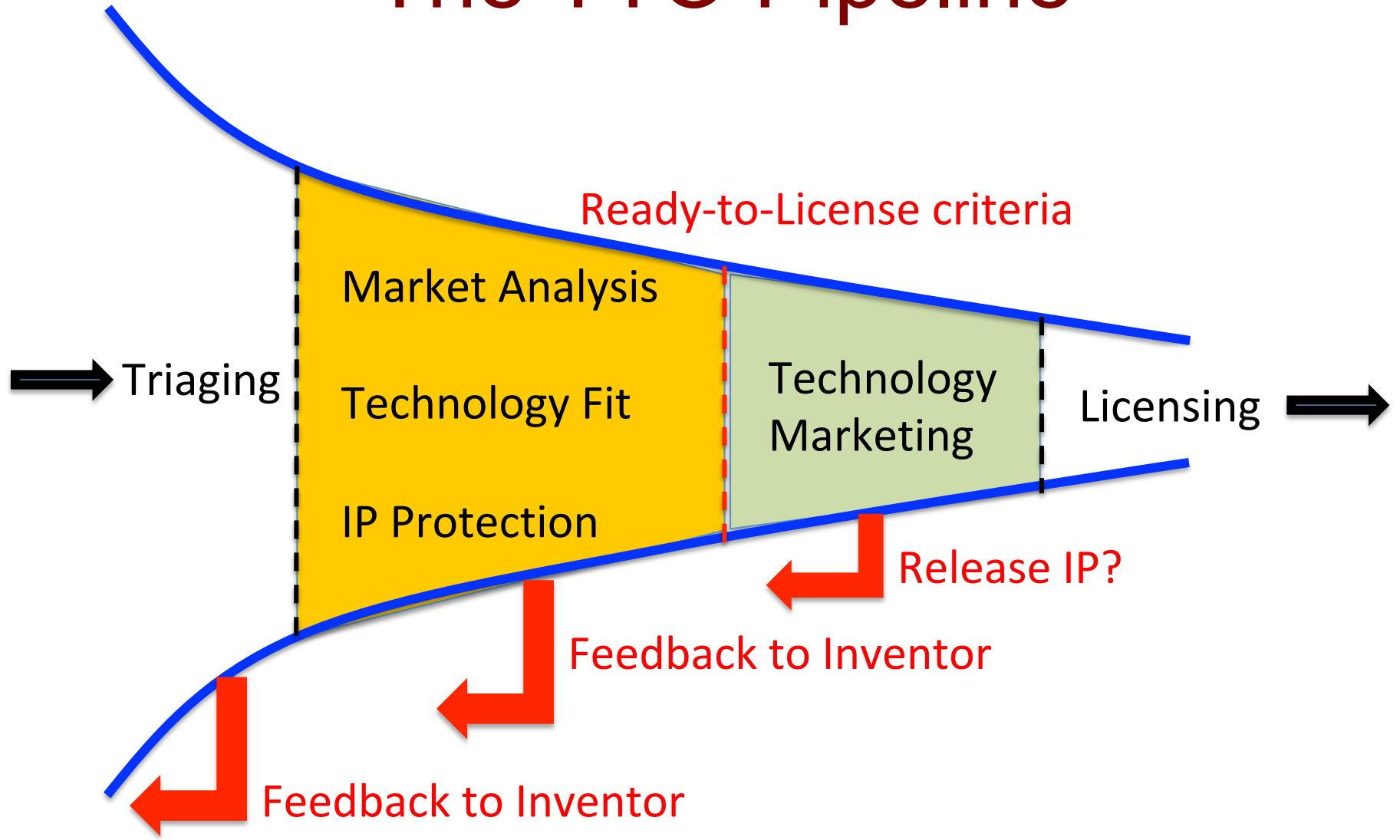
# Plotting the criteria



# Licensing Criteria



# The TTO Pipeline



# Take-home Message

Evaluation of IP is based on following guidelines:

Easy to license “Solutions to problems” than “Solutions looking for problems”

Triaging helps set priorities - High, medium and low potential

Ready-to-License status is based on at least two of the four metrics being the maximum.

# THANK YOU