SUNY STARTUP
SUMMER SCHOOL

Week 3

June 16, 2021

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Course Schedule

Week	Date	Course Title	Presenters
3	June 16	Evaluation of the Opportunity – Patentability and Marketability Basics	Tanya Waite& Garrett Smith, SUNY RF
4	June 23	How To Win Grants – Mastering Non-Dilutive Funding Sources	Kirk Macolini, InteliSpark
5	June 30	Grant Budget Basics – Managing Your Award Like A Pro	Jaron Kuppers, Amala Consulting
6	July 7	Forming and Structuring Your Company Like A Boss	Rich Honen, Phillips Lytle
7	July 14	Selling and Telling Your Story	Sue Hayes, Labsim
8	July 21	Commercialization 101 – Positioning Your Go-To-Market Strategy	Doug Buerkle, LTM Ventures Mark Sperry, Sperry Energy
9	July 28	Follow-On Capital Sources – What Early-Stage Investors Want	David Cruikshank, ARCH Venture Partners
10	August 2-6	1:1 Meetings With SUNY Venture Advisors	
11	August 11	Demo Day and Graduation	

Instructional Webinars

1. All webinars are **10:30-12:00 PM ET** Wednesdays June 2-July 28. Calendar invites have been sent to all. Please let us know if you did not get it.
2. **Recordings** and presentations will be shared after each class, but we highly encourage you to attend live to take advantage of the full experience.
3. At the end of each live session, please answer a 1 question **Zoom poll** about this week's topic. Your feedback helps us improve the program.

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Course Schedule

1. August 2-6: **30-minute dry run** of your pitch. More info on scheduling in the upcoming weeks.

2. August 11 **3-5 PM Demo Day**: S4 culminates with a Demo Day celebration and graduation where participants pitch their technology or venture for one or more $10k Technology Accelerator Fund Catalyst Investments.

3. In partnership with the Binghamton I-Corps Site, we are offering 25 slots in the National Science Foundation I-Corps Regional Course to S4 participants only. **Deadline is this Friday June 18.**
   - Only 17 spots left! Apply today.

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Join LinkedIn

Meet your classmates! We will give out participation points for the below items.

1. Join the SUNY Innovation and Entrepreneurship Network LinkedIn Group
2. Comment on the "Welcome to the S4 class of 2021" post in this LinkedIn group to introduce yourself. Recommendations on what to include: campus affiliation, what you are working on, what you hope to get out of S4 and a fun fact about yourself.
3. Reply to a classmate's post to 'meet' them!

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Leaderboard

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Leaderboard Top 21

	First Name	Last Name	Points
1	David	Liu	8
2	Michael	Coyle	8
3	Carol	Beckley	5
4	Nicholas	Mattern	5
5	Christopher	Badurek	4
6	Michelle	Bodden-White	3
7	Lewis	Carpenter	3
8	Eman	El-Rowmeim	3
9	Alba	García-Rodríguez	3
10	Alex	Lednev	3
11	Naijiang	Liu	3
12	Zuby	Onwuta	3
13	Brennan	Overhoff	3
14	Janet	Paluh	3
15	Ezra Mel	Pasikatan	3
16	Tatyana	Tarasevich	3
17	Nathan	Tumey	3
18	Michael	Walters	3
19	Alexis	Weber	3
20	Christopher	Williams	3
21	Weilan	Zhang	3

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Leaderboard By Campus

#	Campus	Points
1	Albany	24
2	Binghamton	18
3	Buffalo	18
4	Downstate	18
5	Polytechnic Institute	18
6	Stony Brook	13
7	Buffalo State College	6
8	Upstate	6
9	Cortland	4
10	Brockport	3
11	Oswego	3
12	Plattsburgh	3
13	Potsdam	2
14	Empire State College	1
15	ESF	1
16	Fredonia	1
17	Herkimer County Commu	1
18	Morrisville	1
19	Cobleskill	0
20	Farmingdale State Colleg	0
21	New Paltz	0
22	Old Westbury	0

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Questions about S4?

Email us at S4@rfsuny.org

Let's jump into today's topic!

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Evaluation of the Opportunity
Patentability and Marketability Basics

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Meet your presenters!

SUNY RF
The Research Foundation for
The State University of New York

Garrett Smith

Patent Attorney

Tanya Waite

Senior Partnerships Manager

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Intellectual Property

Property that enjoys legal protection and stems from the exercise of the mind

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Why is IP so Important?

- Creates property assets and adds value to a company from the minds of employees!
- Gives Businesses Exclusivity in the marketplace
- Marketing tool / Notice of ownership
- Revenue Stream
  - Licensing to others - IBM $1.3B annually
- Finance: venture capitalists and banks want to see IP ownership

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IP BIG PICTURE * WHY?

Securing IP Rights

Leveraging IP Rights

Enforcing/Defending IP Rights

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Transferring of Rights

- Assignments
  - Transfer of ownership
- Licenses
  - Right to use
- Contract Law
  - Language/Actions are binding

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Types of Intellectual Property

1. PATENTS
   - Protect “Functional” and/or “Ornamental” Inventions
   - Filing Required

2. TRADEMARKS
   - Protect Names, Logos, Slogans, etc.
   - Filing Optional

3. COPYRIGHTS
   - Protects creative/original works expressed in a fixed medium
   - Filing Optional

4. TRADE SECRETS
   - Protects secret processes, information, etc.
   - No Filing

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Patents

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Patents Overview

- Obtained by filing with the USPTO
- Each Country/Region has separate system
- Relatively Expensive
  - ($20,000-25,000 to get a granted patent)
- Complicated Process
- Good for 20 years from filing date (Utility)

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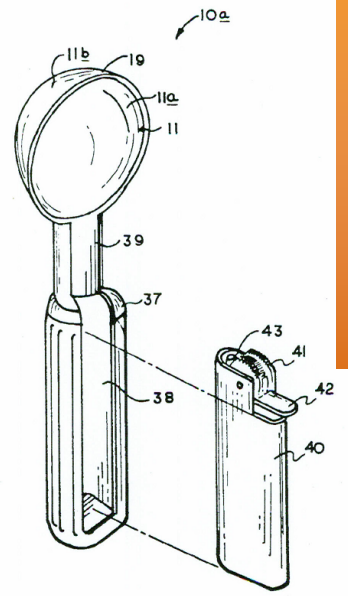
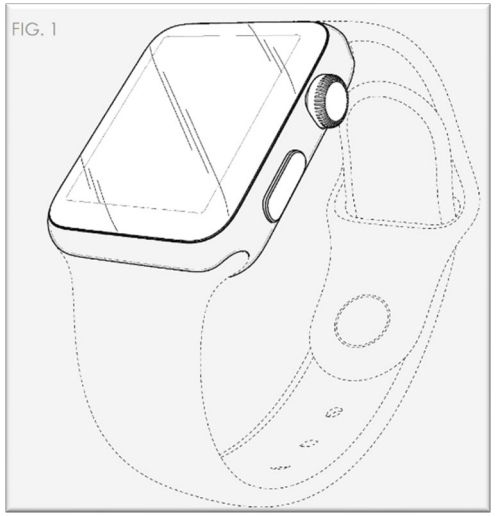
Types of Patents

1. UTILITY (primary type of filing)
   - New and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof
   - E.g., mechanical Devices, Electrical Circuits, Pharmaceuticals, etc.

2. DESIGN
   - Ornamental configuration, e.g., the shape of object





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Utility Patents

Term of **20 years** from earliest filing date to… **exclude others** from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof. 35 U.S.C. 154

*Design – 14 years

EXAMPLE

- ACME Company patents components A, B, C
- You patent component D – which relies on A, B, C
- Can you practice your invention including A, B, C, D?

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Utility Patent Process

1. PATENT SEARCH: Search existing “prior art” to determine if patentable (Optional)

2. APPLICATION PREP AND FILING: (Patent-Pending)
   - Application Components: written description, claims, drawings (where applicable)

3. EXAMINATION AND PROSECUTION:
   - Most Applications are initially rejected requiring response(s)/Amendments to Application

4. PUBLICATION at 18 months from filing date (by DEFAULT)

5. ALLOWANCE / ISSUANCE:

6. MAINTENANCE: 3.5 years, 7.5 years, 11.5 years

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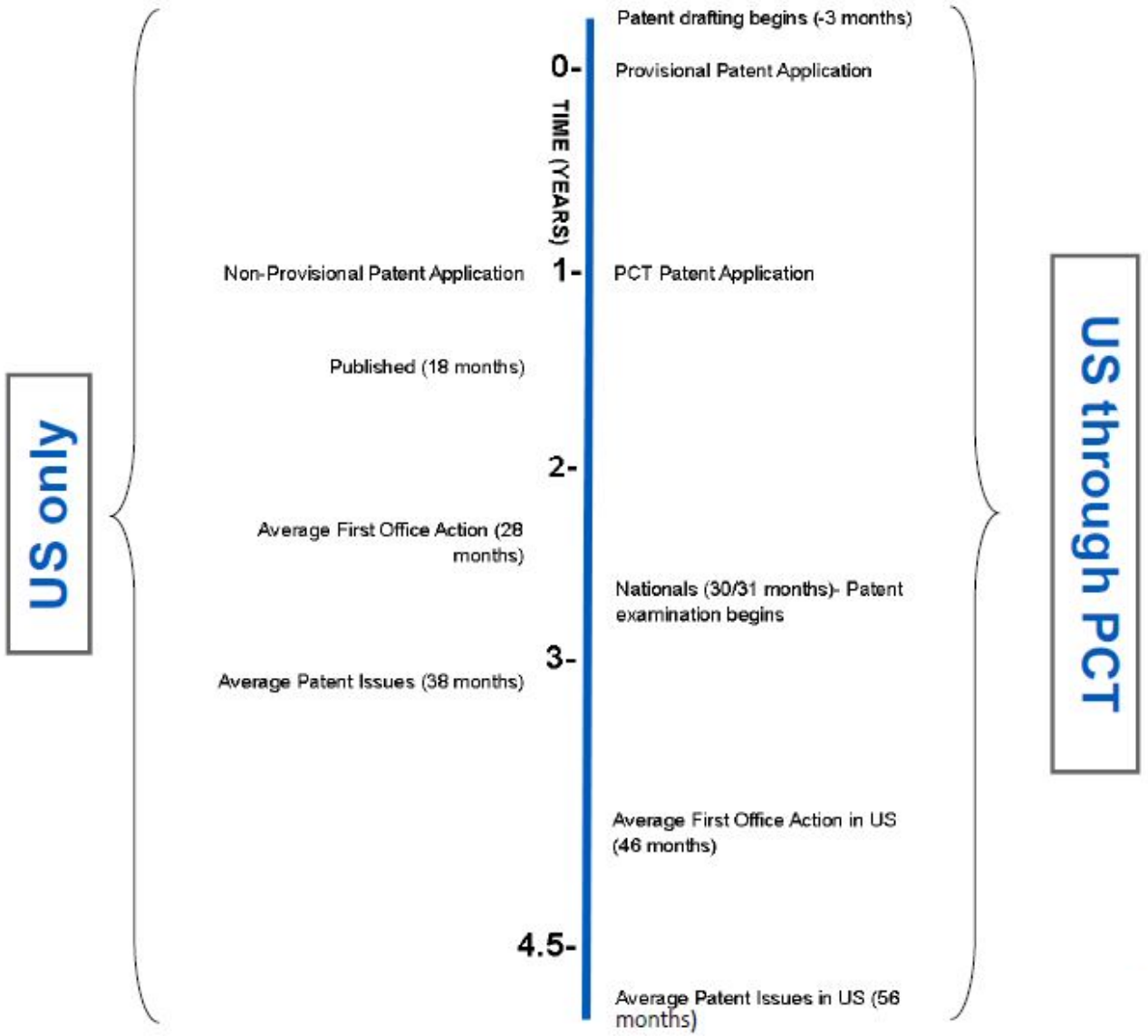
Patent Timeline



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Provisional Patent Applications

- Preliminary Patent Filing
  - Establish Filing Date – “Stake in the ground”
  - Buys the applicant 1 year to file non-provisional (UTILITY) application
- Does NOT get examined
- Lower cost – Less formal
- “Patent-Pending”

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Patents and Disclosure

- Invention must be novel and non-obvious to be Patented
  - Disclosed = NOT NOVEL (outside of U.S.)

- (Almost) the rest of the world = absolute novelty bar
  - In almost every other country in the world, as soon as an invention is disclosed, the inventor/applicants lose their right to file a patent Application

- What is considered Disclosure?
  - "Patented, described in a printed publication, or in public use, on sale, or otherwise available to the public"
  - Enable a skilled person to carry out the invention

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Patents and Disclosure

- You develop an inventive process for creating new compound A in March 2021. You disclose to SUNY RF in April 2021. You then submit a white paper that is immediately published (i.e., same day) on June 1, 2021 on the internet. What is the date of disclosure?

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Authorship v. Inventorship v. Technician

- Researcher 1 develops an inventive process for creating new compound A in her lab
- Researcher 1 enlists Researcher 2 to help her draft a white paper for publication
- In order to complete the white paper, Researchers 1 and 2 hire Researcher 3 to run test and generate data points in his own lab
- After running tests at the instruction of Researchers 1 and 2, Research 3 provides only the data points, which Researcher 1 and 2 transform into graphs, and include in the white paper submission

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Authorship v. Inventorship v. Technician

- Who is an inventor on the Patent Application for the inventive process?

- Who is an author for the white paper discussing the inventive process?

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Authorship v. Inventorship v. Technician

- AUTHOR
  - A creator of an original expression in a work
- INVENTOR
  - A person who takes part in the conception of the ideas in the patent claims of a patent application. An entity/person who furnishes money to build/practice an invention is not an inventor
- TECHNICIAN
  - Sometimes referred to as a lab/research technician, skilled workers that work with complex systems or perform highly technical mechanical or diagnostic tests in medical or scientific laboratories

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Patentability in BIOTECH

Isolated DNA

cDNA
DNA sequences that encode variants

Diagnostic claims

Methods of treating/administering (mixed)

Antibodies

Laboratory/ma nufacturing techniques

Primers

Composition claims that are “markedly different”

Vaccines live attenuated OK

Life-forms (e.g., genetically engineered “oil-eating” bacteria) along with plants and transgenic animals

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Trademarks

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Trademarks

Identifiers of source of goods and/or services

Word Mark v. Stylistic Mark → NIKE v. 

Rights: PREVENTS others from using confusingly similar mark.
Examples:

- Name – Microsoft
- Design – Nike's swoosh
- Color – Tiffany Blue
- Sound – Harley Davidson Motorcycle
- Shape – Peeps
- Scent – Play-Doh (granted 2018)

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Trademark Rights

- Rights available by *using the mark in commerce and/* or via Federal Registration with USPTO
  - Federal Registration gives extra rights
  - Rights limited to type of goods and services
    - E.g., Apple Computers vs. Apple Records (1978/2006)

- ™ for Common Law or ® for Registered
- Likelihood of Confusion Standard for Infringement
- Scope of protection varies
  - Strength of the mark
    - Generic – Descriptive – Suggestive – Arbitrary – Fanciful
    - Aspirin – Pizza Hut – AIRBUS – Apple - Kodak

AIRBUS

Pizza Hut

KODAK

Apple

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US Trademark Registration Process

1. Search

2. File application with USPTO
    a. Actual Use vs. Intent to Use

3. Application is examined

4. Respond/Amend

5. Allowance Publication

6. Issuance

7. Maintenance*

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Creating TM Leverage

1. Federal Registrations
2. Police Your Trademarks (OBLIGATION)
3. Use Outright and Often
4. Routinely Document Use

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Trademark Infringement

- The key test for trademark infringement is whether the defendant's use of a particular mark creates a likelihood of confusion

- Number of factors depend on circuit – typically 8

  (1) the similarities of the goods and services involved
  (2) evidence of actual confusion
  (3) physical proximity
  (4) likelihood of product line expansion

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Copyrights

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Copyrights

- Protect original expressions fixed in tangible medium
- Exclusive right to distribute (copy), prepare derivative works, perform, and display
- LIMITED TO EXPRESSION, NOT ACTUAL IDEAS!!!
- Examples: Poem written on paper, music, **SOURCE CODE**, manuals, marketing material, **website/APP design**, recorded performances, video, mixed media, video games, etc.

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Obtaining Copyrights

- Registration not required to establish rights
  - Just need something recorded in a tangible medium

- © from first publication

- Registration through US Copyright Office gives extra rights … which can be important!!!
  - Registration process is relatively simple
  - Registration important in litigation

- Infringement Standard includes (1) Access and (2) “Material Similarity”
  - Access requirement unique to Copyright

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Creating Copyright Leverage

- Register Your Important Works – early and often

- Always Have Written Agreements when dealing with Contractors
  - By default, contractors own copyrights in created works
  - REMEMBER - A creator of an original expression in a work is the author, and authors also are the owner of the copyright unless there is a written agreement by which the author assigns the copyright to another person or entity.

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Open Source Software/Hardware

- Software is protected by copyright and therefore, similar to plagiarism, no one is allowed to use/copy your software source code without permission

- Two types of Open Source licenses
  - Permissive
    - Apache, MIT, BSD, W3C
    - Permit downstream commercialization of products/services integrating the open source components
  - Viral/Copyleft
    - GPL, LGPL, MPL, EPL
    - Require dedication to public domain of all derivations

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Trade Secrets

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Trade Secrets

- Any secret information that gives an economic advantage over competitors that do not have access to the secret

- ONLY GOOD IF YOU CAN KEEP SECRET
  - Is reverse engineering possible? How likely is independent creation?
  - Don't file or register – once the secret gets it out cannot put it back in the bottle

- Requires protection efforts commensurate with the value of the Trade Secret
  - Employment agreements; non-disclosure agreements, need-to-know access; notices on documents; sign in sheets, key card access, security check points, razor ribbon, etc.

- Examples include, e.g., formulas (Coca-Cola), patterns, compilations, programs, devices, methods, techniques or processes, customer lists, and other confidential technologies

- Misappropriation punishable under law, but damages can be difficult to assess or retrieve

- Best offense is good defensive measure to prevent access and misappropriation

IP Potpourri

- Confidential Information
  - Contracts can be utilized to keep information confidential (NDA's)

- Employee Rights
  - Contracts
  - Work for Made for Hire Rules (Copyright)
  - Shop Rights (Patent)
  - Employee vs. Contractor

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Marketability

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Marketability

Measure whether a product or service will appeal to customers and sell at a certain price range to generate a profit

- De-risk the technology
- Understand your customers
- Knowledge about competitors and how they approach the market

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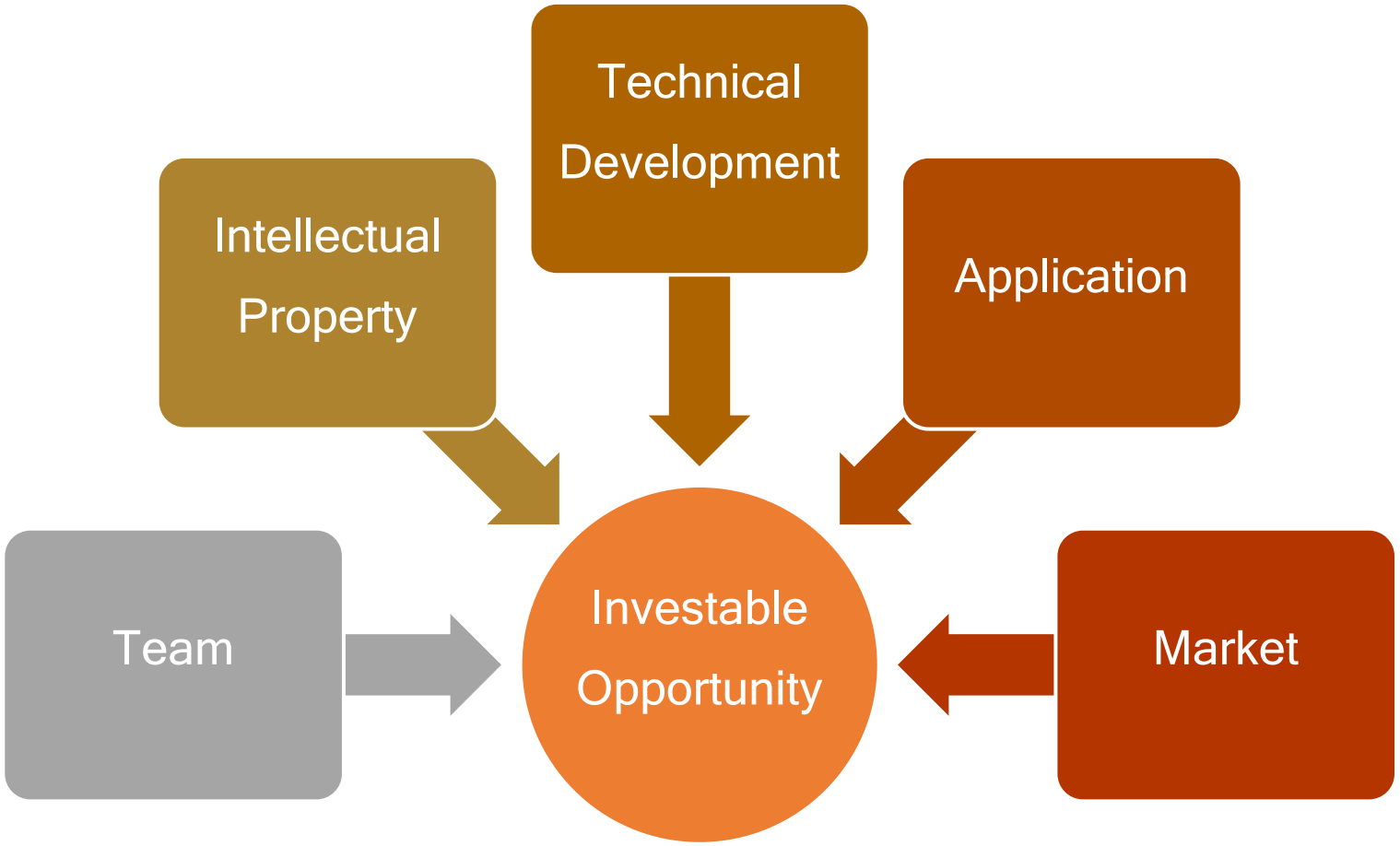
Marketability Factors



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What is the goal of market research?

To determine if it makes sense to invest in forming a legal entity, paying patent attorneys, developing infrastructure, and hiring personnel if a comparable product or process exists that works and is much less expensive.

IS IT WORTH THE COST?

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From: NYS Science+Technology Law Center , Lacey C. Grummons

Market Research Tools:
Customer Discovery and Desk Research

https://theprauthority.com/market-research-methods/

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Helpful Websites

1. Research Foundation YouTube, Customer Discovery: A Tool for Identifying High Impact Research Objectives Important to Industry and Consumer Markets
2. Business Source Elite (full text coverage of scholarly management, business, & economic journals, good overview/background resource)
3. Emergent Online (globally-reaching database of companies)
4. MarketLine Advantage (company & industry profile database)
5. Wharton Research Data Services (WRDS is a data research and business intelligence platform for economic, finance, and market research):
6. BRINT.com (bridges gap between tech & business and practice & theory; articles, analysis, forums, news)
7. Onecle (online database with samples of various contracts, agreements, & business forms)
8. University of Nebraska (general market)
9. Plunkett Research Online (market research & industry statistics)
10. MarketResearch.com Academic (access for academic institutions to market research used by business professionals)
11. SimplyMap (demographic, marketing, & business data laid out geographically)
12. ProQuest Statistical Datasets (web-based research solutions tool giving access to billions of data points in an easy-to-use interface)
13. Google Scholar
14. Dun & Bradstreet Million Dollar Database
15. Bloomberg Law
16. ZoomInfo (industry contacts)
17. EDGAR
18. IBIS World
19. North American Industry Classification System (NAICS)
20. InnovationQ (More than 100 million patents and documents to identify competition/partners)
21. Pharma IC from GlobalData (investigational and approved drug universe)
22. Frost & Sullivan (in depth market reports)

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Addressable Market Applications

What market applications or segments might this technology address? – think blue sky

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Market Structure For Each Application

For each specific market application / segment / indication:

- Is the market share consolidated or fragmented?
  - Number and names of top tier players, mid-tier players, bottom tier players, as well as, their typical marketing, partnering and technology deployment strategies
- Is the specific market segment relatively new or mature?
- What is the M&A (Mergers and Acquisitions) behavior?
- How do startups tend to fare?

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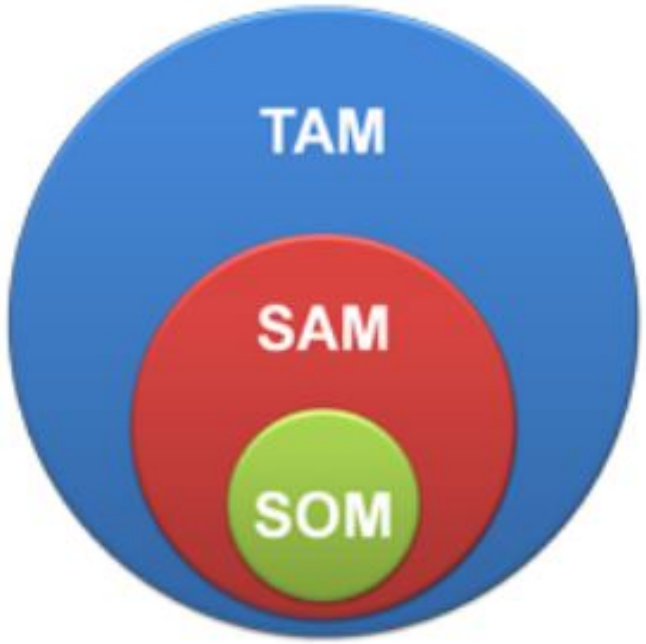
Market Size



Bottom up (# of units and cost per for projected sales) and Top down (market reports)

CAGR (Compound Annual Growth Rate)

TAM = $_____

Total Available Market - total market demand for a product or service

SAM = $_____

Serviceable Available Market - segment of TAM targeted by your products and services which is within your geographical reach

SOM = $_____

Serviceable Obtainable Market - portion of SAM that you can capture

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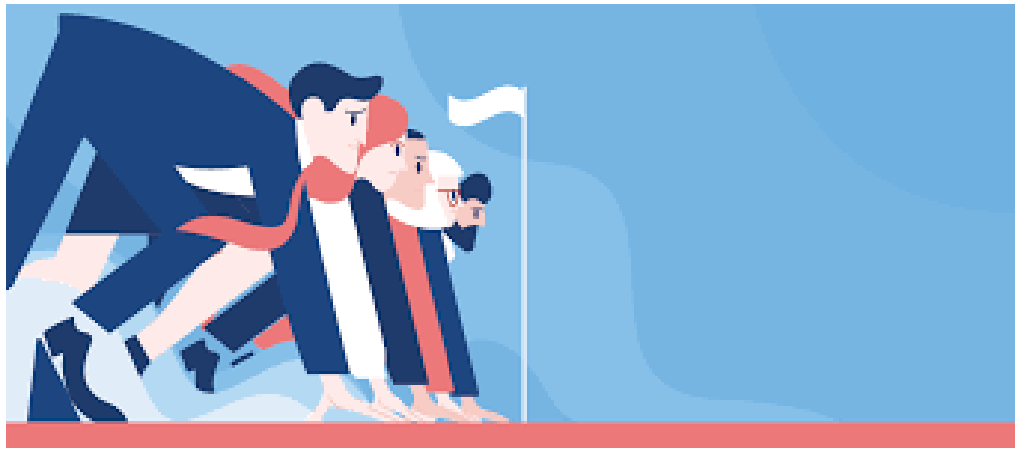
Potential Competitors

- What is the relative financial health of the potential competitor?
- How long have they been in business?
- What does their portfolio of products and services look like?
- Does the company have a formal (or informal) evaluation process for new technologies?
- Is there contact information available for a decision-maker within each company?
- Remember – competition may also be to do nothing
- Any potential competitors that could be partners?



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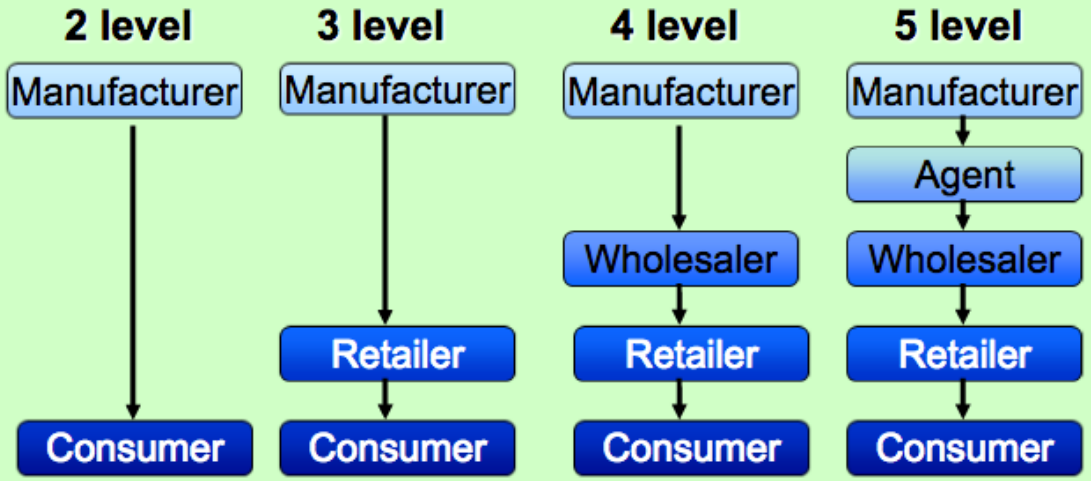
Distribution Channel / Supply Chain

Channel length = number of levels in a distribution channel.



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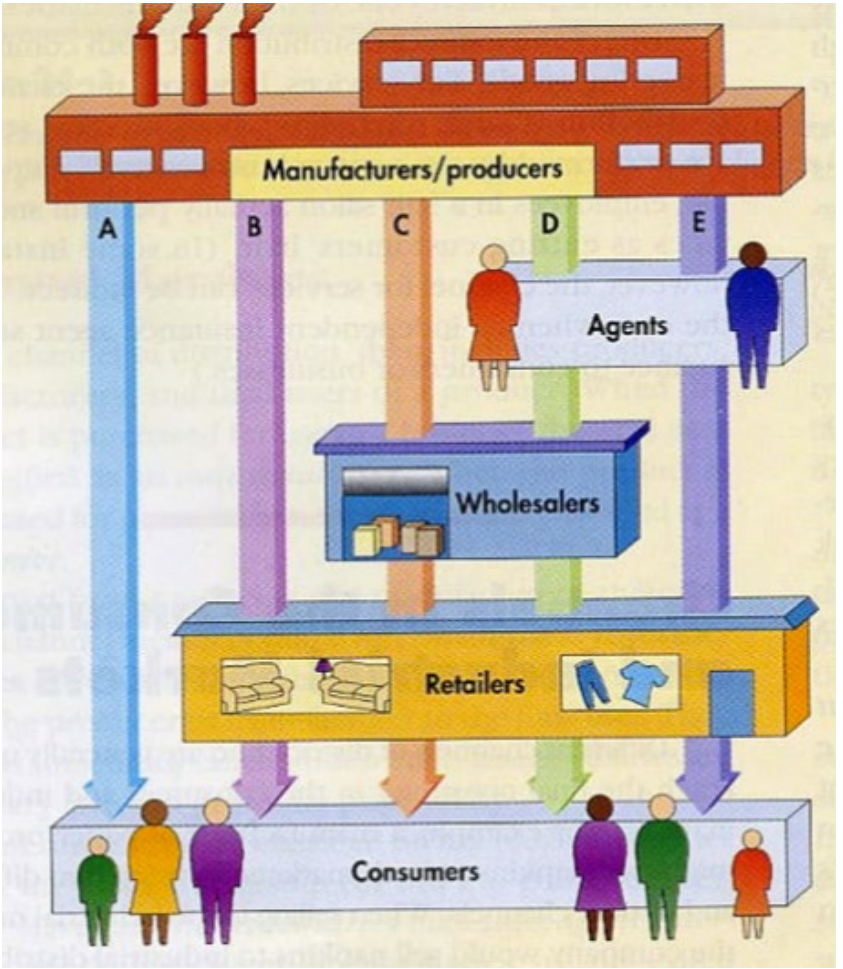

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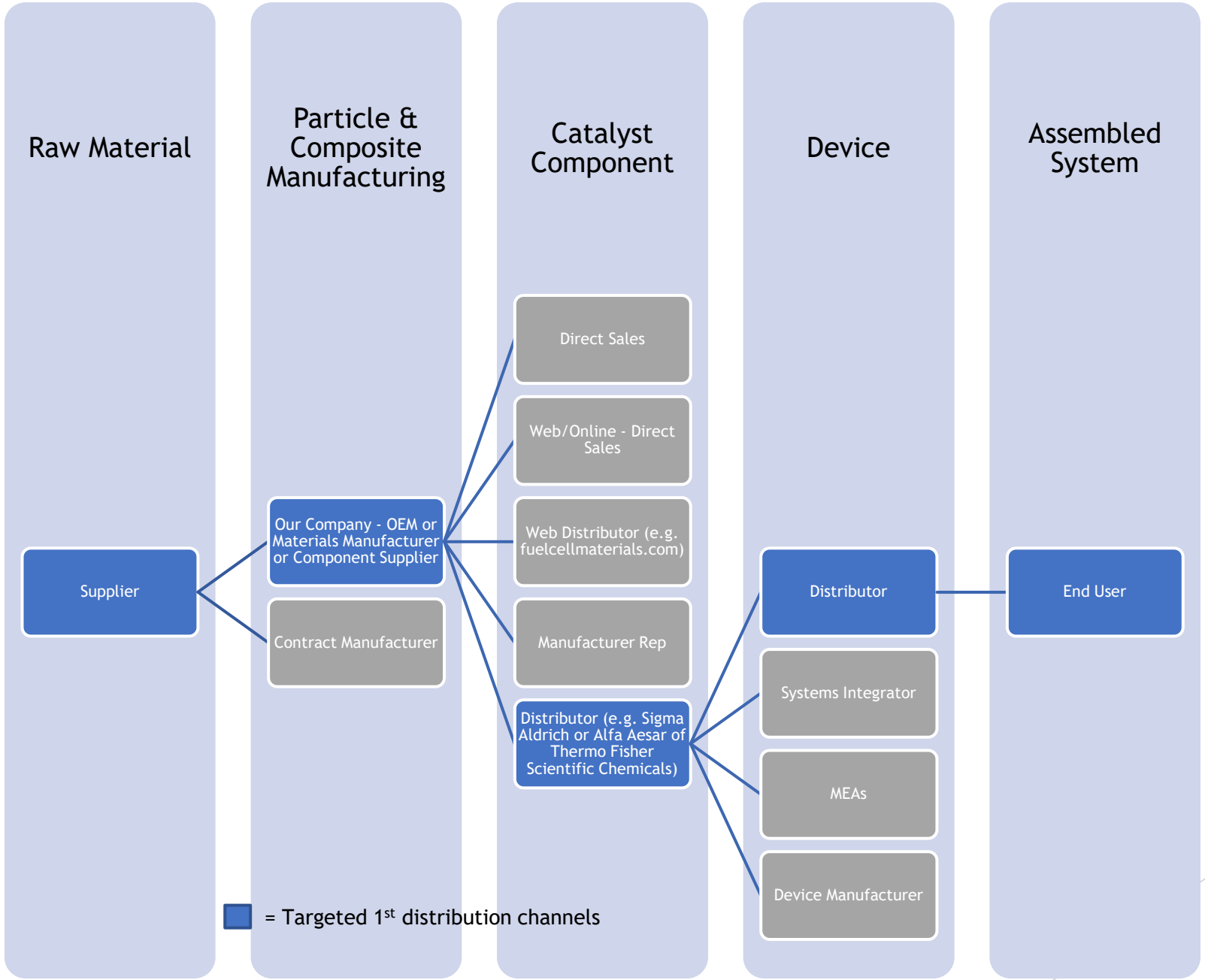
Example - Distribution Channels

Platinum-Free Nanowire-based catalysts for fuel cell applications



Technologies and Products Comparison

Comparable IP, Products & Services

- Similarities & Differences
  - Fabrication, construction, components
  - Use, performance, etc.
- Advantages & Disadvantages
- Pricing/cost structure of the competing products
- Stage of Development
  - Research, Clinical Trials, Available for Purchase
  - Timeline for market deployment

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Worksheet As a Tool

SUNY RF
The Research Foundation for
The State University of New York

SUNY Startup Summer School (S4) 2021 Cohort
Evaluation of the Opportunity – Marketability Basics, June 16, 2021

Name: _____

Brief Description of Concept: _____

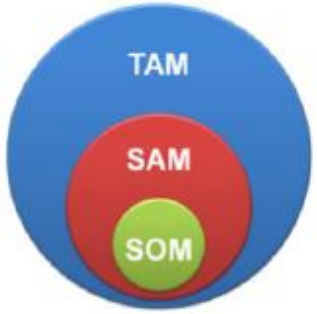
_____

_____

Market: *Identify the potential market(s) for the invention. Quantify current market size estimates, projected market size, market trends, etc.*
Markets: _____

_____

Size:



TAM = $_____ Total Available Market is the total market demand for a product or service.

SAM = $_____ Serviceable Available Market is the segment of TAM targeted by your products and services which is within your geographical reach.

SOM = $ SAM that you can capture. or Serviceable Obtainable Market is the portion of

_____

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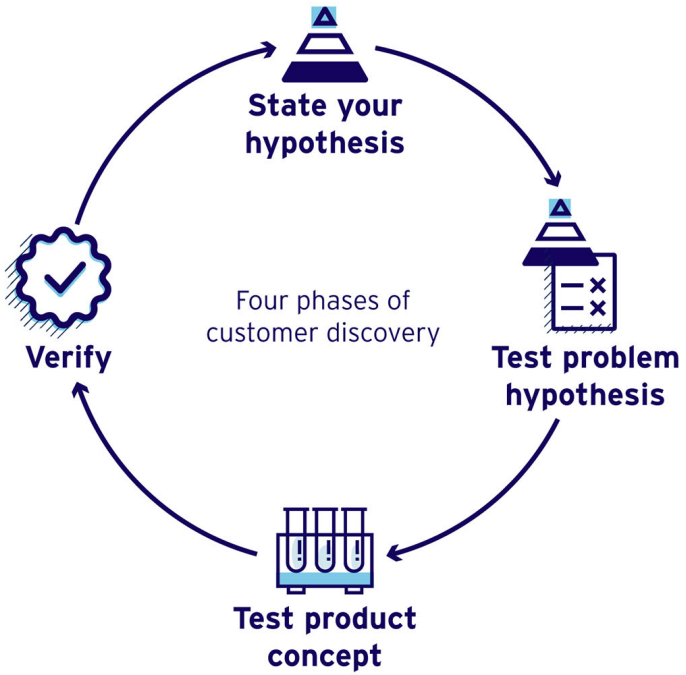
Customer Discovery

- The process of conducting research through customer interviews to identify the specific problem or specific commercial objective a technology solves
- Process used by entrepreneurs to identify and validate scalable, repeatable, and worthwhile business models



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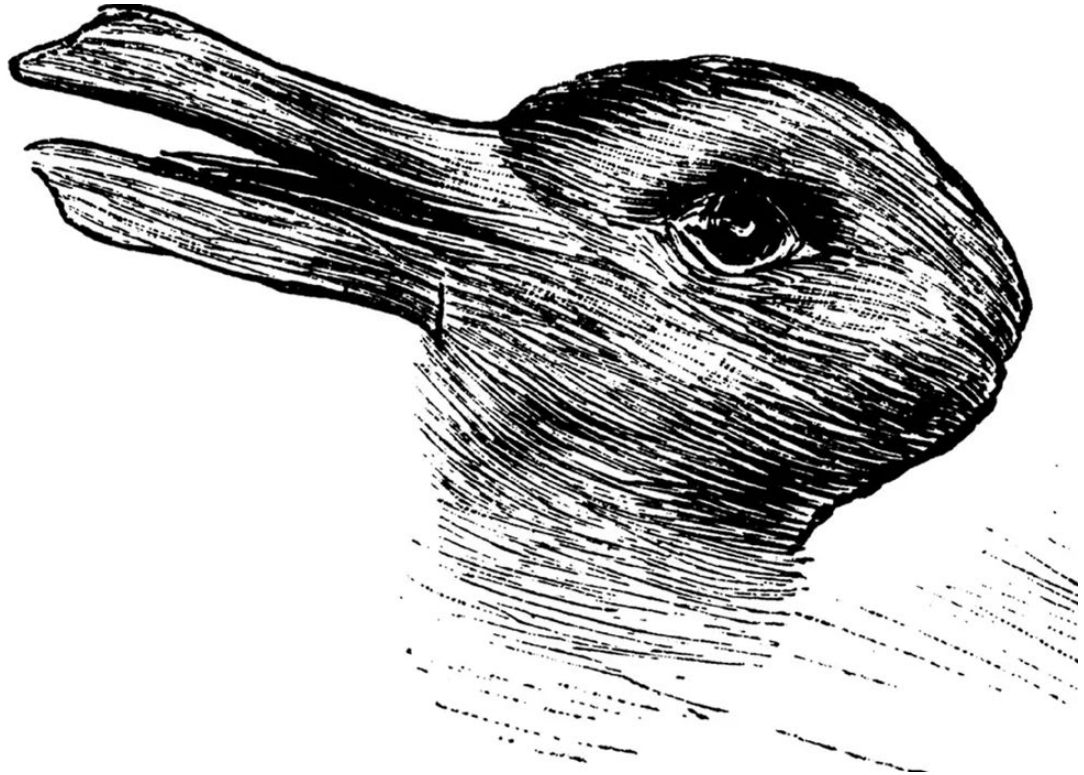
Why Is Customer Discovery Important?



The above image is from Thomas Kuhn's book The Structure of Scientific Revolution which introduced "Paradigm shift" in 1962

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Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
	Key Resources		Channels	
Cost Structure			Revenue Streams	

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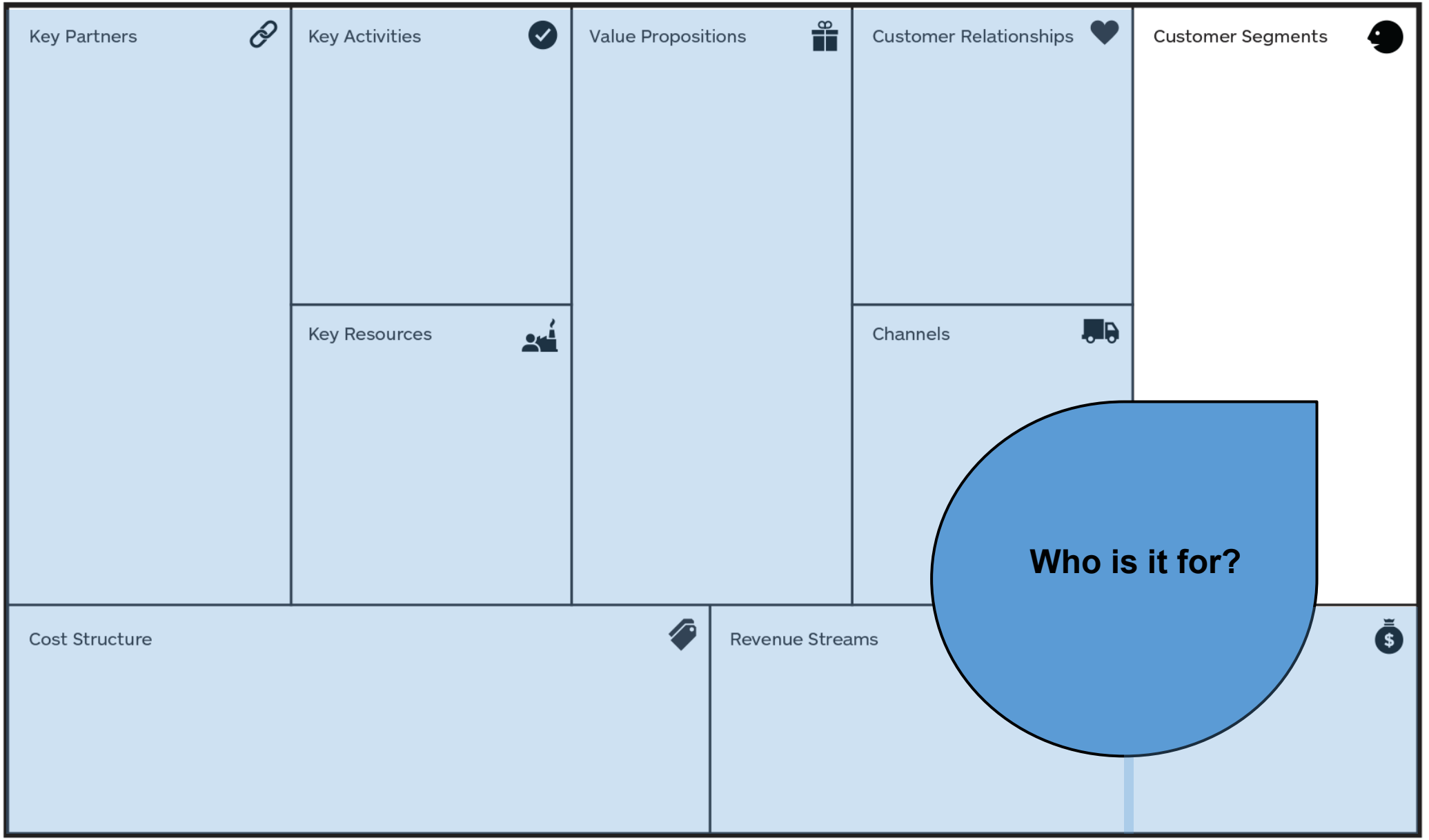

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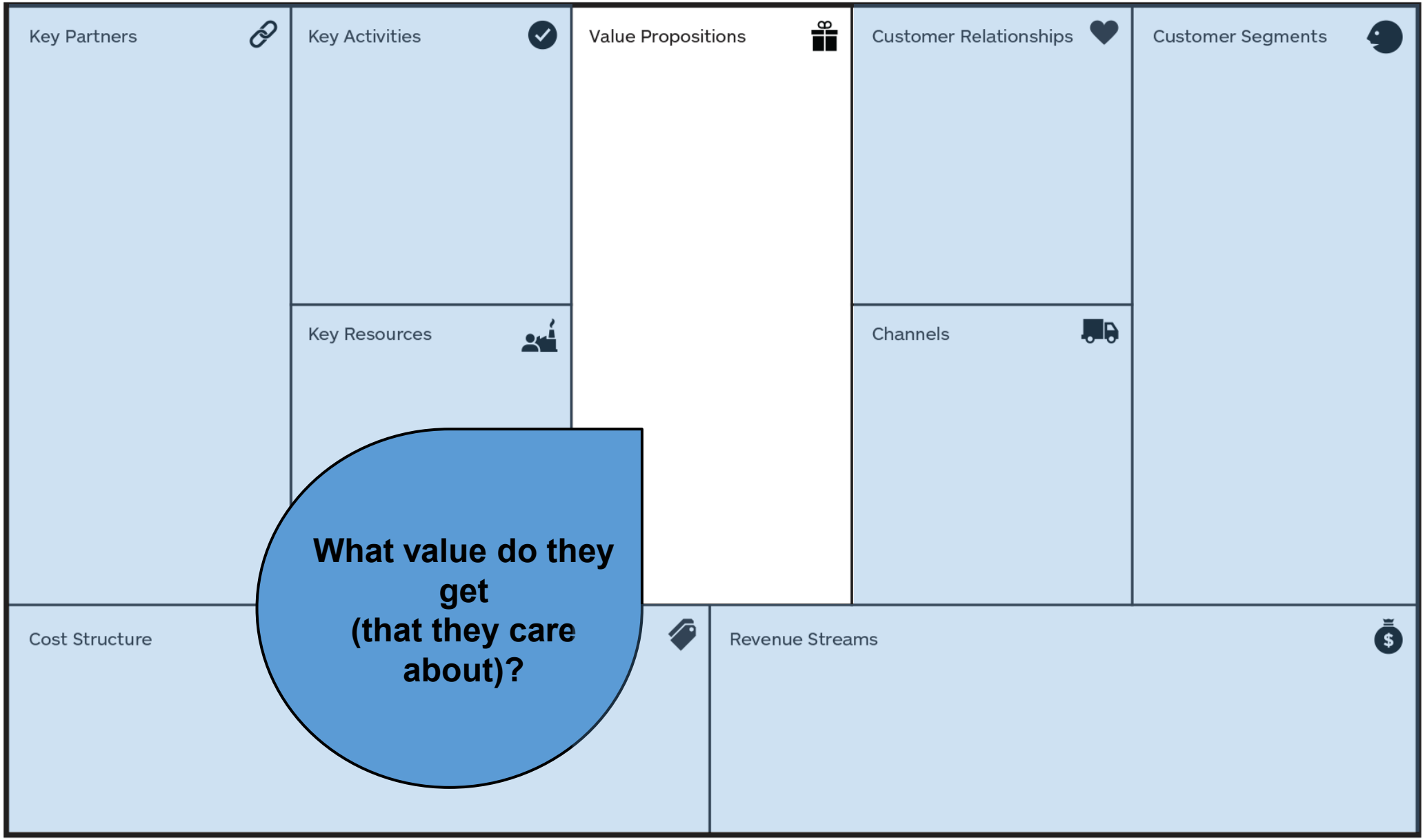

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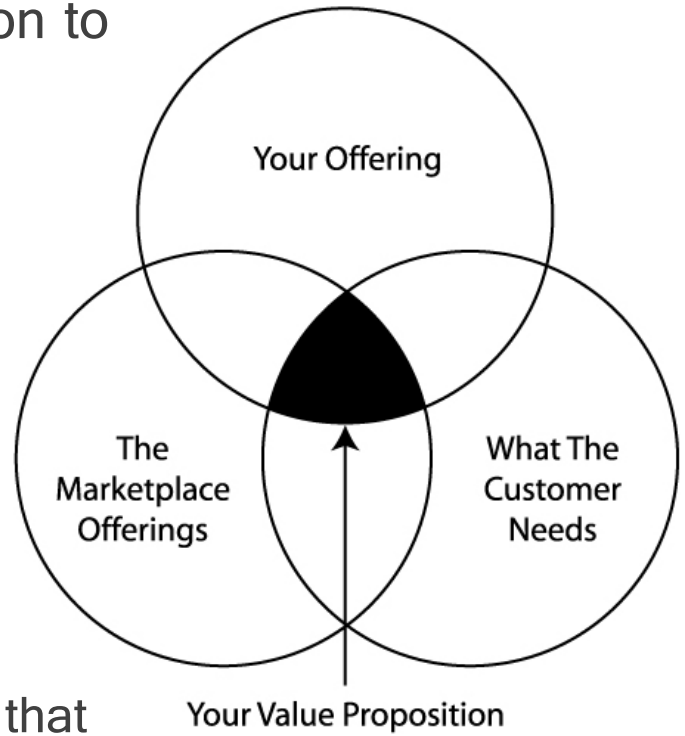
Value proposition

Value Proposition: Single, clear, compelling message that states why you are different and worth paying attention to

Template

For [target customer]
Who wants/needs [compelling reason to buy]
The [product name] **is a** [product category]
That provides [key benefit]
Unlike [main competitor]



Example:

For project managers at drone manufacturing companies that want to minimize their downtime of operating drones, the Wireless Charging Station provides simultaneous charging of multiple drones at a faster rate than currently offered solutions.

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“It is not the strongest or the most intelligent who will survive but those who can best manage change.”

– Charles Darwin

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NSF I-CORPS
CUSTOMER DISCOVERY APPROACH

Helps determine points of intersection between technology, business concepts, and market realities

Most initial concepts change dramatically in the course of a few weeks when the process is applied with attention and diligence\

Some abandon their initial concepts altogether and then use the process to find more productive opportunities

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Thank you!

- Please answer the Zoom poll question.
- Recording will be sent tomorrow.
- Don’t forget to connect with us on LinkedIn.
- See you next week for

Week 4: June 23

How To Win Grants – Mastering Non-Dilutive Funding Sources

Kirk Macolini, InteliSpark

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