

# **Qatar Foundation – Developing Systems to protect and disseminate research outcomes**

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John Taylor McEntire, MBA, CLP, CPVA

Director – Industry Development and knowledge Transfer  
Qatar Foundation Research, Development and Innovation



# Qatar

## Country Statistics

- Location: Middle East



- Main export goods:

- LNG (Liquefied Natural Gas)
- Petroleum products
- Fertilizers
- Steel



- **GDP:** 156.59 billion USD
  - About \$70K per capita
- **Population:**
  - Total – 2258283 (est. July 2016)
  - Qataris – 11.6%
  - Expatriates – 88.4%
- **Languages:**
  - Arabic – official language
  - English – second language
  - Other major languages: Farsi, Urdu, Hindi, Malayalam, Tagalog, Nepali
- **Culture:** Arabic/Muslim but very cosmopolitan
- **Literacy Rate:** 97.3%
  - Males – 97.4%
  - Females – 96.8%

# Qatar

# National Aspirations



## **Economic Development**

Development of a competitive and diversified economy capable of meeting the needs of, and securing a high standard of living for, all its people both for the present and for the future. Includes: Sound Economic Management; Responsible Exploitation of Oil and Gas; Suitable Economic Diversification

## **Social Development**

Development of a just and caring society based on high moral standards, and capable of playing a significant role in global partnerships for development

## **Human Development**

Development of all its people to enable them to sustain a prosperous society

## **Environmental Development**

Management of the environment such that there is harmony between economic growth, social development and environmental protection

# Qatar

## Infrastructural Development

### Research Climate

- R&D investment: QNRF spends roughly \$100 Million annually; QF supports branch campuses; Govt supports Qatar University, Hamad Medical Corporation and Sidra Women's and Children's Research Hospital
- Very little research done by corporate groups – goal to increase

### Understanding of IP

- Qatar Patent Office started in 2013 – functional since 2016
- Few IP attorneys, few licensing deals.
- Office spends good deal of time in educational activities.

### Economic Development

- Economy dominated by LNG and petroleum
- Big focus on tangibles – i.e. buildings; ports; ships; airplanes
- Focus on sports events – tennis, handball, World Cup in 2022
- Infrastructural building costing \$500 million per week
- Efforts to increase industrial activity, productivity and exports
- Great desire to be independent after Saudi/UAE siege



# The Sidra Tree

مؤسسة قطر  
Qatar Foundation



إطلاق قدرات الإنسان Unlocking human potential

“Qatar Foundation for Education, Science and Community Development (QF) is a private, non-profit organization that is supporting Qatar’s transformation to a knowledge-based economy by unlocking human potential.”



# The Original Vision



**His Highness the Amir of the State of Qatar**  
Sheikh Hamad Bin Khalifa Al-Thani



**Her Highness Sheikha Moza bint Nasser**  
Chairperson, Qatar Foundation for  
Education, Science and Community Development

## **QATAR NATIONAL VISION 2030**

Creating a thriving and sustainable post hydrocarbon society in Qatar. The Strategy details how Qatar will deploy its vast revenues from hydrocarbon resources to create the knowledge economy.



# Education Pillar



HEC  
PARIS

  
NORTHWESTERN  
UNIVERSITY  
IN QATAR

TEXAS A&M  
UNIVERSITY *at* QATAR

جامعة كارنيغي ميلور في قطر  
Carnegie Mellon Qatar

  
UCL

  
أكاديمية قطر للقادة  
Qatar Leadership Academy

VCU Qatar

Qatar Academy  


  
كلية الدراسات الإسلامية  
FACULTY OF ISLAMIC STUDIES

جامعة حمد بن خليفة  
HAMAD BIN KHALIFA UNIVERSITY



كلية طب وايل كورنيل في قطر  
Weill Cornell Medical College in Qatar

جامعة جورجتاون  
GEORGETOWN UNIVERSITY  
كلية الشؤون الدولية في قطر  
SCHOOL OF FOREIGN SERVICE IN QATAR

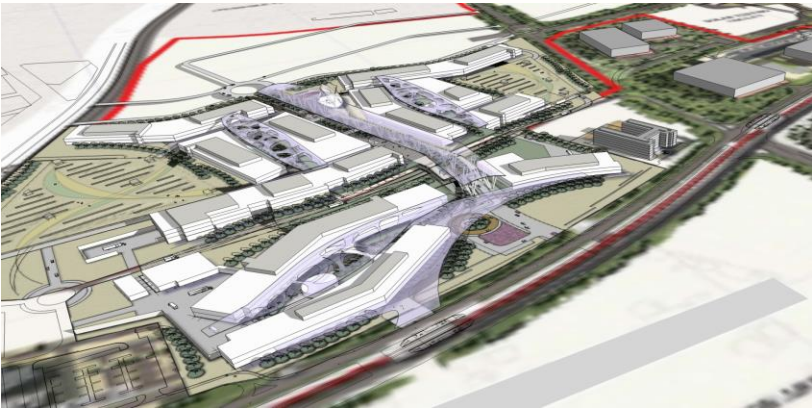


# Community Development Pillar





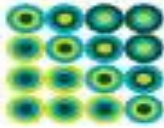
# QF Research, Development and Innovation



الصندوق القطري لرعاية البحث العلمي  
Qatar National Research Fund

*Member of Qatar Foundation*

**QATAR SCIENCE & TECHNOLOGY PARK**



*Member of Qatar Foundation*

جامعة حمد بن خليفة

HAMAD BIN KHALIFA UNIVERSITY



# Qatar Foundation Research, Development & Innovation

**Vision** Qatar will be a leading center for research and development excellence and innovation

- Mission**
- Develop the capabilities of Qatar's people and institutions
  - Build and maintain a competitive and diversified economy
  - Improve the health and social well-being of Qatar's population
  - Support Qatar's distinctive culture and its people's security
  - Preserve and improve the natural and built environment



# From a Strong Foundation to a Focus on Impact

2005 - 2015

## Laying R&D Foundation



25x growth in number of researchers



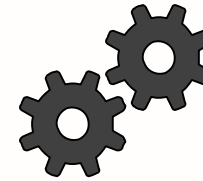
• 40x increase number of publications



- Creation of QNRF
- Creation of Branch Campuses
- Founding of Research Institutes
- Creation of QSTP
- Establishment of QF R&D
- Establishment of IPTT
- Initiation of QNRS 2012 and articulation of the Grand Challenges

+2016

## Focus Research on Impact



- Identify sectors where Qatar can have a competitive advantage
- Focus funding on these priority areas
- Involve the “end-users” from private & public Sector
- Encourage innovation funding ecosystem
  - Tech Development Fund
  - Research to Startup Program
  - Technology Ventures Fund



# Industry Development & Knowledge Transfer

*Knowledge transfer (KT) is a term encompassing a very broad range of activities to support mutually beneficial collaborations between the academic and research community with businesses and the public sector. As a 'contact sport' KT functions best when people meet to exchange ideas thereby realizing fresh opportunities and new ways of thinking.*



# IDKT Core Functions

Innovation Training  
& Recognition

Intellectual Property  
Management

Commercialization and  
Licensing

Industry Support and  
Business Development



# Intellectual Property Management

## Activities include:

- IP Identification – Invention Disclosure Receipt
- IP Evaluation
  - Marketability Assessment
  - Patentability Assessment
  - Ownership Analysis
- Q-Team Review and Decision
  - Elect
  - Defer
  - Decline
- IP Protection & Maintenance
  - Patent
  - Copyright
  - Trademark
  - Trade Secret

## OVERALL QF IP STATISTICS

Year	# of IDRs	Current Status of IP Protection	
2007	1		
2009	6	# IDRs Elected for IP Protection	356
2010	2		
2011	19	# IDRs Elected for Patent	294
2012	43	# Total Active Patent Applications	356
2013	49	# Granted/Allowed Patents	75
<b>2014</b>	<b>57</b>	# Active Patents Filed	281
<b>2015</b>	<b>125</b>		
<b>2016</b>	<b>107</b>	# IDRs Elected for Copyright	59
<b>2017</b>	<b>75</b>	# Registered Copyright	14
<b>2018</b>	<b>61</b>	# Unregistered Copyrights	45
<b>2019</b>	<b>30</b>		
<b>TOTAL IDRs</b>	<b>575</b>	# IDRs Elected for Trademark	4



# Commercialization and Licensing

Taking QF IP & Capabilities To Market



- Market Analysis & Licensing Strategy
- IP Development
  - Technology Development Fund (TDF)
- Web Presence/Social Media
- Active Marketing
- Strategic Engagement Advise
- Professional Negotiation
- Agreement Development
- Agreement Management
- Revenue Distribution

## Commercialization Activities:

- Agreements
  - Non-Disclosure Agreement
  - Open Source License
  - Academic/Research Use License
  - Collaboration License
  - Commercial Use
    - Evaluation License
    - License Option
    - Non-Exclusive License
    - Exclusive License
    - Licenses to Start-ups/Spin-outs
  - Data Set License
- Market review
- Marketing & partnering
- Facilitating IP matters in collaboration opportunities

## 2019 Quarter One Agreement Activity

### Executed

- 2 Licenses – 1 Exclusive to a Start-up & 1 Non-Exclusive Corporate Use
- 10 – Non-Disclosure Agreements

### Awaiting signature from Licensee

- 3 – Non-Exclusive licenses
- 2 – NDAs

### Under negotiation

- 4 – Corporate Licenses
- 16 – Data Sharing Licenses

### In discussion

- 5 – Opportunities being vetted



# Stakeholders

## Qatar Foundation Entities:



## Non-QF Entities:



من مبادرات مؤسسة قطر  
Stars of Science Participants



مختبر مكافحة  
المنشطات قطر  
Anti Doping  
Lab Qatar



Al Khabeer  
Participants





# When Researchers should Submit and Invention Disclosure Report

- Prior to any public disclosures
- Fully workable concept
- Novel compared to existing competing solutions
- Inventive compared to existing competing solutions
- Practical application



# Intangible Value

Value created or owned by a business that has no physical form. Historically, firms mostly produced physical products and owned physical property such as factories. This has changed, as it is common for the revenue and assets of a firm to be largely based on things that can't be touched. The following are illustrative examples of intangible value.

Customer experience such as the usability of a device or service on a flight.

The identity and reputation of a brand.

A firm with a productive and creative organizational culture that regularly produces innovation where others struggle.

Talent in areas such as leadership, design, engineering, marketing and sales.

Know-how Practical knowledge that allows you to do real things.

Intellectual property such as trade secrets, designs, patents, copyright, trademarks and trade dress.

Relationships

Relationships with customers, employees, partners and communities.

# Submit an Online Disclosure

- To access go to IPTT website on <https://qf.wellspringsoftware.net/kms>
- To set up user account, contact Nancy on [nagoel@qf.org.qa](mailto:nagoel@qf.org.qa)

## 3 Types of Disclosure Forms:

- Invention Disclosure
- Software Disclosure
- Creative Work or Work of Authorship Disclosure

## Sections include:

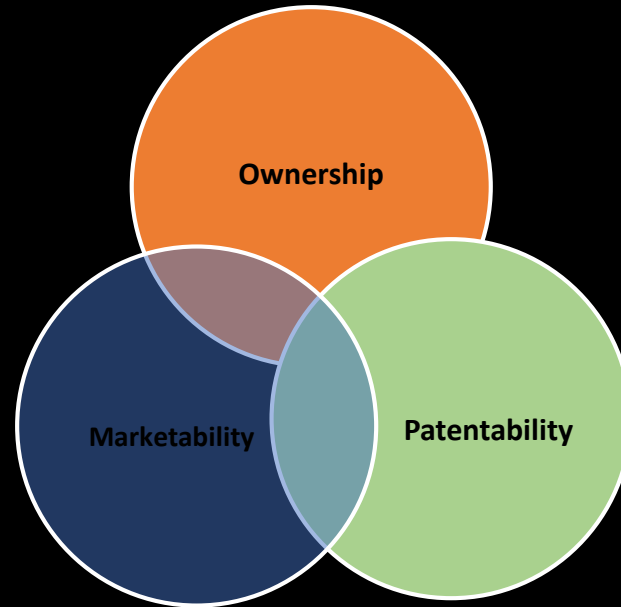
- Description of the invention/work and potential applications
- Past/planned public disclosures
- Inventors/authors details
- Funding sources and collaborators

The image shows two screenshots of the Sophia Knowledge Management System. The top screenshot is the login page, featuring a 'Login' form with fields for 'Username' and 'Password', a 'Login' button, and a 'Forgot Your Password?' link. A callout box points to the 'Forgot Your Password?' link with the text: 'Password: To obtain password, click on 'Forgot Your Password?'. Another callout box points to the 'Username' field with the text: 'Username: X@qf.org.qa'. The bottom screenshot is the 'New Disclosure: Details' form. It includes a navigation bar with 'Details', 'Researchers', 'Funding', 'Questions', and 'Confirm'. A message states: '"Thank you for disclosing your invention or work! Complete information will improve the possibility that it will be patented or protected. Incomplete forms will not be accepted. Please call IPTT if you have questions regarding this form."' A note indicates that an asterisk (\*) denotes a required field. The form fields include: 'Title\*' (text input), 'Disclosure Type\*' (a dropdown menu with options: 1. Invention, 2. Software, 3. Creative Work or Work of Authorship), 'Description' (text area), 'First Public Disclosure' (date and time selector), 'Circumstances of Disclosure' (text area), 'Suggested Keywords' (text area), and 'Attached Documents' (file upload section with a 'Browse' button and an 'Attach File' button).

Every approved Disclosure is reviewed on

### **Market Analysis**

A preliminary analysis of the commercial potential of the invention using patent analytics tools and market data



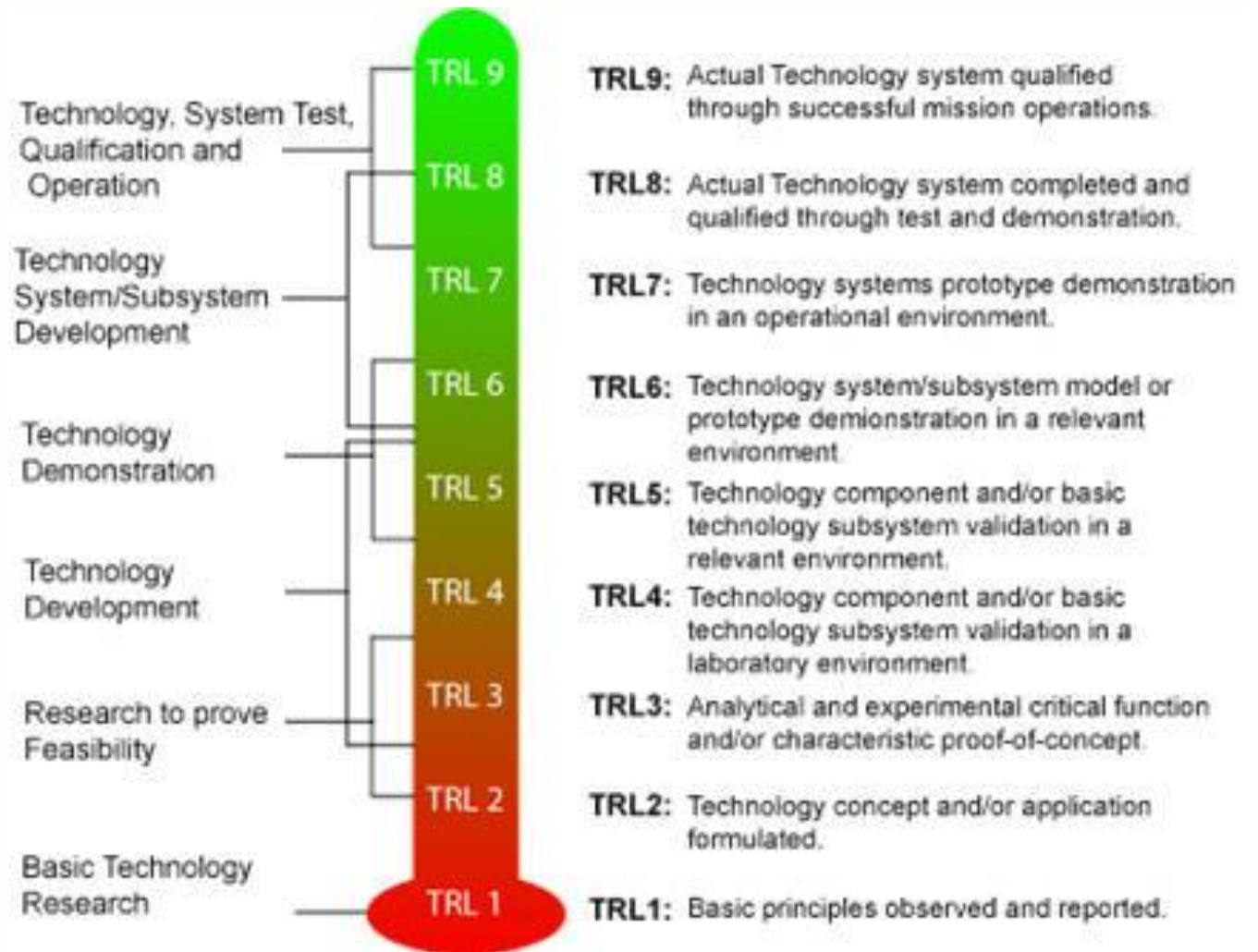
### **Ownership Analysis**

An analysis and determination of the ownership rights in the IP by reviewing inventorship and collaborative, employment, and/or funding agreements

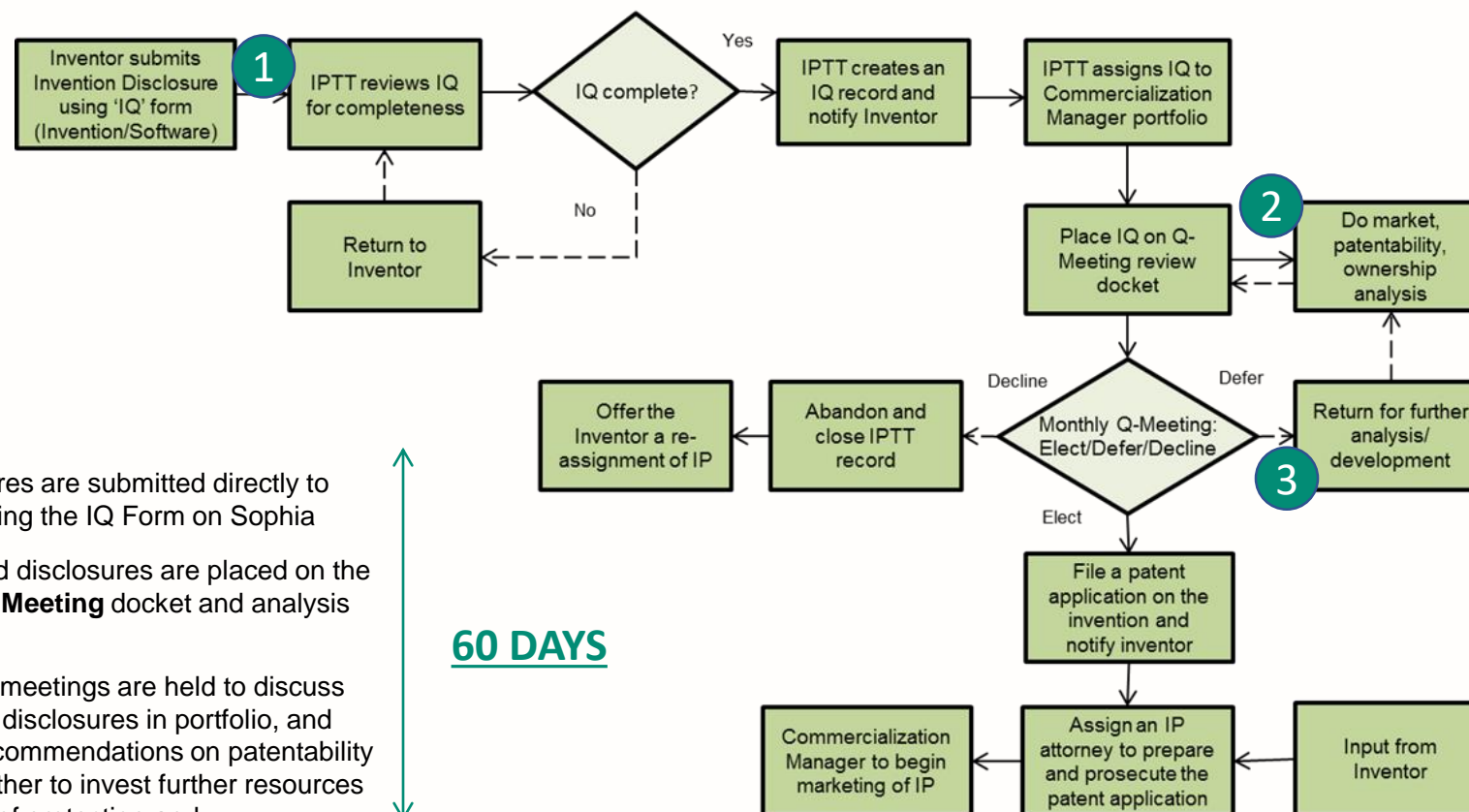
### **Patentability Analysis**

An analysis of the likelihood of obtaining a patent by conducting patentability or prior art searches performed by specialized patent attorneys

# Where Do the Research Results Fit on the Technology Readiness Level?



# IP Management Workflow



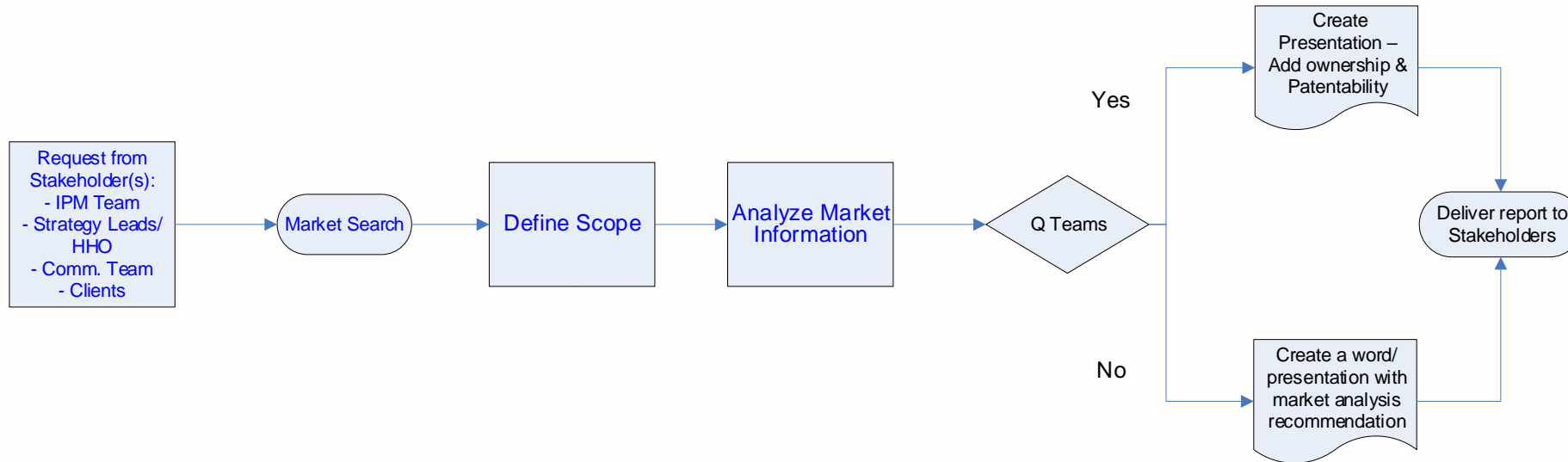
## Steps

- 1 Disclosures are submitted directly to RSIM using the IQ Form on Sophia
- 2 Approved disclosures are placed on the **Q-Team Meeting** docket and analysis begins
- 3 Q-Team meetings are held to discuss status of disclosures in portfolio, and make recommendations on patentability and whether to invest further resources in terms of protection and commercialization

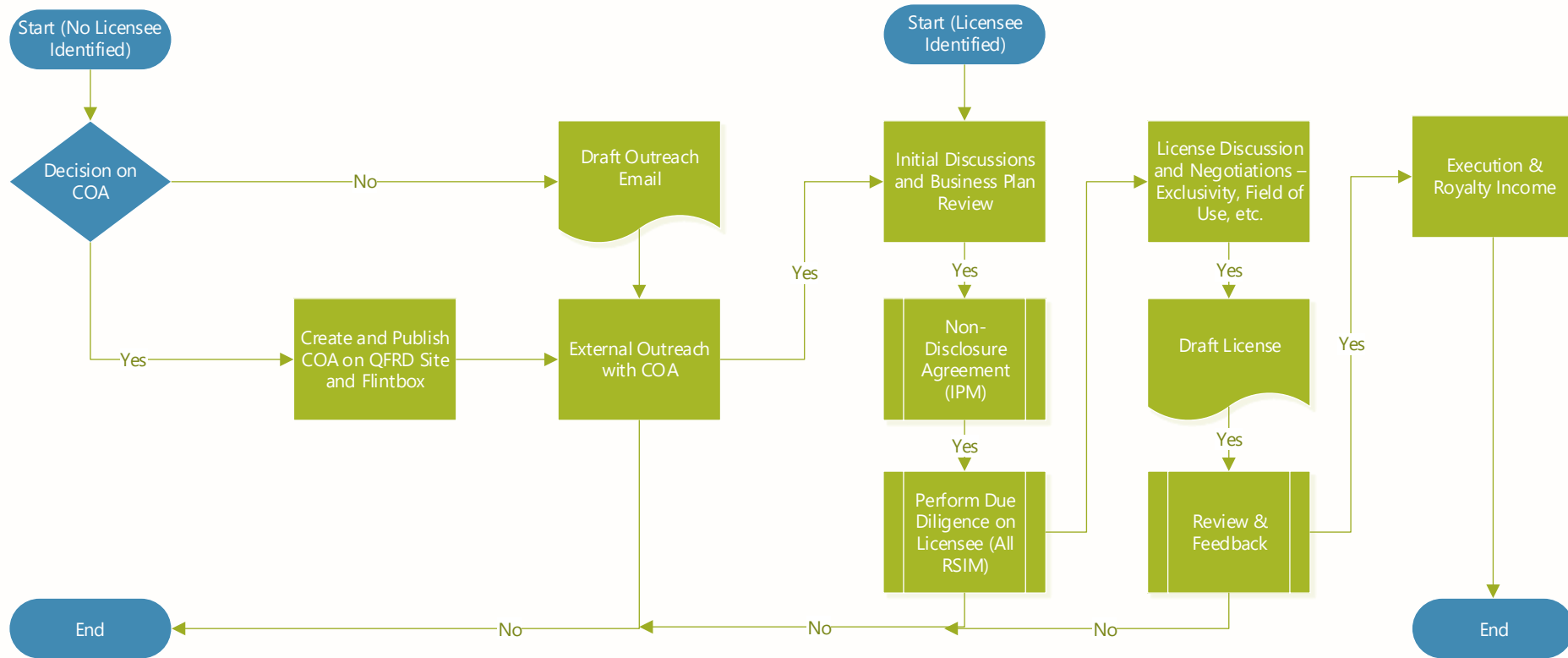
**60 DAYS**



# Analytics Workflow



# Marketing & Licensing Workflow





# What happens after you submit your invention?

Inventor Submits



Review & Analysis Performed by IDKT



## Q-Team

Unit Liaison  
IDKT  
Technical Experts

Inventor Presents (optional)

Decision made within 60 days of receiving disclosure.

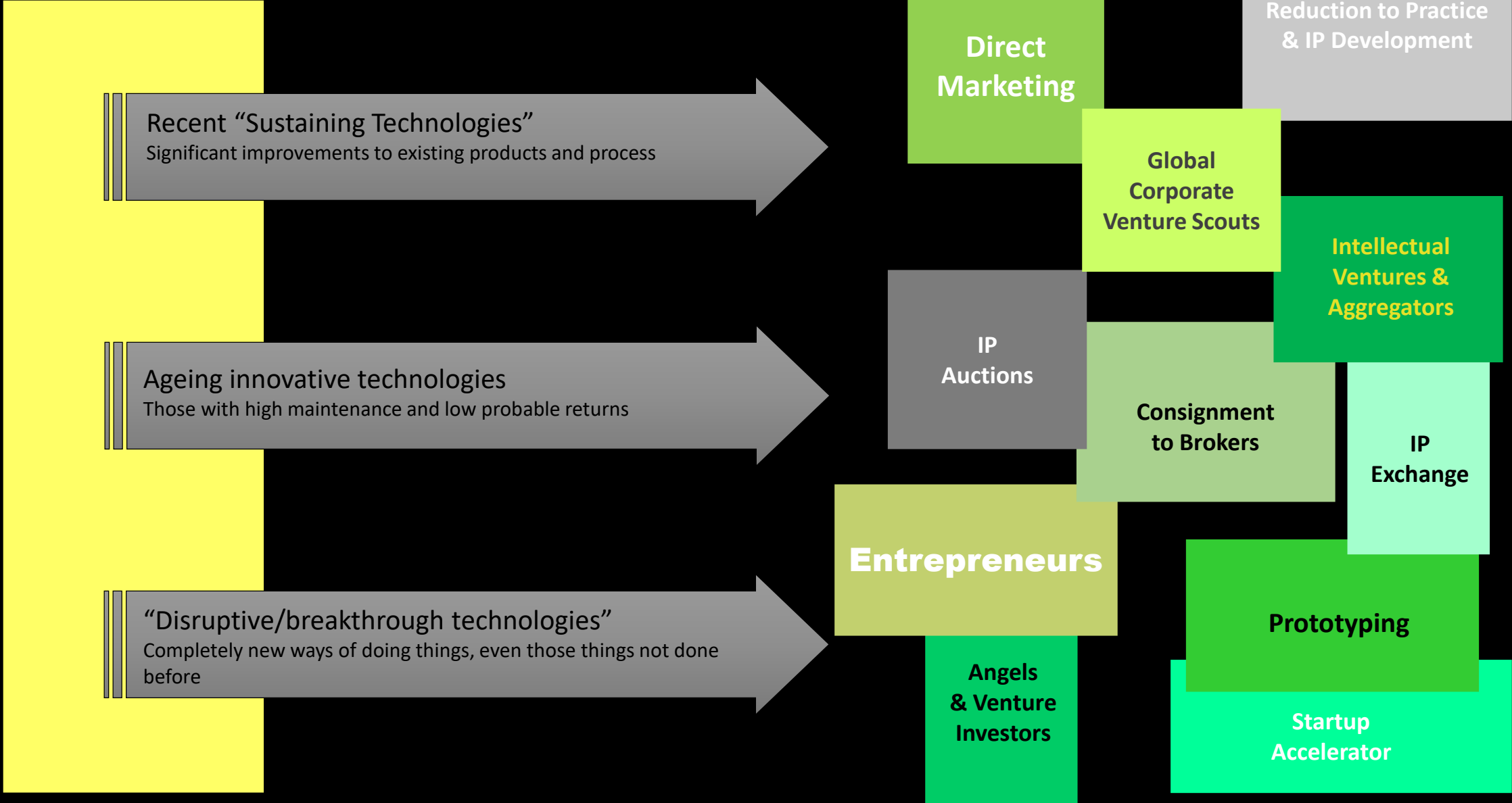
**Elect**

**Defer**  
(more info needed)

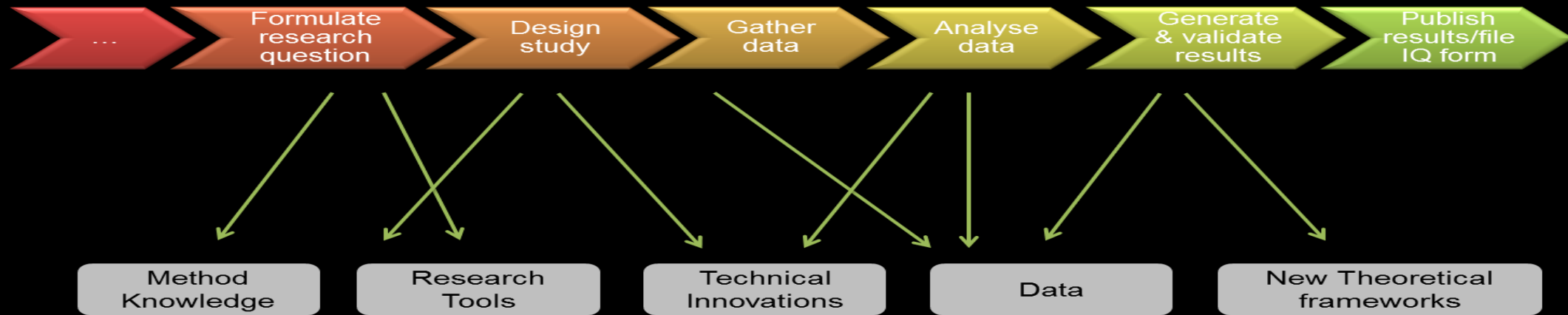
**Decline**

Inventor Notified of Decision

# Commercialization Venues



# Managing Research Results as Intellectual Assets



- **Examples include:**

- Algorithms
- Implementation knowledge
- Production knowledge
- Production methods
- Experiment data
- Manuals

- Drawings and blueprints
- Inventions
- Software tools
- Source code
- Databases
- Utilization knowledge
- Simulations

# Research to Startup Program

Research

Venture Creation

The Research To Startup is meant **to bridge the divide** between research and venture creation.

RTS

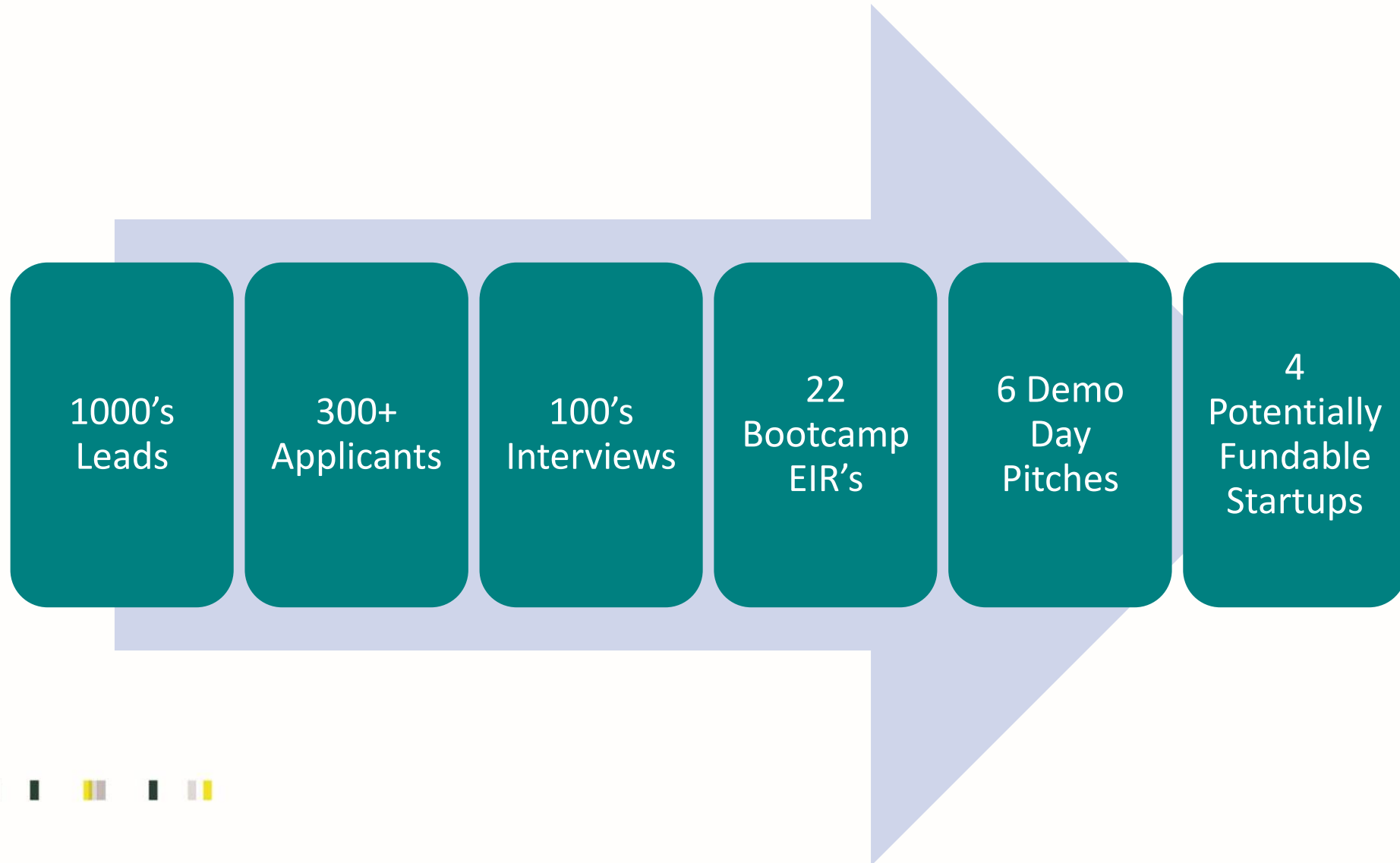
Allowed us to **attract entrepreneurs** from around the world excited about taking some of our technologies to market.

## Program Promise:

- Initial investment
- Easy tech transfer
- Easy incorporation
- QSTP Office space
- Vetted technologies
- Research team
- Business mentors



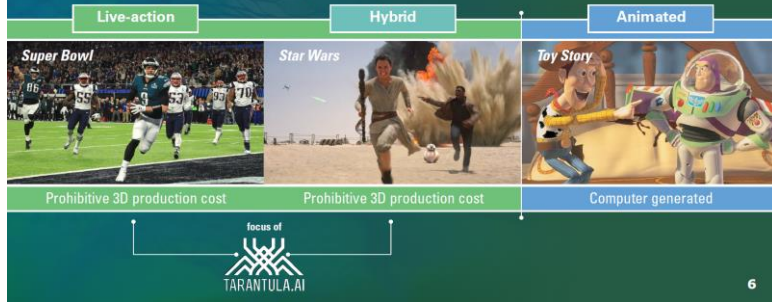
# Results



# Tarantula

## TAI will become the standard platform to convert live-action video from 2D to 3D

### Types of stereo 3D content



6

## TAI's leadership has extensive experience across media & technology

- Layne Fox, Co-founder, CEO**
  - 20 years GTM leadership in digital media products and technology services
  - Former Dir. Commercial Operations, Digitalist, N.A.
  - Dual B.S. cum laude, Business Management and Finance, University of Florida
- David Podolsky, Co-founder**
  - Strategy and transformation leader with 25 years top-tier business consulting and operating expertise
  - Former Senior Partner, Bain & Co.
  - MBA, Harvard Business School and B.A. in economics cum laude, Harvard College
- Leo Vezzali, Head of Product**
  - 25 years expertise in visual effects, stereoscopic 3D
  - Executed 100+ major feature films, commercials, interactive AR/VR/MR experiences
  - Member: Visual Effects Society, Producers Guild of America, Motion Pictures Editors Guild
- Will Gaddy, Head of Engineering**
  - Technology executive with 30 years of experience developing mass-market media software
  - VR optics and signal processing expert
  - 48 patents across vision systems, machine learning/AI, Distributed/cloud GPU

- Active advisory**
- John Canning, Chairman, Producers Guild, New Media Council
  - Michael Ludden, Former Dir. of Product, AR/VR Labs, IBM
  - Tony Liano, VC, Former SVP Sony Pictures Entertainment
  - Habib Al-Rached, PhD, Sr. Visualization Researcher, GE
  - Teppo Kuisma, Chief Development Officer, Digitalist Global
  - Scott Connolly, Co-founder, The Astronaut's Guild

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## TAI will target five B2B verticals within the Video/XR supply chain

Business model	SAAS AND API LICENSES FOR VIDEO/XR SUB-VERTICALS				
	Enterprise Services	Content Owners	Channels	Production Software	OEM
XR Sub-verticals	deluxe	FOX	VR SAMSUNG	Adobe	SAMSUNG
Sample customers & partners	PRIME FOCUS	Discovery CHANNEL	houzz	unity	magic leap
	RYOT	NFL	Six Flags	MOCHA VR	oculus

## TAI's software achieves automated 2D-to-3D conversion at < 5% of the cost of alternatives

Enables mass-production of immersive content

- Variable cost < 5% of current alternatives
- Converts LIVE-ACTION video, from any 2D source: 180/360 & HD 2K/4K/8K
- Real time - supports live-broadcast
- 2D-to-depth map output

5

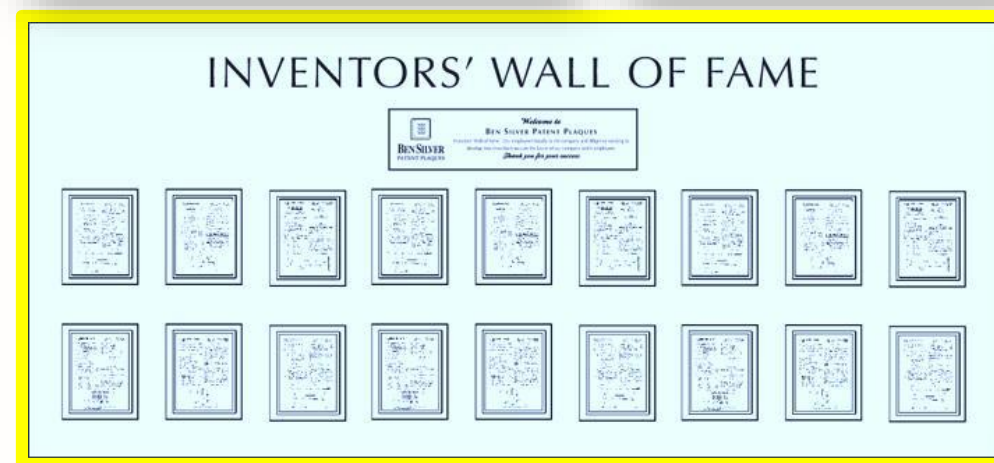


## Qualifications for RTS Participation

- High Technology Readiness Level (TRL)
- Fully workable technology/software
- Stand Alone platform technology
- Practical application
- Broad market reach
- Some usage track record
- Novel compared to existing competing solutions
- Inventive compared to existing competing solutions
- No uncovered third party obligations
  - Open Source permissive license okay; GPL not okay

# Innovation Management & Recognition

- **Enhancing QF's ability to innovate**
  - improving internal policies and procedures
- **Introducing new channels for collaboration with private sector**
  - consultancy services
  - fees-for-services
  - data and information
- **Innovation Culture Development Support**
  - **Inventors Training and Guidance**
    - Intellectual Property
    - Market Strategy Development
      - Research Collaborators
      - Potential Licensees
  - Recognition and Rewards
  - Revenue Distribution





## Key Challenges

- Lack of timely submission of or incomplete Invention Disclosure Reports (IDRs)
- Low TRL in inventions – Could use more Technology Development Funds
- Unreasonable Researcher Expectations in Licensing activities
- Need for understanding about need for NDAs and securing confidentiality
- Need for universal understanding of individual groups activities in innovation ecosystem development



# Questions

