Open Systems Architecture License Rights:
A New Era for the Public-Private Marketplace
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**Open Systems Architecture License Rights: A New Era for the Public-Private Marketplace**

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Disclaimer

• This talk is about the relationship of Intellectual Property, Cost Control and prosperity of the Defense Industrial Base

• Specifically – we look at the:
  - The Creation of Intellectual Property (IP)
  - Venture Capital needed to bring the IP to Market
  - Different treatment of IP in the Commercial and Defense Sectors
  - Commercial and Government outcomes

• This presentation is, in part, a discussion of Intellectual Property Law
  - a large and complex field
  - We are business strategists – not IP Attorneys

• The opinions expressed herein represent those of the speakers and not that of the U.S. Government
“Our Free Market economy is built on Intellectual Property

“The patent system]…secures to the inventor, for a limited time, the exclusive use of his invention; and thereby adds the **fuel of interest to the fire of genius** in the discovery and production of new and useful things.”

- Abraham Lincoln, February 11, 1859

“Our single greatest asset is the innovation and the ingenuity and creativity of the American people… But it’s only a competitive advantage if our companies know that someone else can’t just steal that idea and duplicate it with cheaper inputs and labor.

- Remarks President Barack Obama at the Export-Import Bank’s Annual Conference, March 11, 2010

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Converting IP to Prosperity

- Entrepreneurs need Venture Capital to bring their products to market
  - Internally funded
  - Third party investors

- VC is acquired in the commercial market through the
  - sale of equity
  - provision of a royalty

- In the commercial market – an entrepreneur’s survival depends on control of IP

- Introduction of a third party venture capitalist introduces risk that an entrepreneur’s ownership or control of his or her IP will be diluted or lost
The Dangerous Waters of DoD Venture Capital

• DoD is the **monopsonistic** (single buyer) purchaser of billions of dollars of unique products each year – a massive venture capitalist!
  - The DoD monopsony frequently turns the entrepreneur into a **monopoly**
    • Monopoly control is central issue
      - Cost control and responsiveness
    • Control of IP (via license rights)

• Struggle between the need
  - to fuel the fire vs. control costs and maintain ‘good behavior’

• We will examine this struggle today!
Welcome to the Shark Tank

Shark Tank is a TV show aired on the ABC® network

We’ll look at six model transactions:
1. Standard Commercial Product
2. Commercial Product Variant for Federal Customer
3. Legacy DoD Product
4. “Awkward” Transition [not shown in this presentation]
5. Products acquired within the Small Business Innovative Research (SBIR)
6. Open Systems Architecture Business Model
SHARK TANK ROUND 1: The Commercial Entrepreneur and the Sharks

• Welcome to Shark Tank Round 1
  - Round 1 is the ‘Free Market’
    • Many sellers and many buyers

• THE ALGEBRA SOLVER
  - A commercial software application that solves algebra equations
  - Integrated into a smart phone, laptop or tablet – with an integrated camera
The Algebra Solver

\[ x^2 + 6x + 8 = 0 \]
\[ x^2 + 6x + 8 = 0 \]
The Algebra Solver

\[ x^2 + 6x + 8 = 0 \]
\[ (x + 2)(x + 4) = 0 \]
\[ x = -2 \]
\[ x = -4 \]
Derivative Products

• The entrepreneur plans to build a variety of derivative products from the Algebra Solver
**The Commercial Entrepreneur and the Sharks**

- **Entrepreneur:** “I’m looking for an investment today of $200K for a 25% equity stake in my company.”
- **Shark:** “Do you have a patent?”
- **Entrepreneur:** “Yes – a utility patent.”
- **Shark:** “Good – because that makes it worthy of investment – as I feel comfortable that no one can quickly build a knock-off and squeeze us out of the market.”
- **Shark:** “What were your sales, margins, and profits?”
- **Entrepreneur:** My earnings last quarter were $100K.
- **Shark:** “Why do you value your company at 8 multiple of earnings?”
- **Entrepreneur:** 8 times earnings seems reasonable given the massive market for the “Algebra Solver” and derivative market.
- **Shark:** “Ok – I’m interested!”
Market Operation

- Free Market Transaction
  - Three party commercial
  - Advantaged provider with patent (monopoly)
- VC >>> that of the entrepreneur
- VC doesn’t infringe IP
Shark Tank Round 2: The Commercial Variant for the Federal Customer

• Welcome to Shark Tank Round 2
  - A Federal transaction in the Free Market
  - Many sellers and buyers of core technology

• “Automated Gun Detection System”
  - Built on X-ray line of products described in 17 different patents
  - Entrepreneur is an advantaged provider with IP ownership and control
The Commercial Variant for the Federal Customer

- IP is the basis of the company
  - Can’t accept VC from the government
    - Government Purpose Rights (GPR) License on subsystem dilutes control of IP
  - Seeks VC from the Sharks

- Entrepreneur: “I seek $750K to field the augmented unit. I offer a royalty per unit sold… DHS has issued a NIST standard for a system with these capabilities and issued an RFI indicating their plan to procure units.

- Sharks: Deal!
Market Operation

• Free Market Transaction
  - Three party commercial
  - Advantaged provider with patent (monopoly)
    • VC can’t infringe IP

• Gov’t: Market and Requirement

• The Gov’t lacks detailed control of product design/performance and delivery schedule
Shark Tank Round 3: Legacy DoD

- Welcome to Shark Tank Round 3
  - Monopsony/Monopoly

- Commercial Sharks leave the set; Navy Sharks enter
  - Acquisition Program Manager (APM)
    - VC has intimate product control

- Navy sharks want to provide very large VC
  - Massive unique monolithic system

- Sharks “please bring me a product that meets my requirements”
  - One or two entrepreneurs capable of executing
Shark Tank Round 3: Legacy DoD

• Sharks –
  - interview entrepreneurs
  - massive contract awarded - with many years of orders – and profit
  - a very broad license to the product (defined in DFARS 252.227)
  - Diminishes entrepreneur’s control IP – protect public investment
  - “We are the monopsony – and you will be our monopoly”

• Minimize Fuel the Fire – in favor of Monopoly Control
Shark Tank Round 3: Legacy DoD

• Entrepreneur
  - “Here’s a technical and management approach.”
  - “Here’s a winning NRE and Production Price.”
  - “I will provide the requested IP license rights.”

• Sharks
  - “Deal!!”
Not so fast…

• Entrepreneur loves orders and profit
  - But wants a **sustainable business!!**

• Entrepreneur interweaves DoD-VC funded components with
  - Independent Research and Development (IRAD)
  - Small Business Innovation Research (SBIR) products
  - Internal Trade Secrets
  - Customized commercial components

• Delivers a **Software Tapestry**
  - Disclosed only to the extent required in the contract (not too much…)

• Entrepreneur enhances IP position – attempt to limit competition
We Will Compete This…

• The Sharks run a follow-on competition – for Massive Monolithic System
  - Tapestry of IP disclosed to another entrepreneur
  - Second entrepreneur not burdened with Expensive IP Creators – WINS!

• The monopsony replaces the monopoly – with another
  - People that created the original IP lost or discouraged

• New entrepreneur begins to perform
  - IP tapestry requires many ‘do-overs’
  - Additional VC
    • Need to invest in new IP Creators
    • Need to invest in new facilities
Market Operation

• Two Party Transaction
  - Monopsony/Monopoly
• Entrepreneur builds Tapestry
• Gov’t runs competition – undeterred
• Second source defeats original manufacturer
  - License agreement displaces entrepreneur
• Gov’t invests VC to stand up new source
• **This is the world most of us live in!**
Shark Tank Round 5: The SBIR Transaction

• Welcome to Shark Tank Round 5
  - DoD buying small components – as if in an Open System Architecture
    • Product might be one of a set of severable modules
  - Monopsony/Free-Market
    • One buyer – many sellers
    • Different behavior by monopsony

• Navy Team remains on the set – but splits into two groups
  - Acquisition Program Manager (APM)
    • Intimate control of product development
  - SBIR Program Manager – these are the Sharks now!
    • VC small business partner
Shark Tank Round 5: The SBIR Transaction

• Sharks:
  - Small module within an OSA
  - Small business survives on IP
  - Not concerned that you will become a monopoly
    • Can replace your component with small amount of VC
  - Need to **fuel the fire of genius**
    • Offer to you SBIR Data Rights for your product
      - Use your product within the Government,
      - Won’t share it with your competitors
      - 5 Years from completion of effort
    - Please bring me an innovative solution

• Entrepreneur:
  - “Here is a innovative solution – within your budget and time constraint.
  - I look forward to working with you – and growing my small business!”
Does SBIR IP Exclusivity Never End?

- Patents have expiration dates – from filing date
- SBIR data rights last for 5 years after the program ends
  - Loose definition causes angst
- Open Systems Architecture License Rights mirrors patent structure
  - From the ‘filing’ – contract award
Small Business Innovative Research (SBIR) Model

- Three Party Transaction
  - VC - SBIR PM
  - Customer – Navy Program Office

- Pieces small enough that their replacement VC is small; cost of IP transition exceeds alternatives from elsewhere
SHARK TANK Round 6
The Open Systems Architecture Business Model

• Welcome to the 6th and final round of Shark Tank
• Navy Team remains on the set
  - Acquisition Program Manager (APM) – The Shark
    • Acts as VC - SBIR PM, and
    • Customer – Navy Program Office
  - VC is acquiring a set of modules
  - Many participants means less chance of monopoly
    • Behave like SBIR PM
SHARK TANK Round 6
The Open Systems Architecture Business Model

Sharks:
- Executing OSA Business Model
- Infrastructure acquired separately from modules
- Technology Blueprint provides for integrate/ federated set of modules
  • more than three, but less than a dozen
  • Small modules can be replaced with small VC
- Allowing small monopolies – as the risk of this is low!

• Fuel the Fire dominates Monopoly-Control
SHARK TANK Round 6
The Open Systems Architecture Business Model

• OSA analogous to Apple® and Android® open environment, or the Ford Sync.
  - system architectures distinct from small applications acquired

• We have established this type of system architecture across each of its mission areas, with initial success in
  - USW Combat Systems, CANES, FACE, Surface Combat Systems, Unmanned Aircraft Systems Ground Control Segment (UCS), and others.
Toward a New Future

• Using OSA, DoD can allow the entrepreneur to have limited IP exclusivity
  - Mirrors SBIR Data Rights

• “Open Systems Architecture License Right” (OSALR).
  - Government accepts limited, rather than unlimited or GPR
  - Entrepreneur accepts responsibility for contributing to an open architecture.

• In this way a new win-win arrangement is established in the public-private marketplace
Open System Architecture License Rights

- The Government may not release or disclose OSALR data to any person, other than its support services contractors, except as expressly permitted by the Vendor.
- The Government may use OSALR data for government purposes only.
- The Government cannot disclose the data outside the Government for a specified period of time subsequent to program completion.
  - 10 years from initial contract award.
- The OSALR firm retains: “rights to data generated by the concern in the performance of an OSALR award.”
- The Government will not use anything other than the external characteristics of the module (information associated with segregating it from the rest of the system or reintegrating a replacement) with OSALR rights to produce future technical procurement specifications.
- The Government receives a nonexclusive, royalty free license in technical data, but may not disclose them during the protection period, except for very limited purposes.
Open Architecture Acquisition - Results

• An ecosystem where the Government acquires a system that is comprised of severable modules
  - risk prudently replaced with independently derived solutions.

• A broad mix of IP licenses is supported and innovation from a variety of sources is rapidly and affordably integrated and delivered
Open Architecture Acquisition Approach

• Free Market OSA Variant
  - Three Party Transaction

• Technology Blueprint provides for small low-VC replaceable modules

• Fuel the Fire >>> Monopoly Control

• OSALR Data Rights mirror SBIR Data Rights
Conclusion

• DoD is a monopsony (single buyer)
  - procures monolithic systems
  - produces large monopolies
    • License Rights used to control monopoly

• OSA Business Model replaces monolith procurements
  - Pursue federated modular approach
  - Open Systems Architecture License Right (OSALR)
    • mirrors SBIR license arrangement
    • Expires 10 years from Award

• “Fuel the fire of genius” to build next generation DoD capability