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

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OSA



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

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:

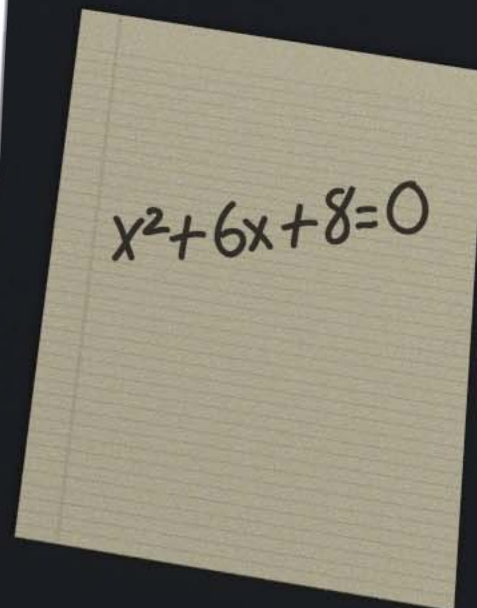
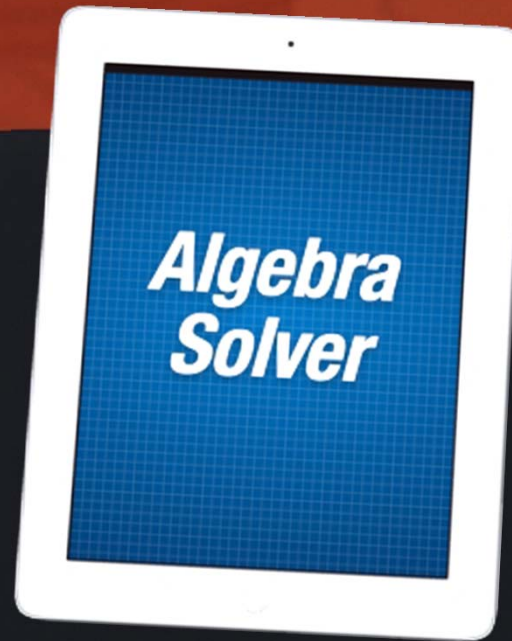
1. Standard Commercial Product
2. Commercial Product Variant for Federal Customer
3. Legacy DoD Product
4. "Awkward" Transition [not shown in this presentation]
5. Products acquired within the Small Business Innovative Research (SBIR)
6. Open Systems Architecture Business Model

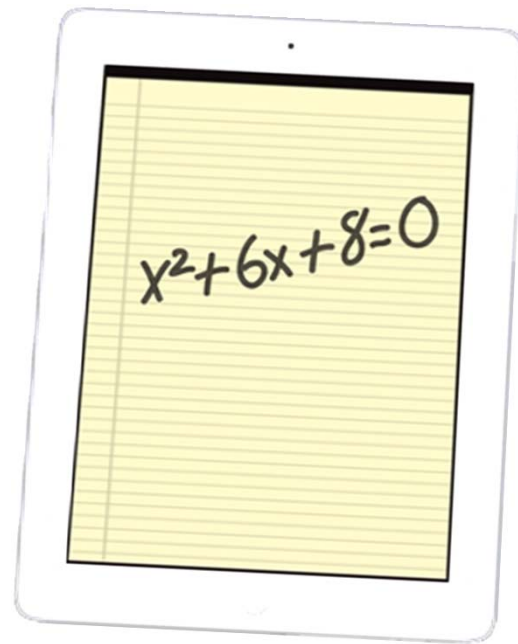
SHARK TANK ROUND 1: The Commercial Entrepreneur and the Sharks

- 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



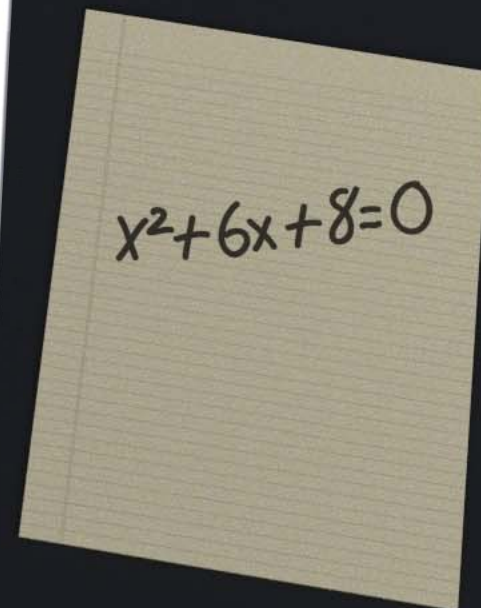
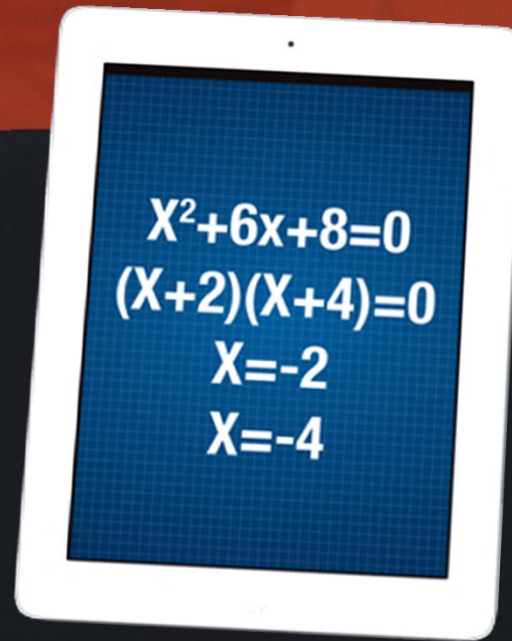
The Algebra Solver





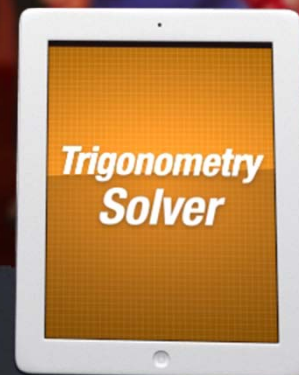
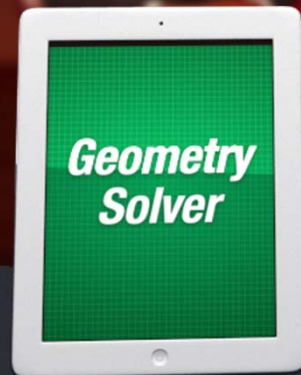
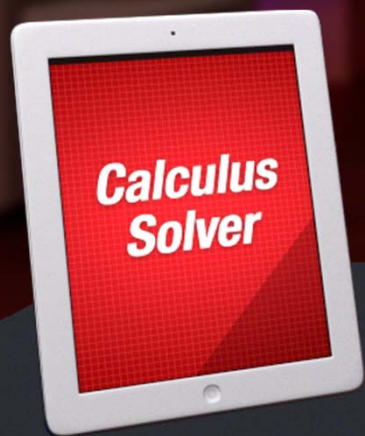
$$x^2 + 6x + 8 = 0$$

The Algebra Solver



Derivative Products

- The entrepreneur plans to build a variety of derivative products from the Algebra Solver



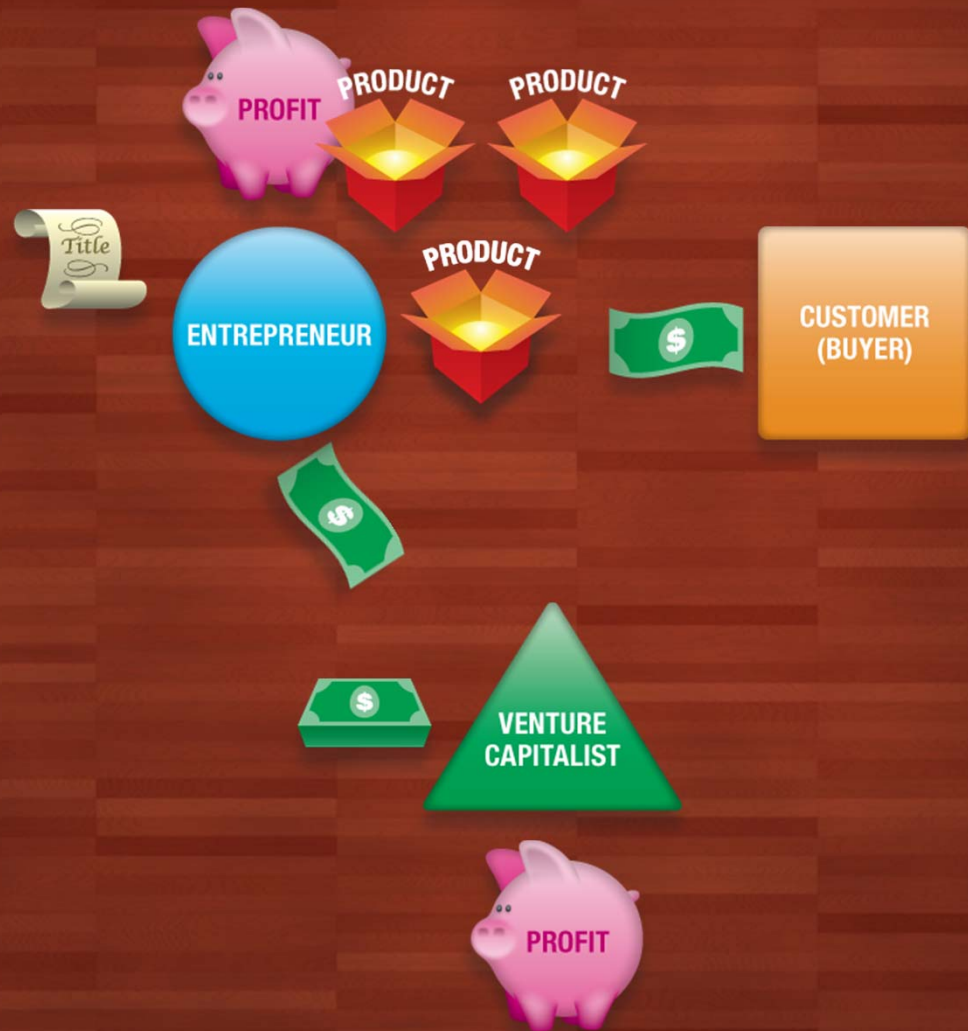
The Commercial Entrepreneur and the Sharks

- 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...”
- 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” in the 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**



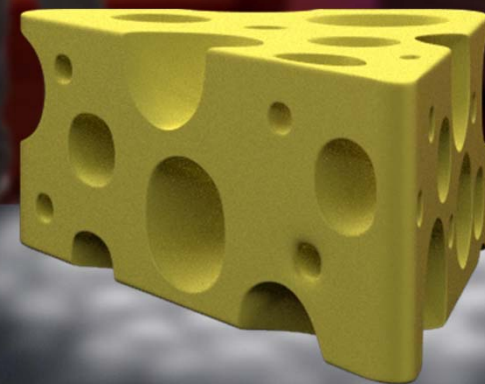
Shark Tank Round 3: Legacy DoD

- 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

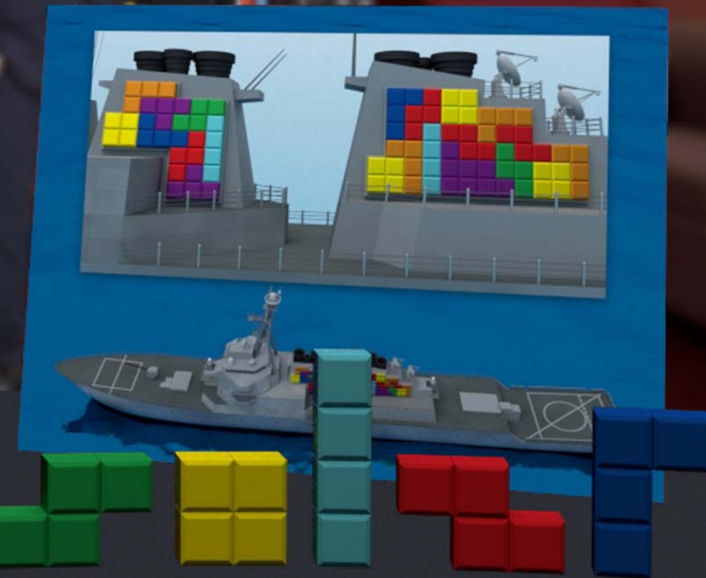
- Three Party Transaction
 - VC - SBIR PM
 - Customer – Navy Program Office
- Pieces small enough that their replacement VC is small; cost of IP transition exceeds alternatives from elsewhere



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

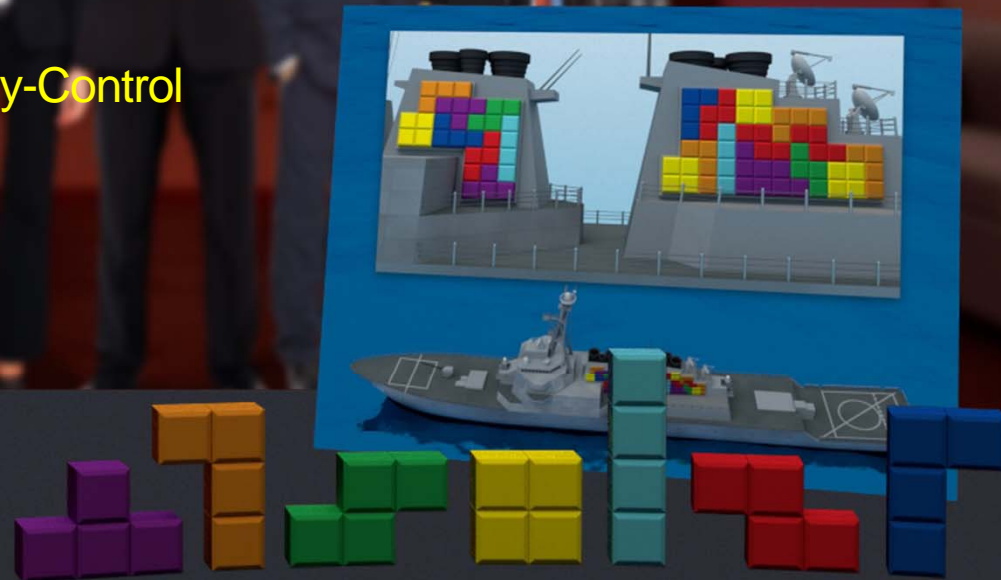


SHARK TANK Round 6

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

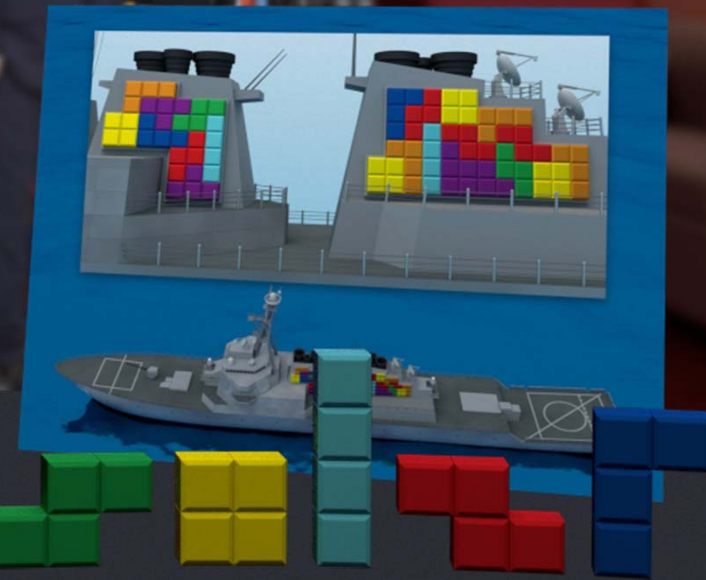
The Open Systems Architecture Business Model

- 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.



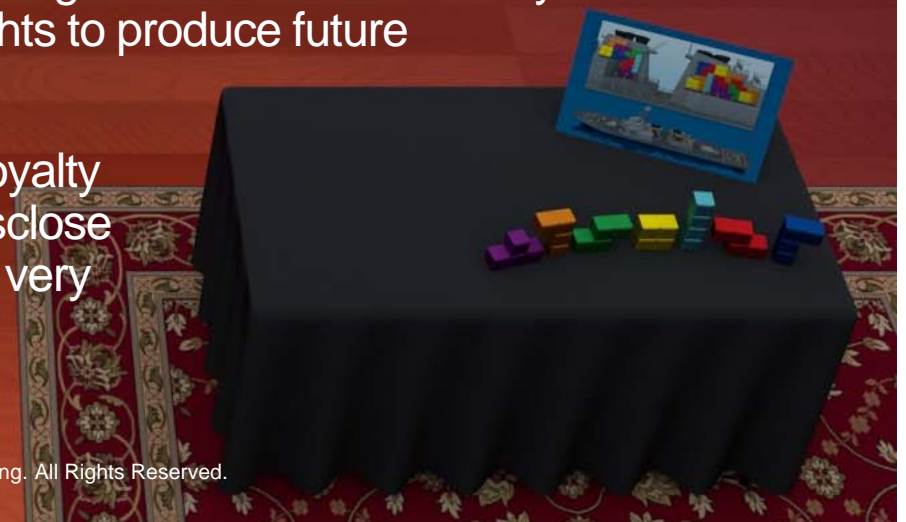
Toward a New Future

- 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



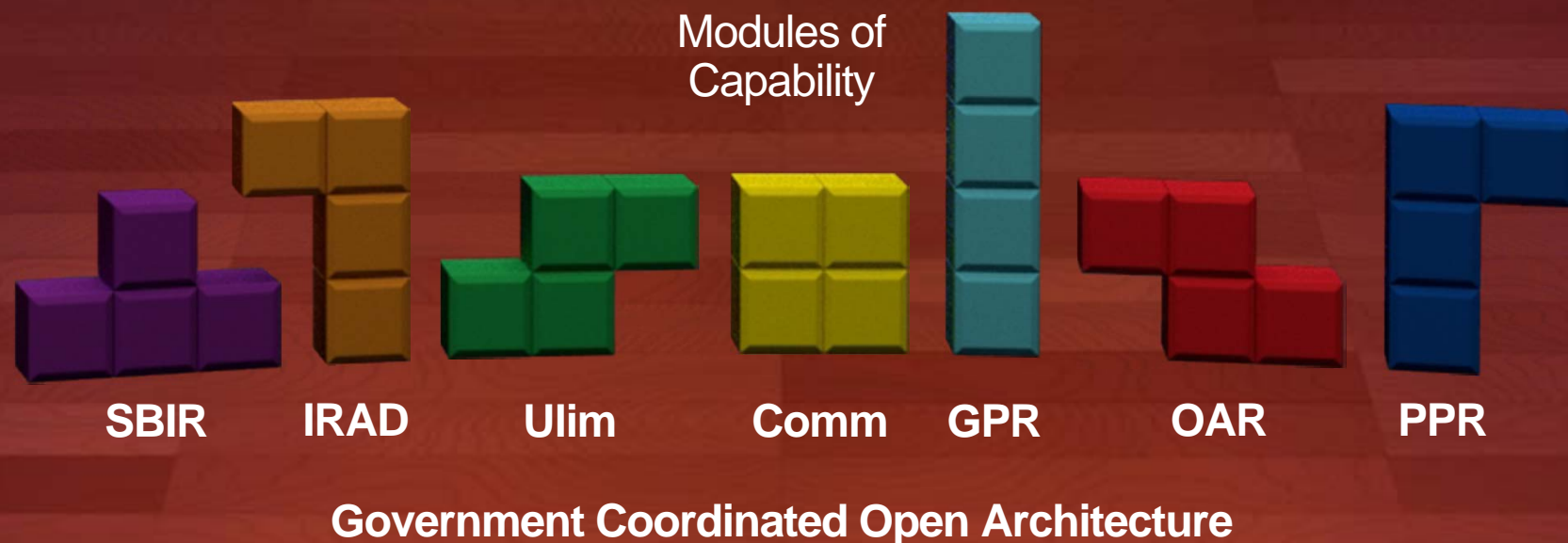
Open System Architecture License Rights

- 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



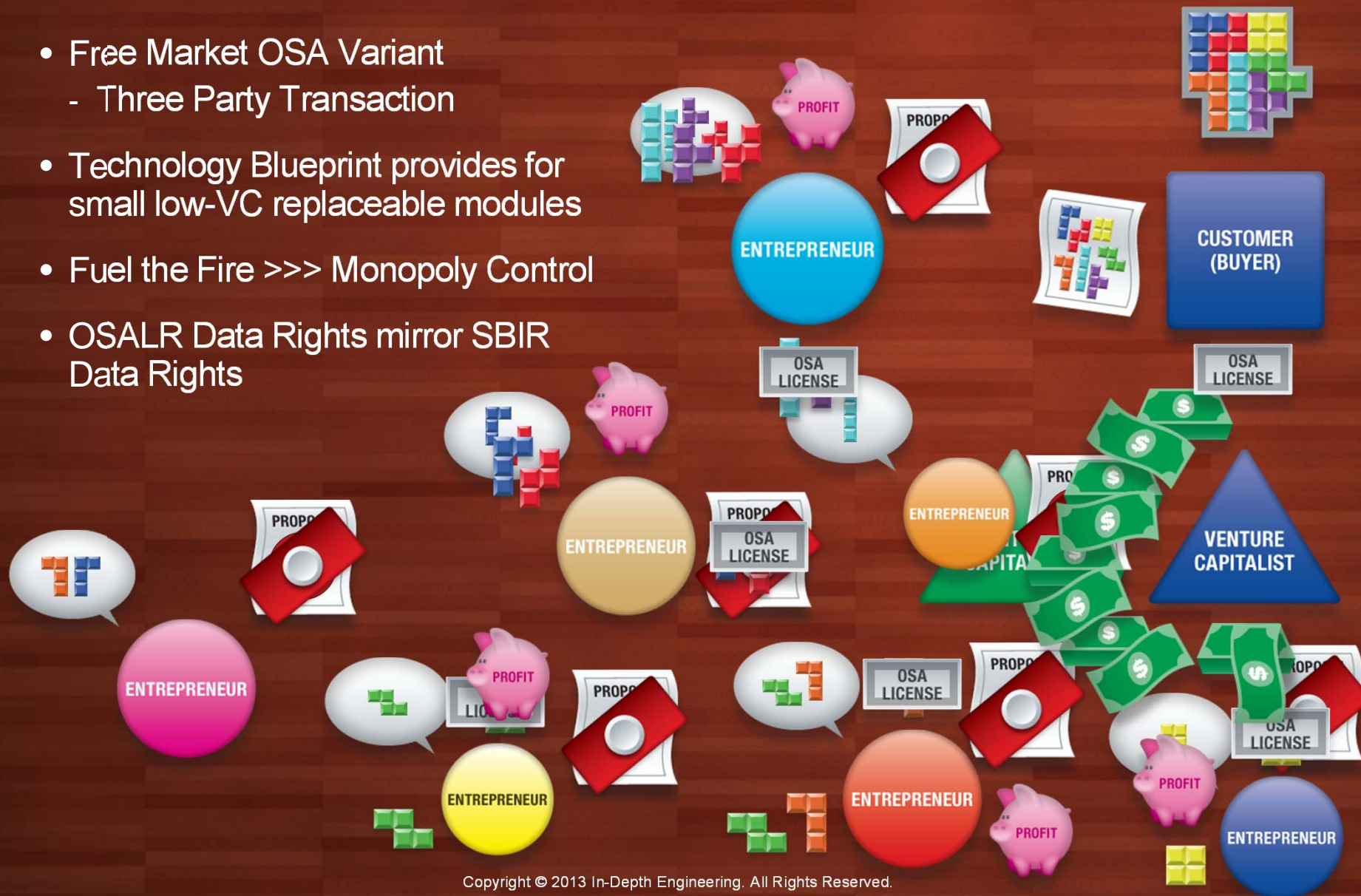
Open Architecture Acquisition - Results

- 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