FLC
FEDERAL LABORATORY CONSORTIUM
FOR TECHNOLOGY TRANSFER

FLC Webinar Series

Open Innovation and Technology Scouting

Tools to Implement Problem Solving in Government Entities

May 22, 2013

The Basics

- Presentation length – 90 minutes (approximately)
- Additional Q&A Period – 30 minutes (approximately)
  - Questions will be answered following the panelist presentations.
  - Enter questions in chat box in your webinar menu (right side of screen)
- Please complete survey at conclusion of this webinar session
- Webinar will be recorded – will be available within a week
- Technical questions? Issues? Type them in chat box for immediate assistance.

Today's Moderator – Dr. Eugene Buff

- Founder and President, Primary Care Innovation Consulting
- Registered Technology Transfer Professional and Certified Licensing Professional
- Co-founder and Principal of UsTech Discovery LLC
- Education
  - M.S. in Biochemistry and M.D., Russian State Medical University
  - Ph.D. in Genetics

Panelist – Molly O'Donovan Dix

- Innovation Advisor, RTI International
- Co-created training in support of NIST Manufacturing Extension Partnership Program.
- Worked on technology management projects for NASA.
- Received numerous honors during 20+ years in Open Innovation
- Education
  - Master's Degree, Intellectual Property, Commerce and Technology, University of New Hampshire School of Law
  - Bachelor of Science, Mechanical Engineering, University of Rochester

Panelist – Laura Schoppe

- President, Fuentek, LLC
- Lead negotiator at top universities, government agencies, and Fortune 500 companies worldwide.
- Named one of the Top 25 businesswomen in the Research Triangle Park Region of North Carolina.
- Education
  - MBA, University of North Carolina-Chapel Hill
  - MSE, Princeton University
  - BSE, Carnegie-Mellon University

Panelist – Phil Stern

- Chief Executive Officer, yet2.com
- Partner, yet2Ventures
- Served clients for Bain & Company, McKinsey & Company.
- Previously served as Division Vice President, Polaroid Corporation.
- Education
  - A.B. cum laude, Mathematics, Princeton University
  - MBA, Harvard Business School (Baker Scholar)

FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER

FLC

advancing federal research and technology

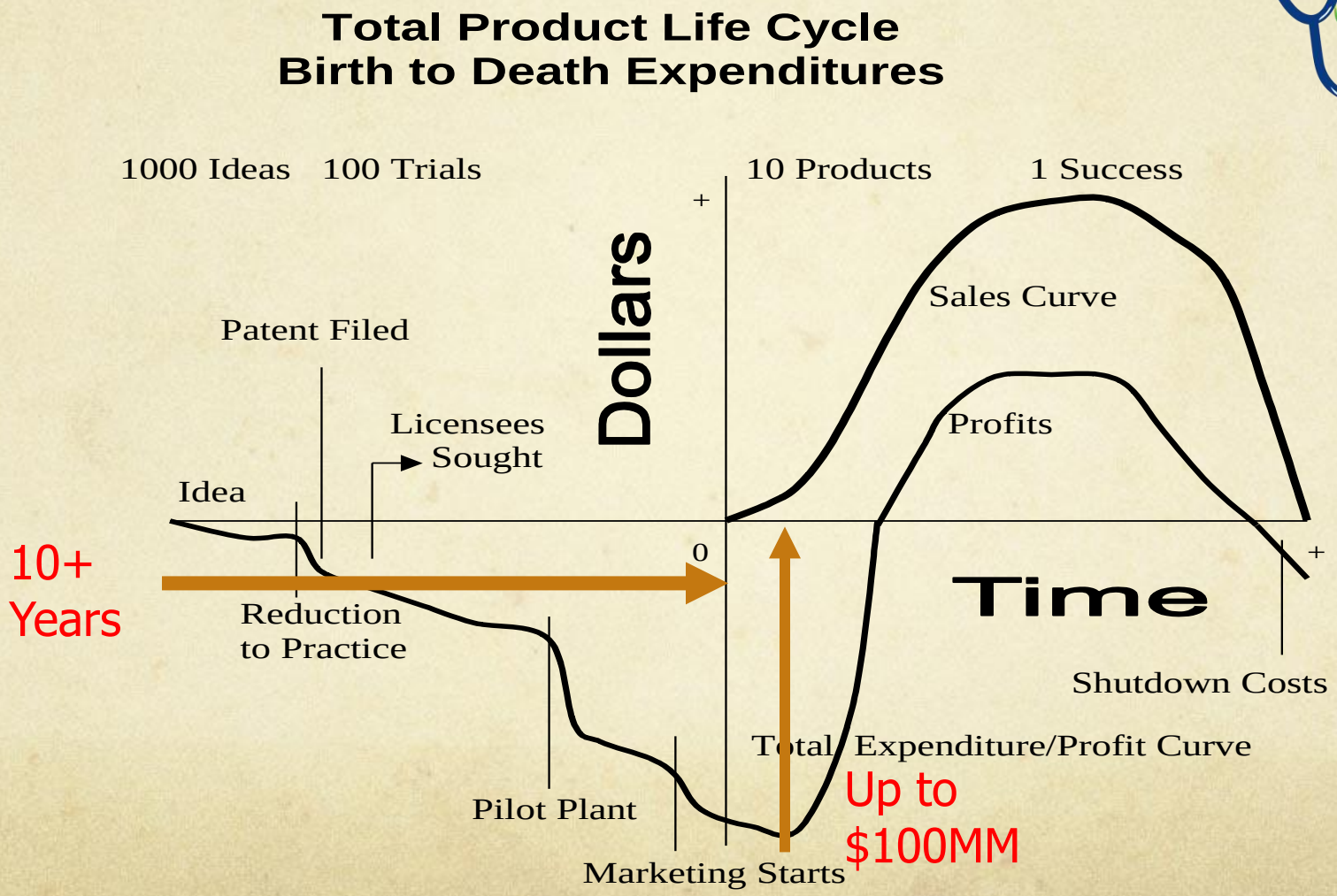
Open Innovation and Technology Scouting:

Tools to Implement Problem Solving in Government Entities

Primary Care INNOVATION CONSULTING

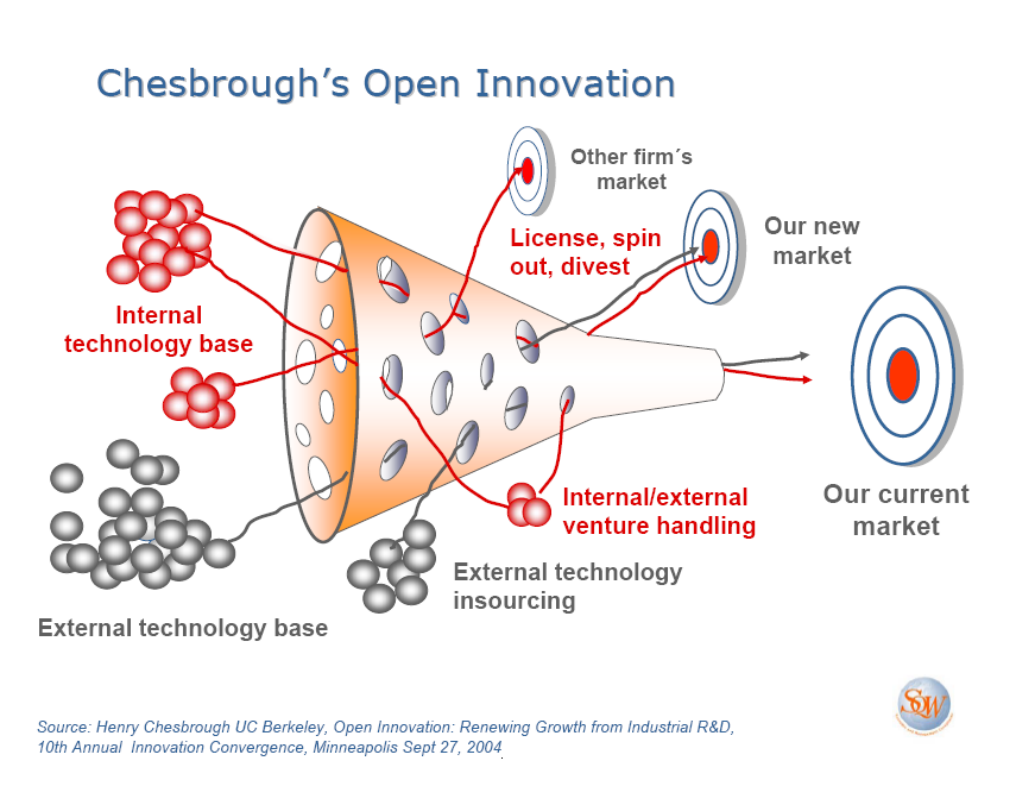
Personalized Innovation Management, Sustainable Growth & Value Creation

Fighting the Product Development Paradigm



Open Innovation – a new reality

- **Good ideas** are widely distributed today. *No one has a monopoly on useful knowledge anymore.*
- Financial managers **must play poker**, as well as chess, to capture the value in false negatives.
- We must **manage IP** in order to manage research:
  - need to access external IP to fuel our business model
  - need to profit from our own IP in others' business model
- **Not all of the smart people** in the world work for us.



Stating The Problem

- “In theory, there is no difference between theory and practice. In practice there is.” Yogi Berra.
- "Organizations, like teenagers, are blind to their choices…” Chip & Dan Heath. *Decisive*.
- “The probability does not work in real world; it is pay off that matters.” Nassim Taleb. *Antifragility*.

Why Technology Scouting?

- When the solution may already exist - there's no sense in reinventing the wheel!
- When having the "best" performance is critical
- (When you don't want to be surprised by a competitive product introduction)

Technology Scouting vs. Solving and Crowdsourcing

Scouting	Solving
Tangible technologies, testable, reviewable	Concepts and ideas to consider
Established businesses, research institutions	Individual inventors and teams
Existing technologies to modify and implement	“Sparks” and ideas to start a project
> TRL3	TRL1-2
Purchase a product, fund, collaborate	Bounty or award

Eugene Buff, MD, PhD

Certified Licensing Professional (CLP)
Registered Technology Transfer Practitioner (RTTP)

Primary Care Innovation Consulting
UsTech Discovery LLC

E-mail: eugene.buff@prcareinnoconsult.com
Ph.: +1 617-331-1982
Skype: eugenebuff
www.linkedin.com/in/eugenebuff/

Panelists

Molly Dix
Innovation Advisor
RTI International

Laura Schoppe
President, Fuentek, LLC

Phil Stern
CEO, yet2.com

Technology Scouting

finding existing solutions to solve tough problems

Molly Dix
dix@rti.org
919-541-5866

We are

a world-renowned research institute.
a mission-driven organization.
addressing global challenges.
using our expertise for good.
a trusted partner.

open innovation takes partners working in varied directions

federal agencies have a history of open innovation

technology scouting can help designs get “off the drawing board”

federal laboratories provide solutions

SBIR/STTR
SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER

Challenge.gov
Government Challenges, Your Solutions

technology scouting is another process for finding solutions

federal laboratories seek solutions

RTI Case Study: Fortune 100 Company

Battery Alternatives

Driver

Understand state-of-the-art power sources that could replace AA batteries

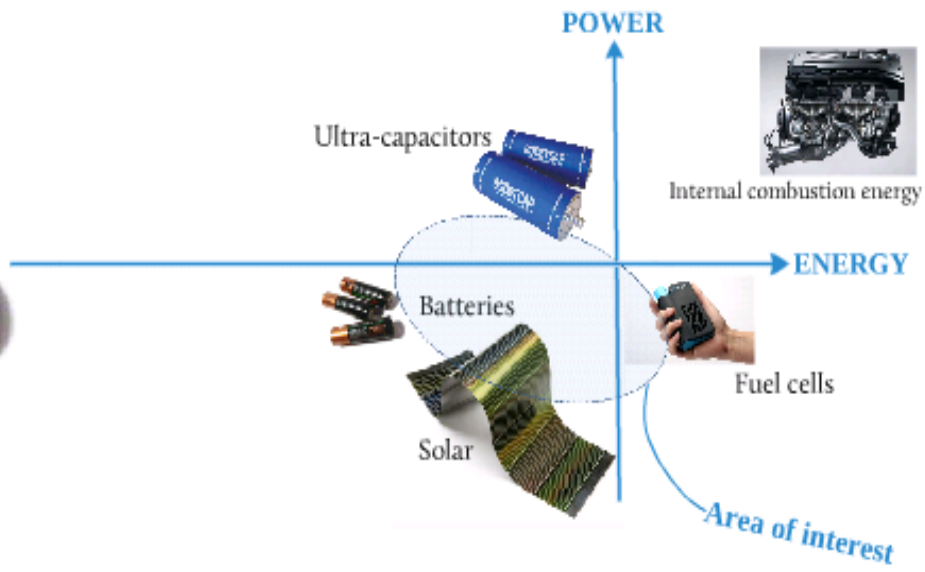
Goals

(general targets)

- Longevity (better life than AAs)
- Power (>4 AAs or a C cell)
- Green (lower environmental impact)
- Cost ($1-3 per source)

Landscape

(best technologies)



landscaping as a pre-cursor to targeted scouting

RTI Case Study: Environmental Protection Agency (EPA)

identifying state-of-the-art technologies informs decisions

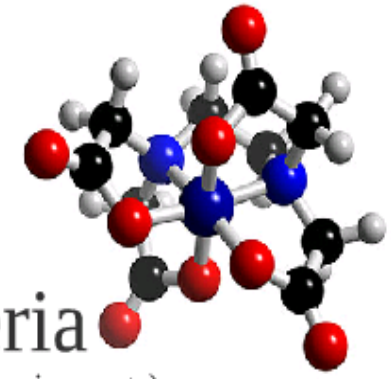
helping agencies understand emerging solutions

RTI Case Study: Fortune 500 Company

Replacement Molecules

Need

Replacement molecules for EDTA

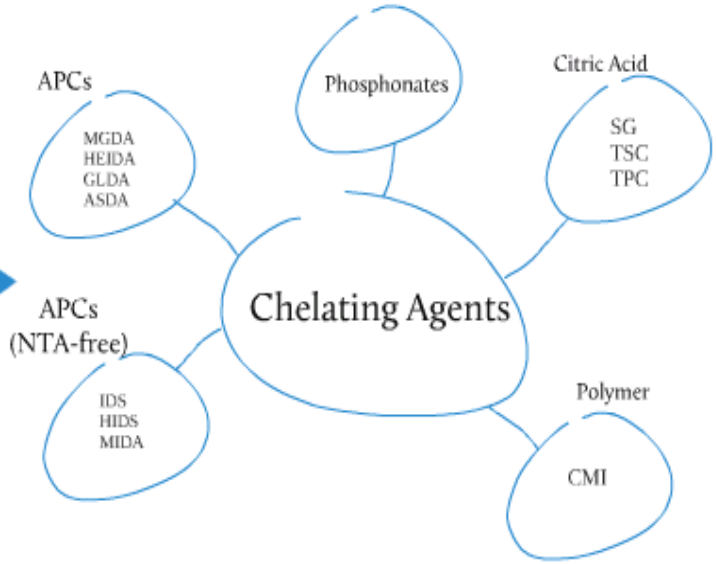


Criteria

(specific requirements)

- Chelation = to EDTA (286 mg CaCO2/g)
- Cost < EDTA ($0.70)
- Biodegradable (with data)
- TSCA and REACH compliant

Targeted Solutions

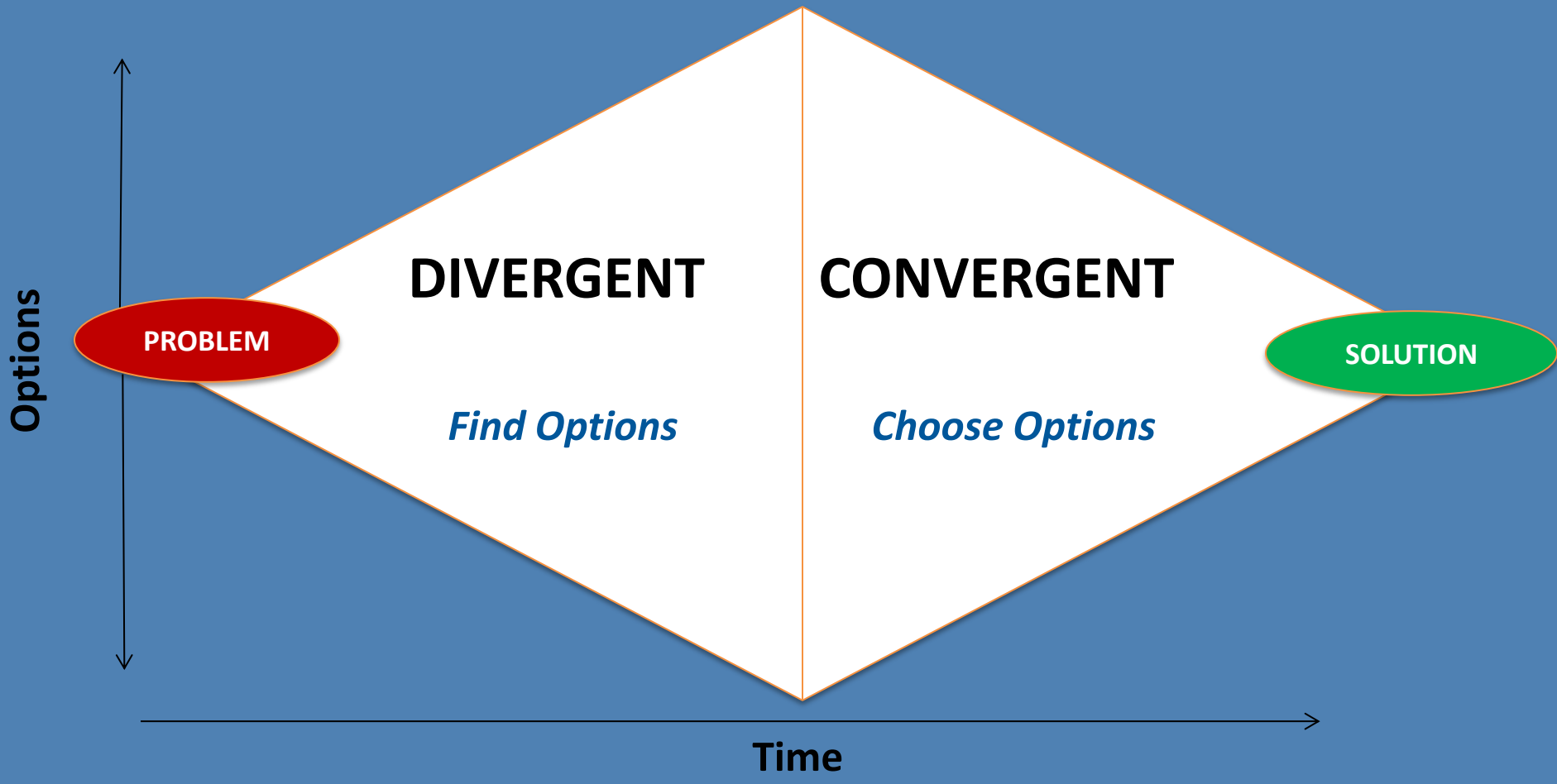


targeted scouting to find researchers and suppliers

RTI Case Study: NASA Kennedy Space Center

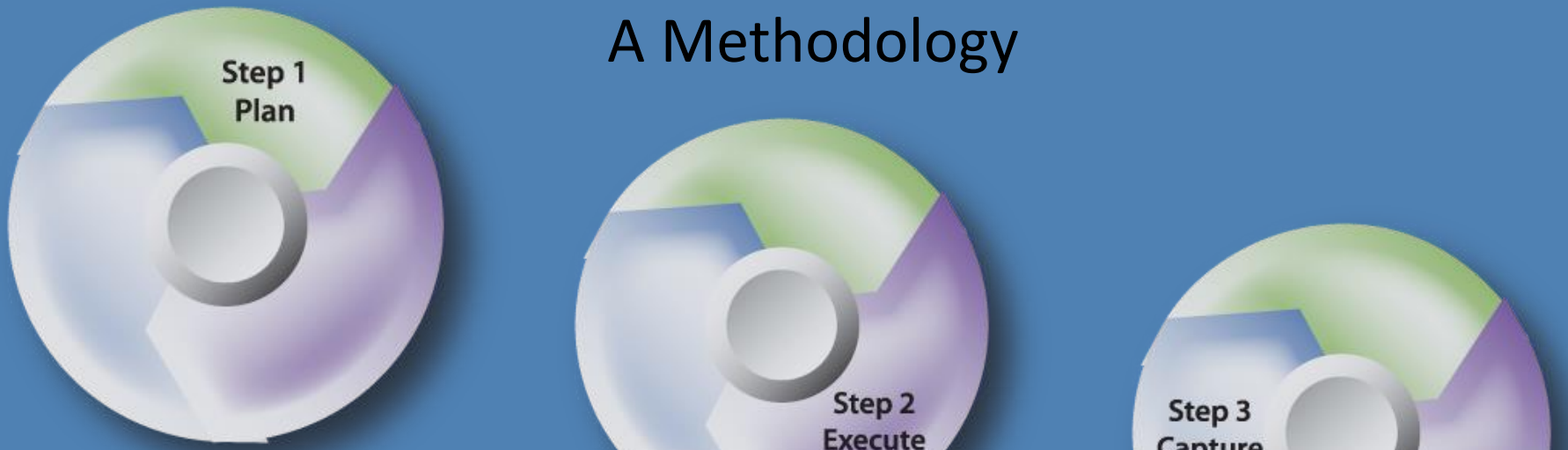
connecting researchers to external technologies speeds problem solving

helping identify existing products



be deliberate in thinking differently

A Methodology



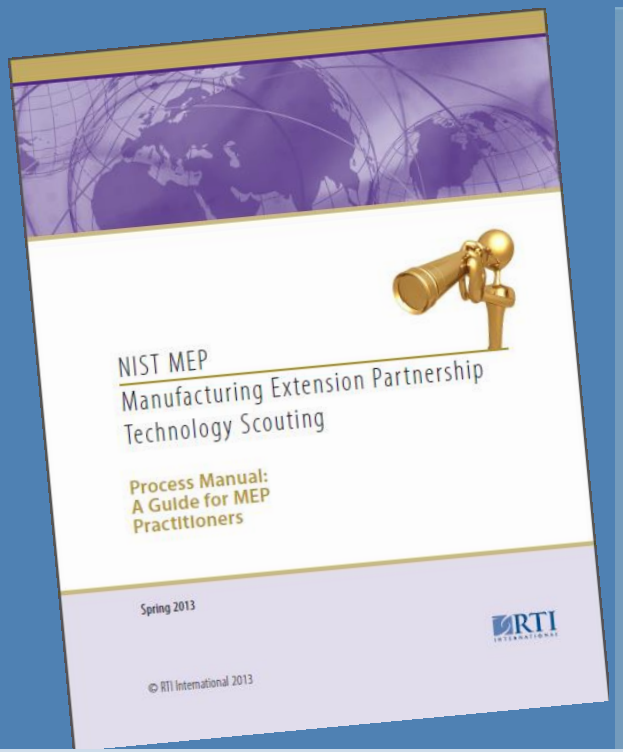
Strategize
How and where to search

Research
Portals, networks, and experts

Consider
Capture and analyze

good scouting is deliberate, disciplined, organized

RTI Case Study: NIST Training and Scouting Support



sharing best practices through training and collaborative work

helping to train scouts and support projects

- Be clear about what kind of scouting you need.
- Have a deliberate process.
- Clearly define the problem and need.
- To get "outside the box," consider fundamentals.
- Be disciplined and organized in your search.
- Leverage new perspectives: internal and external.

scouting is powerful when focused

THANKS!

Molly Dix
dix@rti.org
919-541-5866

Taking your innovations

Symbiotic Innovation

Opportunities for government agencies

http://www.fuentek.com| @fuentek | 919.249.0327
Laura A Schoppe | laschoppe@fuentek.com | laschoppe

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Fuentek's Innovation Services Framework

Fuentek matches the appropriate activities to meet the specific needs of each engagement

Strategic consulting
- Strategic planning
- Growth and new initiatives
- Operational and infrastructure support
- Outsourcing activities
- Economic development and startups

Innovation management
- IP portfolio vetting
- Market-based technology analysis
- Marketing strategy
- Identifying licensees/ partners

Deal-making
- Cultivating licensees/partners
- Negotiations and contracts
- Valuation
- Investor packages

Training workshops and webinars
- Staff and interns
- Innovators and researchers
- Entrepreneurs

Market research and analysis
- Competitive intelligence
- Market opportunity assessment
- Evaluating industry trends

Branding and marketing
- Communications strategy development
- Reputation building
- Engaging with stakeholders
- Designing and developing materials for print, online, and social media

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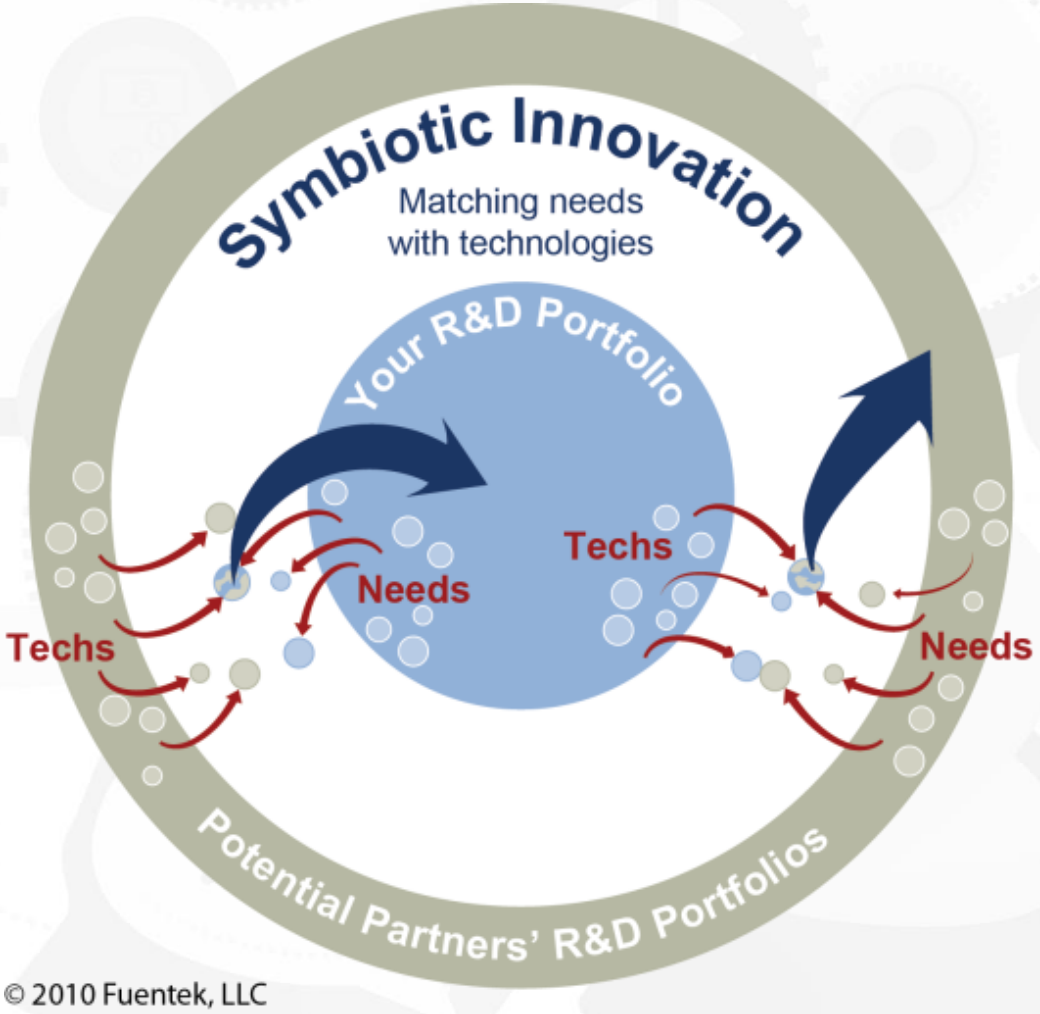
Decoding the Jargon

Open Innovation

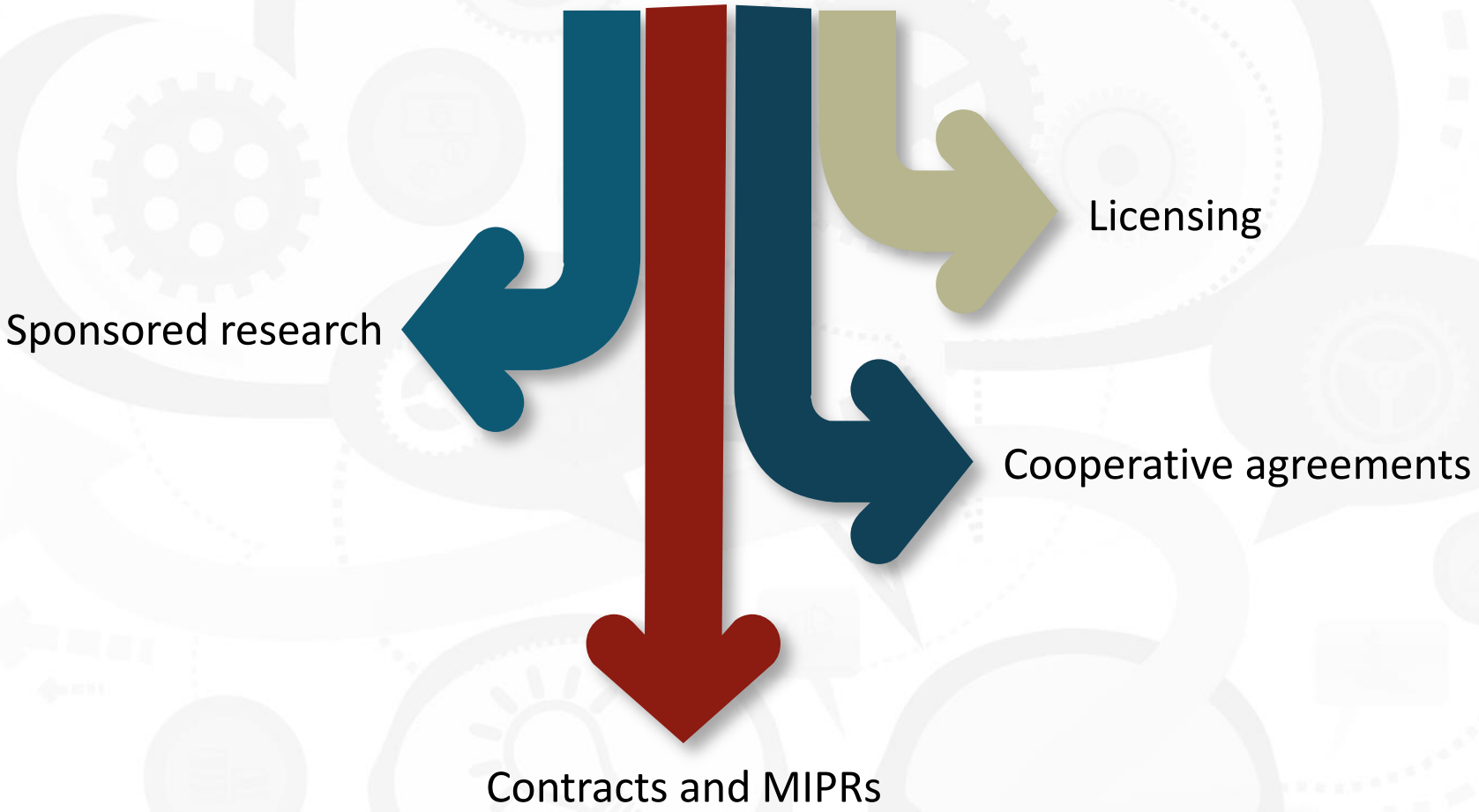
Tech Transfer

The process of moving technologies, ideas, and capabilities from one organization to another…it's ubiquitous

Maximizing Results with Symbiotic Innovation



Technology Transfer Paths



Potential Partner: Large/Medium-sized Companies

Behavior

Slow, cautious

Looking to grow and sell more products

Potential Partner: Small Companies/Startups

Behavior

Fast, risk takers

Looking to survive and become target for merger

The Role of Research Organizations

Behavior

Methodical, reactive

Looking for sponsored research and licenses

Potential Partner: Government Agencies

Behavior

Slow, erratic (political)

Looking to be good stewards of taxpayer dollars

A View of the Technology Transfer Landscape

Large companies

Looking to grow and sell more product

Small companies

Looking to survive and become target for merger

Research Organizations

Looking for sponsored research and licenses

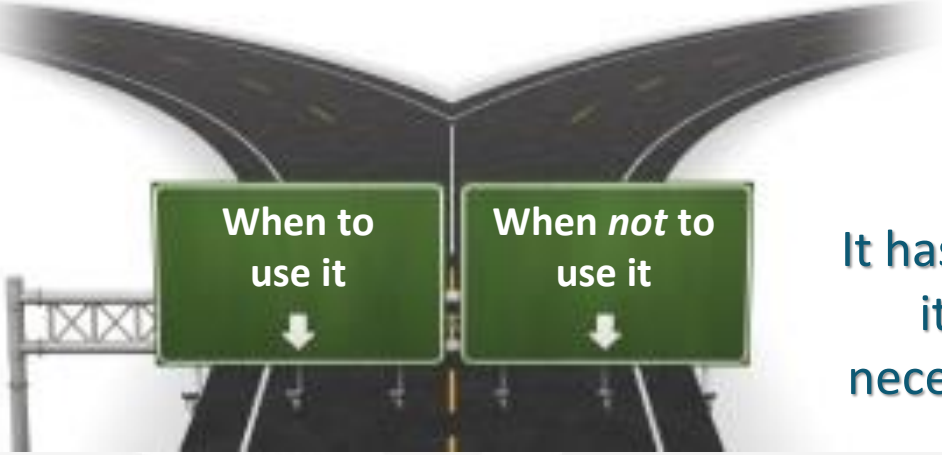
Government

Looking to be good stewards of taxpayer dollars

When to Use Open Innovation… and When ***Not*** to

- External challenges correspond
- Others are at cutting edge
- Cross-disciplinary challenges
- Early in R&D
- New or rapidly-changing fields of business
- Complement to your areas of strength
- Resources are limited

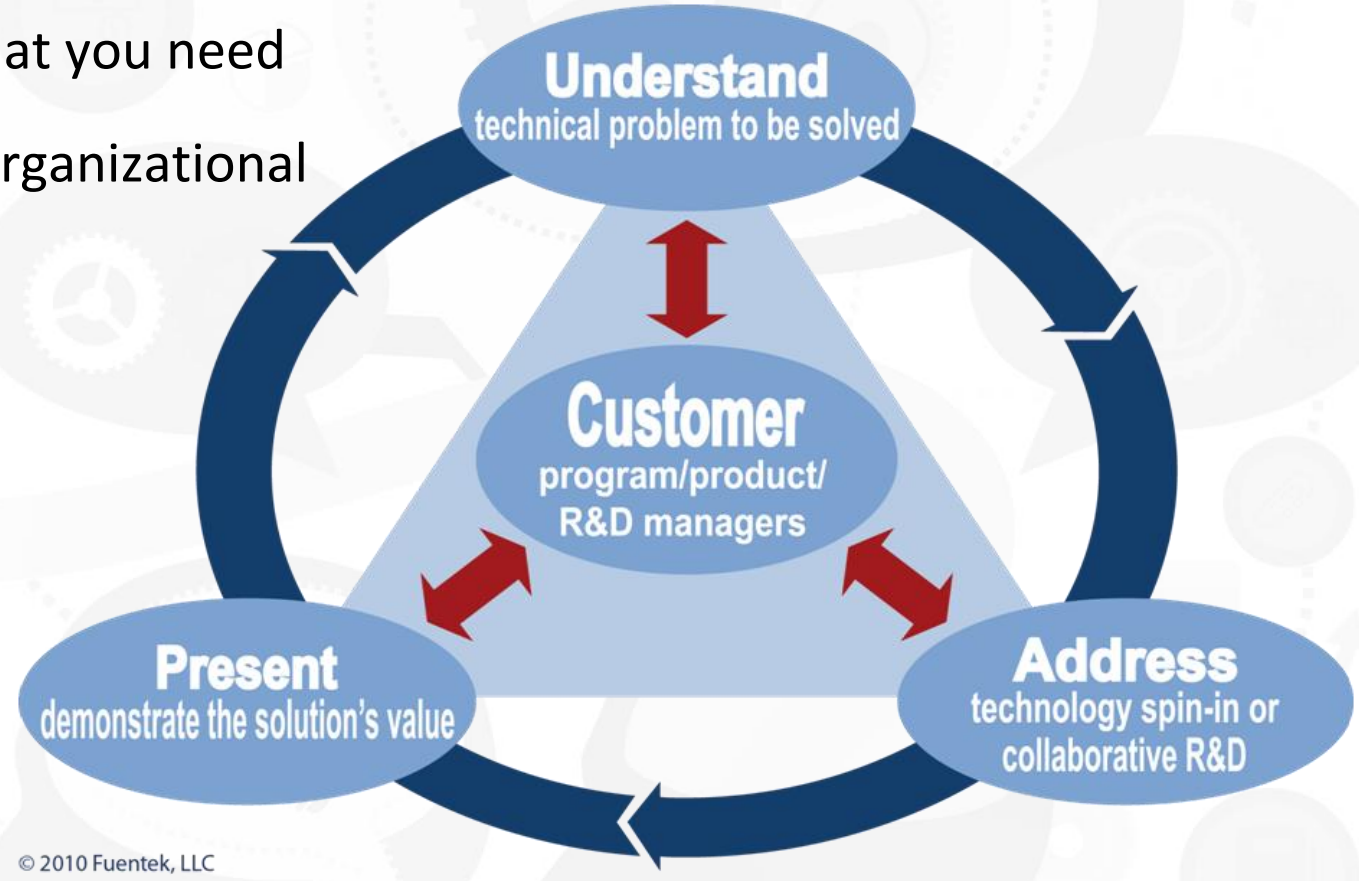
- Requirements are unique
- Internally evolutionary
- Unusually short schedule
- Highly competitive market environment
- Organizational culture precludes



It has advantages, but it is not always necessary or possible

Open Innovation Starts Internally

- Know what you have
- Understand what you need
- Build internal organizational support



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Finding Industry Opportunities

Securing Partnerships

- Perform market research
  - Trends
  - Market structure
  - Key players
- Develop relationships and present your capabilities and needs
- Listen to potential partners to learn about their needs and capabilities
- Identify potential solutions (near and long term)
- Analyze and prioritize
- Ensure mutual value
- Secure IP rights in the agreement

See the "Symbiotic Innovation" links at: http://www.fuentek.com/openinnovation

Case Study: Seeking Robotics Expertise

Photo by Chris Gunn, NASA

Case Study: Solar-Powered Refrigeration

Just great ideas

Thank You

http://www.fuentek.com| @fuentek | 919.249.0327
Laura A Schoppe | laschoppe@fuentek.com | laschoppe

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Open Innovation and

Technology Scouting with yet2.com

yet2.com – Global leader in intellectual property (IP) licensing, acquisition and consulting

- Formed in ’99. Advisory Board includes: AGFA, Avery Dennison, Bayer, DSM, DuPont, Philips, P&G, Takeda
- Full range of services to assist clients in out-licensing, technology acquisition, and patent transactions
- Offices in Boston, Wilmington, Liverpool, Tokyo
- *yet2.com*® internet presence is unique resource to facilitate deals –
  - 120,000+ registered users
  - Network of 16,000+ smaller companies ($10-500m)
- Complete ~20 deals with clients annually

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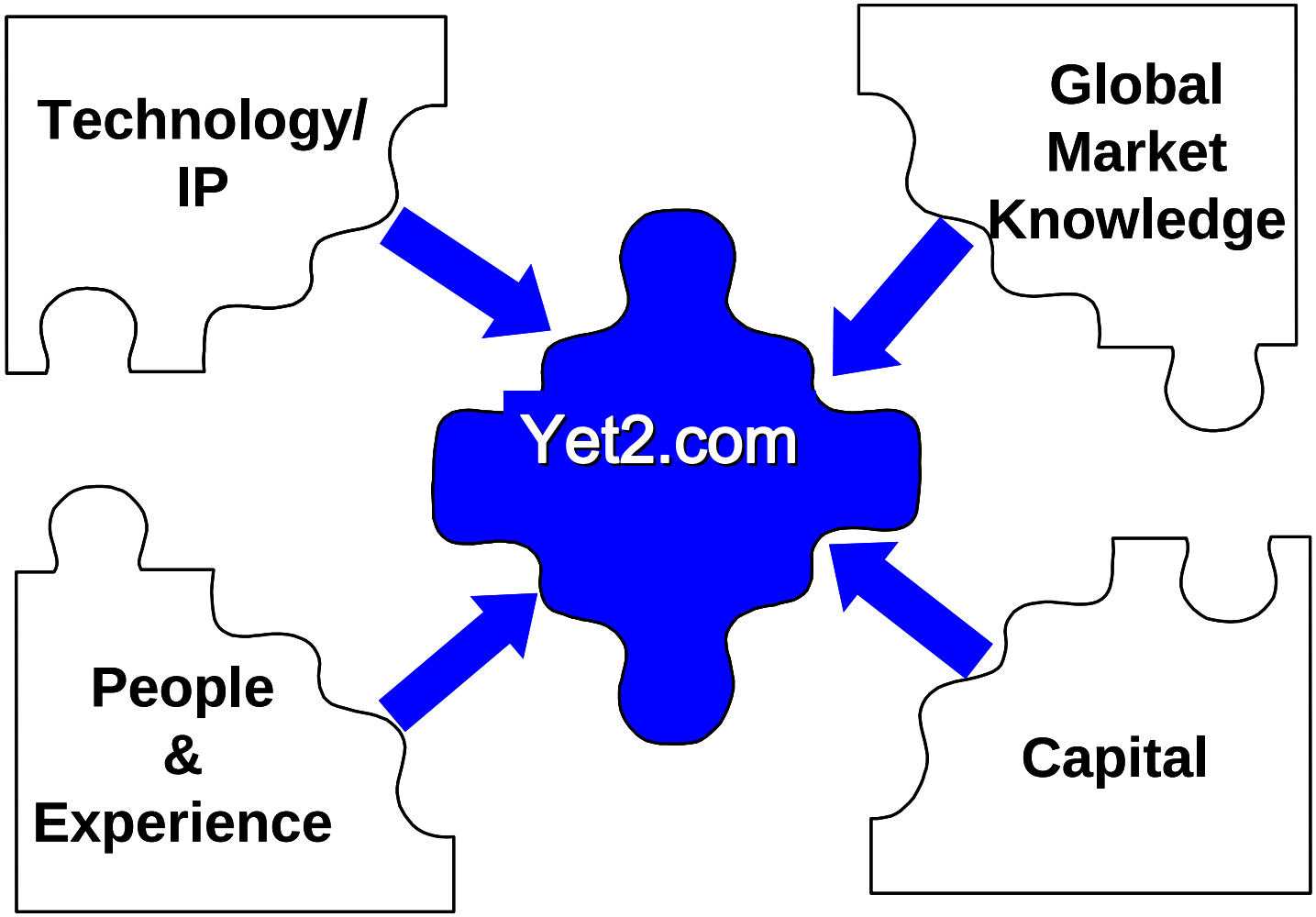
yet2.com: Experts in Bringing the Pieces Together



yet2.com Government Experience

- Department of the Air Force, Air Force Materiel Command, AFRL: OPEN INNOVATION SUPPORT SERVICES (March 7, 2007)
  - ✓ Six technology scouting projects
- NASA/Lyndon B. Johnson Space Center Contract Award: Innovation Support Services (Sep 29, 2009)
  - ✓ Bone Density Measurement
  - ✓ Real-time Microbiological Monitoring of Water and Biocides
  - ✓ Radioprotectants
  - ✓ Exoterrestrial Life Differentiation
  - ✓ Portable Imaging
  - ✓ Food Protection
- Y12 National Security Complex (December 2010). Open Innovation and Technology Marketing.

Technology Scouting vs. Solving and Crowdsourcing

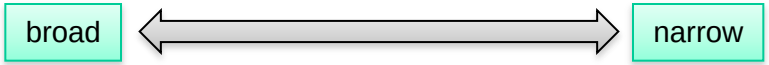
Scouting	Solving
Tangible technologies, testable, reviewable	Concepts and ideas to consider
Established businesses, research institutions	Individual inventors and teams
Existing technologies to modify and implement	“Sparks” and ideas to start a project
> TRL3	TRL1-2
Purchase a product, fund, collaborate	Bounty or award

Keys to Success: Organizational Groundwork

- Choice of Project
  - Conduciveness to search
    - Likelihood that solution may emerge from beyond your core network
  - Business Impact / Urgency
    - Existing product line(s) vs. new business opportunity
    - Trigger for need (e.g., regulatory requirement, incremental improvement)
  - Readiness to acquire
    - Project funding & staffing
    - Technical competence to evaluate, and/or budget to employ external evaluators
    - *Willingness to complete development*
- Client Role
  - Ownership – direct involvement of business leader who can “green light”
  - Involvement – team bi-weekly calls (*with* preparation) to screen candidates
  - Engagement w/external cos. – legal hurdles minimized; sample evaluation
  - Momentum – maintaining drive throughout process; willing to “close”

Keys to Success: Choice of Need

Search scope:



Background knowledge about the problem/specs:

Project Trigger (IP situation, competitors, regulatory change…)/motivation:

Deadlines/product launch in:

Maturity level of preferred solution:

Internal project to solve the Need:

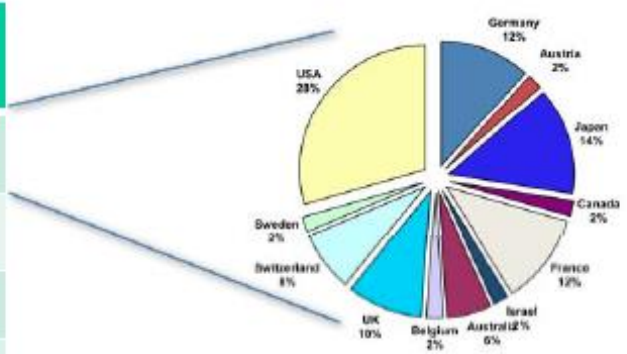
Willingness to complete development:

NASA JSC Open Innovation Pilot

- November 2010 – yet2.com conducted Open Innovation and Technology Needs (TechNeeds) Prioritization session at NASA JSC Center
- Technology Scouting projects are selected and internally approved by NASA
- yet2.com conducts online and offline search and presents results to the TechNeeds owners
- NASA selects technologies with the highest potential for further engagement
- September-December 2010 - yet2.com conducts evaluation interviews with project leads and produces a final report incorporating key learnings and suggestions for future development of open innovation initiatives at NASA JSC.

Yet2.com

Technical Need	No. of total replies/leads	No. of hits (initial interest)	Active leads
Bone Density Measurement	51	793	5
Monitoring of Water and Biocides	61	2003	8
Radioprotectants	28	475	6
Exoterrestrial Life Differentiation	31	1596	1
Food Packaging/Protection	29	173	5
Portable Imaging	34	581	5



- Yet2.com acts as a technology scout bringing together buyers and sellers of technologies.
  - Facilitates building consortia around common interest.
  - Option to develop partnerships.

What makes a well-stated need?

- Clearly states what would satisfy the need.
- Provides “constraints” – musts and must-nots
  - But not too many or too detailed (*yet2.com* can do filtering)

- Two approaches:
  - Specific: Methods to determine if there is life on Mars
    (answers the need, but applies only to life on Mars)
  - Generic: Seeking biological assay techniques
    (answers the need and may attract a wide variety of technologies)

Example: Life on Mars

- **Specific:**
  How can astronauts conclusively differentiate between life found on other planets, and similar forms of life that may have colonized the planet via contamination from earlier probes from Earth or even via meteorites blasted from Earth to Mars? (At least one meteorite from Mars but found on Earth may display indications of life.) NASA acknowledges that such a protocol may be difficult because we know of only one planet that definitely harbors life: the Earth.

- **Generic:**
  We need to formulate a new, single, robust assay that classifies a microorganism if known; and if unknown by the assay, flags it for further testing. The microorganisms presented to the test will be unidentified when encountered, and the test must be thorough enough to “take on all comers.” If the test recognizes a microorganism, it must also be able to detect any serious differences between the recognized microorganism and its known varieties.

Time and Resource Savings (NASA JSC project owners survey)

- “yet2.com eliminated the need for the technical owner to run patent and literature searches”
- “Companies and technologies found would probably have been missed in an internal search”
- “Evaluating proposal solutions still takes time, but more efficient with yet2.com prescreening”
- “yet2.com process is a huge time/budget saving compared to running a regular marketing survey”
- “Compared to SBIR - yet2.com process was less expensive and produced results in a shorter timeframe”

Real Value = Implementation of Solutions

1. Meeting and discussing the issue with the solution provider (hotel, travel and consulting costs) (“*life on Mars*”)
2. Engagement through SBIR mechanisms (*Bone Imaging*, *Radiation Protection*)
3. Distribution of information about the existing funding mechanisms within NASA/Awareness campaigns (*Radiation Protection*)
4. Joint publications (“*life on Mars*”)
5. Joint site visit (*Bone Imaging*, *“life on Mars”*)
6. Financing research (*Bone Imaging*)
7. Financing co-development of the product (*Drinking water monitoring*)
8. Creation of the consortium of the solution providers (*Medical Imaging*)

Individual Scouting Project Timeline

Activities/Time	Month 1 of a TechNeed™				Month 2					Month 3	Month 4	Month 5				Month 6			
Weeks	1	2	3	4	5	6	7	8	9	10-13	14-18	19	20	21	22	23	24	25	26
Timeline per TechNeed™																			
Administration /Posting																			
TechNeed™ Drafting																			
Posting and Management			timeline defined with NASA																
Aggregation of Submissions																			
Successful Solution																			
Due Diligence																			
Management of Feedback																			
Engagement and Award Management																			
Bi-weekly Meetings																			

We look forward to working with you!

yet2.com, Inc.

Phil Stern, CEO
pstern@yet2.com
781-972-0603

Question and Answer Period

- Questions will now be addressed about today's presentations
- Enter questions in chat box in your webinar menu (right side of screen)

Thank you for attending!

- Please complete the session survey
- Next Webinar – Tuesday, June 11, 2013
  - FLC/IRI Series
    - Panelists
      - Gretchen Baier, Dow Chemical Company
      - Linda Beltz, Weyerhaeuser
      - Joe Fox, Ashland Performance Materials
      - Dave Russell, Monsanto
      - Derek Shuttleworth, Goodyear Tire and Rubber Company