



Open Innovation and Technology Scouting with yet2.com

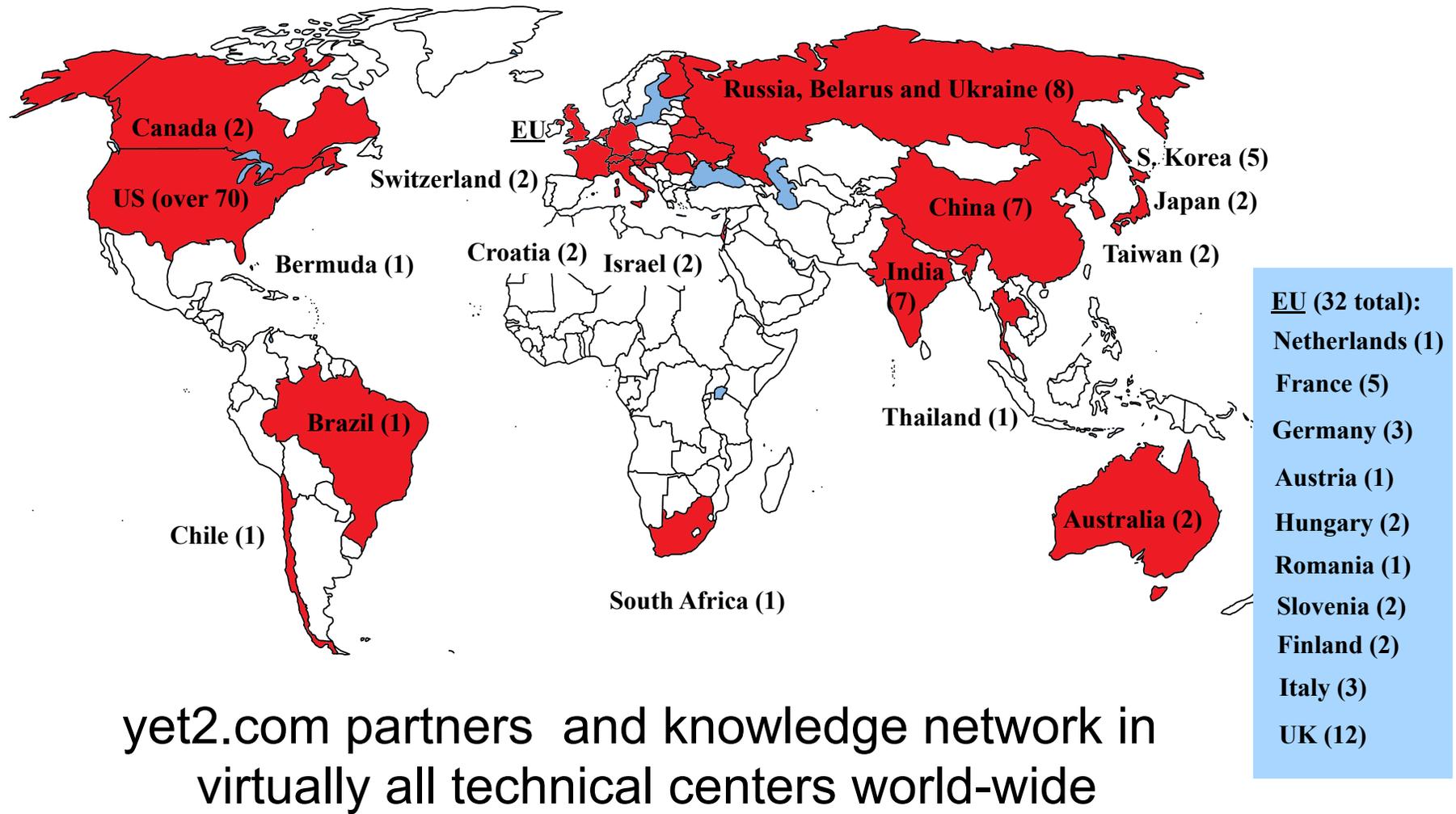
yet2.com – Global leader in intellectual property (IP) licensing, acquisition and consulting

- 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

yet2.com Leading members



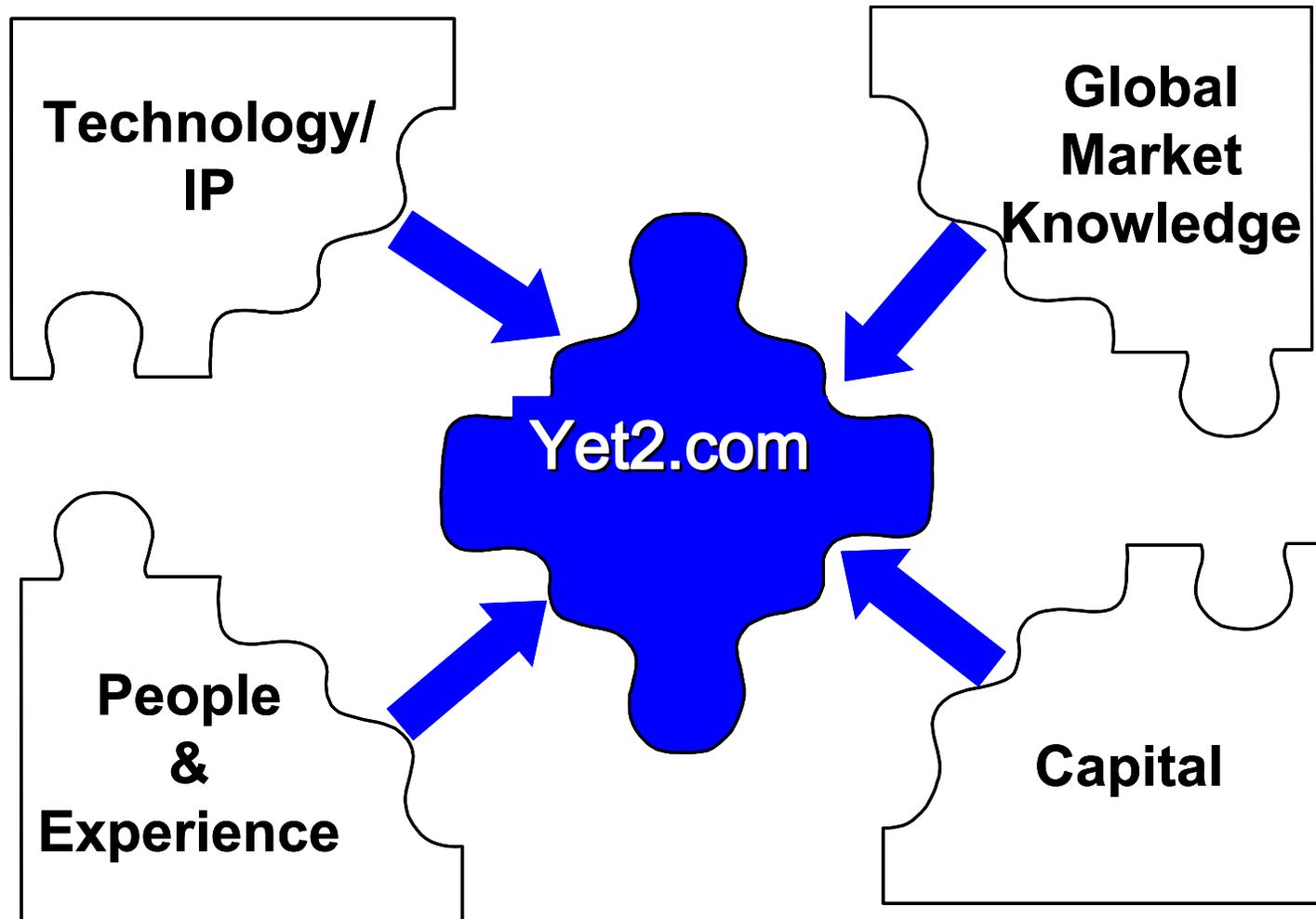
yet2.com: Relationship-based global network



yet2.com services

- **Technology Acquisition / Open Innovation**
- yet2Venture Consortium
- Technology Out-Licensing
 - Platforms for non-strategic applications
 - Leading edge innovations
- Patent Trading
 - Anonymous acquisition of strategic patents
 - Private sales of non-core patent portfolios
- **Seminars, Training, Advising**
 - Negotiation and Open Innovation

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.

Open Innovation Defined

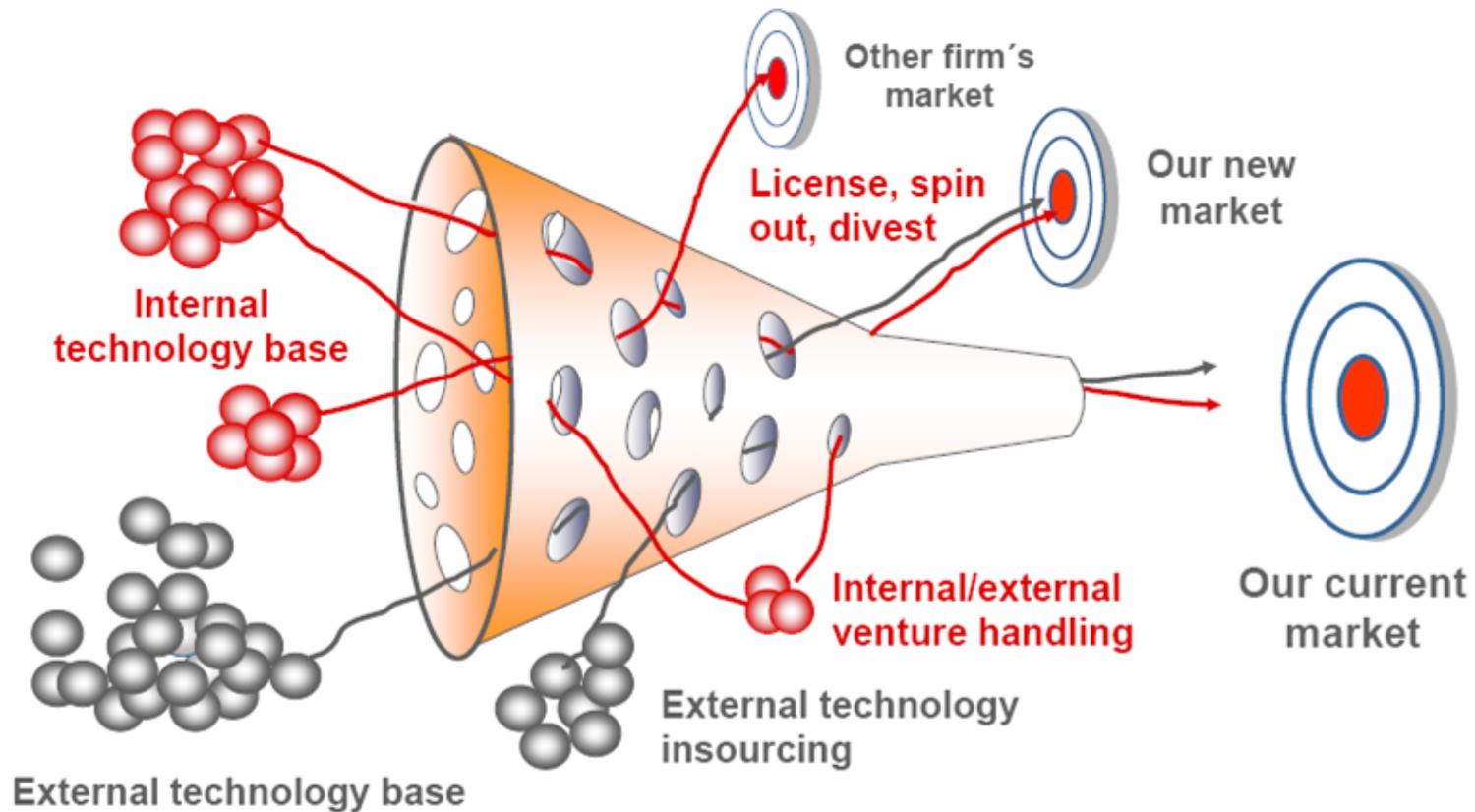
Old model (*closed innovation*):

- Companies must generate their own ideas, then develop, manufacture, market, distribute and service those ideas themselves.
- Spectacular successes of central R&D such as Bell Labs.

Open Innovation:

- Useful knowledge is widely disseminated, and ideas must be used with alacrity. If not, they will be lost. Role of R&D extends far beyond the boundaries of the enterprise.
- Companies must now harness outside ideas to advance their own businesses while leveraging their internal ideas outside their current operations.

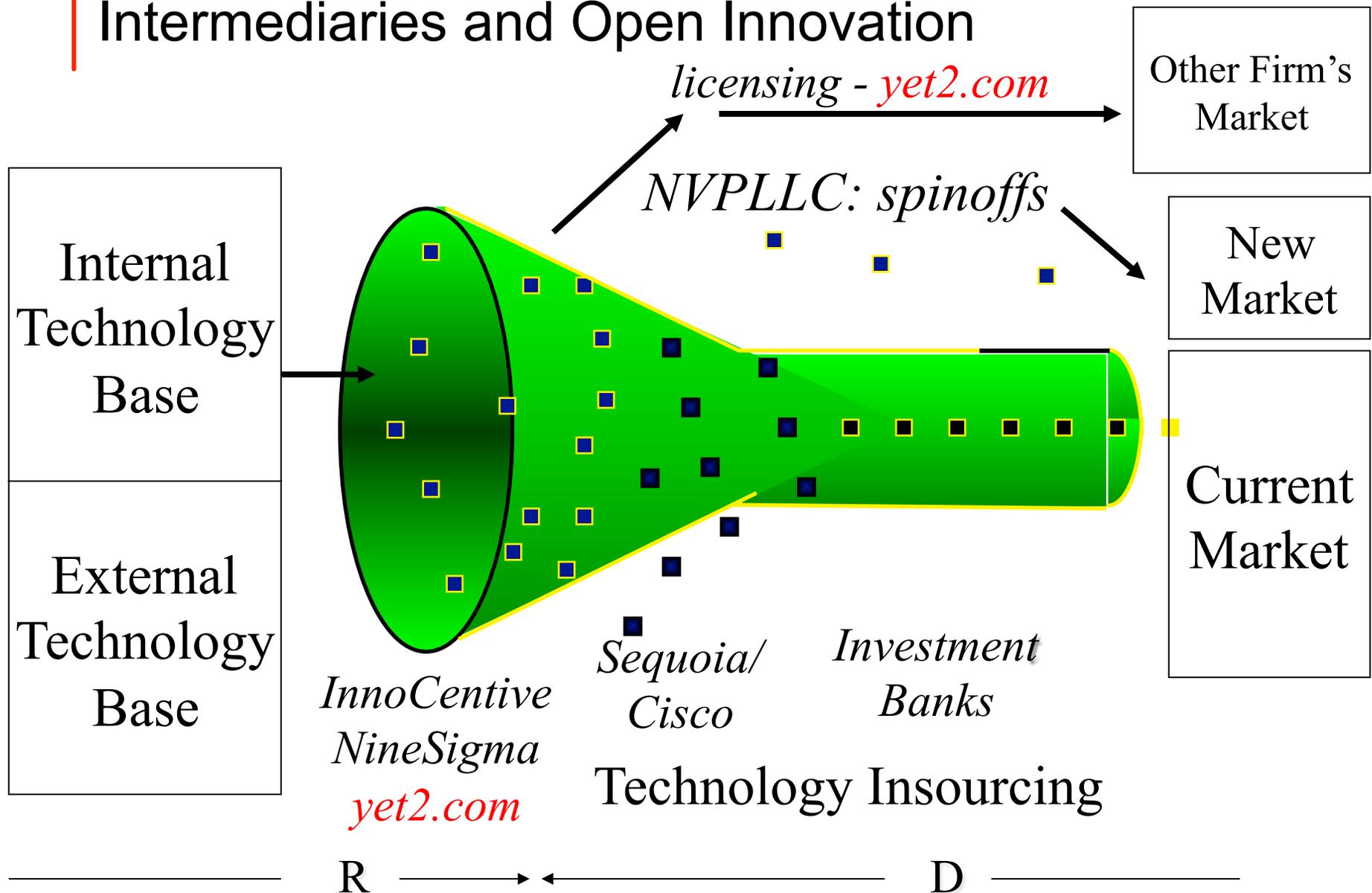
Chesbrough's Open Innovation



Source: Henry Chesbrough UC Berkeley, *Open Innovation: Renewing Growth from Industrial R&D*, 10th Annual Innovation Convergence, Minneapolis Sept 27, 2004.



Intermediaries and Open Innovation



yet2.com and Open Innovation

- We've worked with 10,000+ buyers of technology
 - Key success determinants (structure, culture, incentives, etc)
- Conducted 500+ proactive searches on behalf of technology acquirers
 - How to maximize valuable responses, and filter out non-valuable ones
 - How to help the client become more open to OI
- Access to the processes of most of the F500
 - 5 yrs ago – only 3-5 really serious companies
 - Today – all our clients are moving to OI models
 - Asia moving most quickly
 - Some companies more serious than others
 - Government agencies and entities
- Personalized seminars, training and advice in OI

Technology Scouting – the Why (key motivations)

- Market Intelligence
- Speed to Market (industry)
- Non-Core Technology Opportunities
 - One-off Needs
 - Technology Platform partners – a consistent innovation pipeline
- Move into ‘White spaces’

Consistent organic growth is rarely achieved yet hugely valued

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

Scouting Defined

- Hands-on approach
- Significant portion of solutions coming from Asia (~20-30%)
- High % of solutions are later stage technologies (~50% commercialized or close to commercialization)

yet2.com makes this a painless process by:

- Filtering irrelevant and already known technologies
- Identifying unique, not known solutions
- Facilitating your direct engagement with solution providers

What is Important for 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”

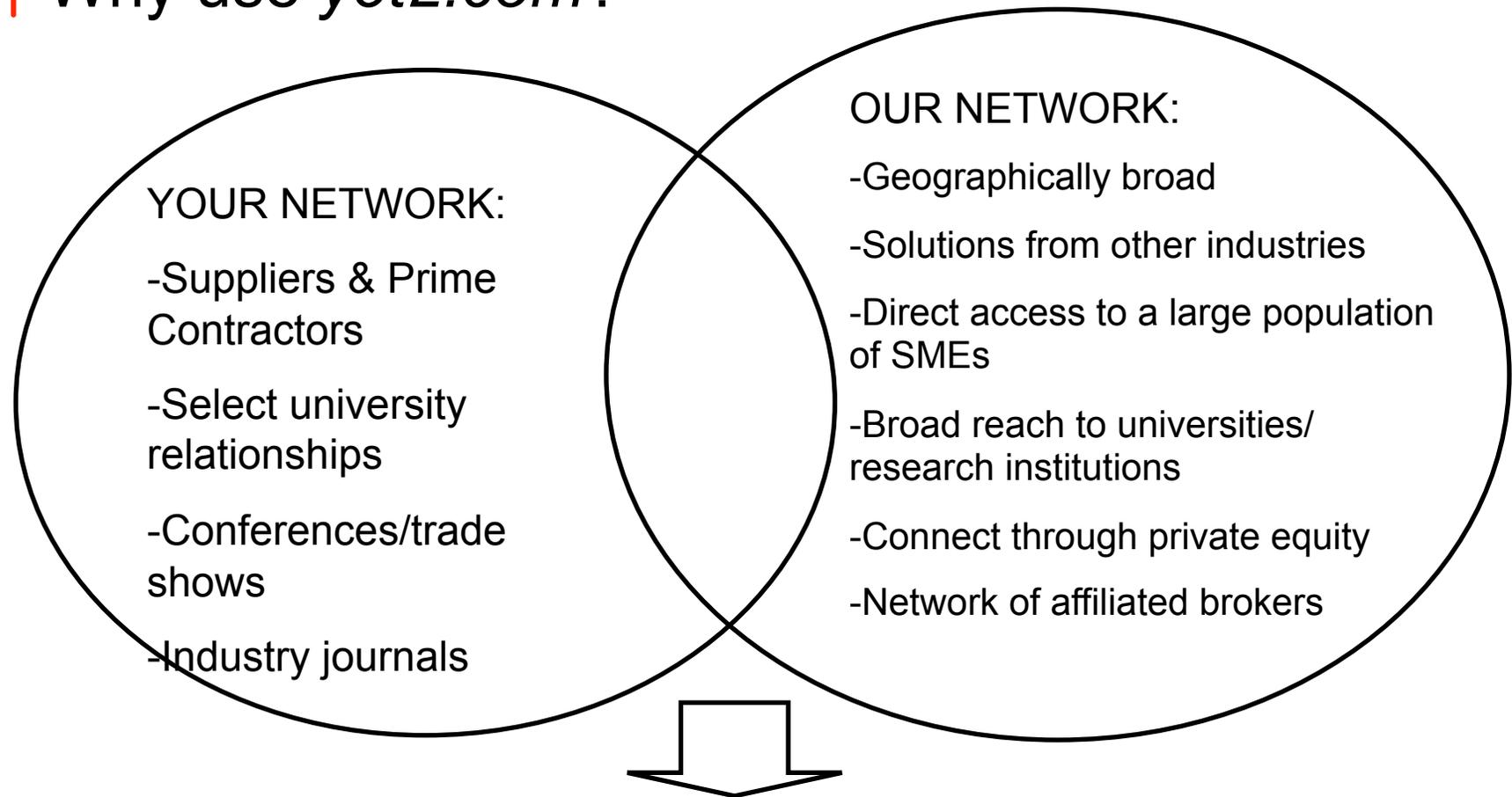
Organizing for Success

- Build dedicated team, but...
 - Ensure project teams include those who would have developed the solution internally
- Create incentives for entrepreneurial behavior
- Staff & skills require a careful mix...
 - Cooperative competencies
 - Ability to work with smaller companies
- Use external resources to extend ‘reach’
 - Go beyond conversations with suppliers, technical conferences, serendipity
- Funding
 - Set aside funding in budget both for “searching” and for “acquisition”



yet2.com Methodology

Why use *yet2.com*?



Both networks important, but will yield different responses

Our Marketing Approach

yet2.com employs **multiple channels** to make connections:

- **Direct ‘Rolodex’ channels**

- *yet2.com* competencies database
- Small-Medium-sized companies network
- Relationships borne of over 10,000 introductions between buyers and sellers (including University, Research, VC)
- External expert network

- **Broadcast channels**

- *yet2.com* Marketplace, email communications
- Syndication partners and Broker relationships

yet2.com Marketplace



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About Us

Are you a new visitor to yet2.com? [Click here](#) to find out what we can do for you.

Tech of the Week™

 **Non-Contact Technique Can Measure Material Properties at Angstrom Resolution** -- New technique measures metal or coating thickness, thermal and electrical conductivity, material imperfections, and finds contaminants that may not be detectable by other means.

 **Non-Invasive Diagnostic and Sorting Technologies for Seed and Plant Quality** -- Seed sorting, analysis, maturity and quality of fruits and berries, plants and plant parts -- all are applications for chlorophyll fluorescence.

TechNeed Challenge™

 **Plastic Packaging from Corn (Maize)** -- This company's largest customer has requested a move to corn-based plastic because of its biodegradability. Do you have a substitute for EVA foam?

Technology Marketing Report™

 **Electronics, Environmental & Public Administration**
The Technology Marketplace Report is a list of selected technologies from our database.

News

 **Technology Providers**
Learn more about the world's leading innovators who have chosen yet2.com as their official web-based technology marketplace.

 **BGA**
BUSINESS GROWTH ALLIANCE, LLC

 **Executive Briefing VIII**
Cambridge MA USA
Nov 5-7 2006
[info](#)

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Announcing the newest features, products and services for you...

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Technology Acquisition Methodology



	Understand	Find	Filter	Engage
Key Activities:	<ul style="list-style-type: none"> • Understand client's objectives • Understand market and available technologies • Understand partnering requirements • Document marketing description and project objectives (for both internal & external use) 	<ul style="list-style-type: none"> • Promote using <i>yet2.com</i> marketplace and direct email • Search the network (competencies database, entrepreneurs, brokers, VCs, universities) • Find offerings fitting initial criteria 	<ul style="list-style-type: none"> • Find companies and filter results against criteria • Gather additional information based on client's evaluation criteria • Update market and technology understanding • Refine target criteria and continue search 	<ul style="list-style-type: none"> • Engage key targets with in-depth discussions • Clarify mutual contributions and benefits; position relative value-add
Client	<ul style="list-style-type: none"> • Define strategic objectives • Define initial search and partner criteria 	<ul style="list-style-type: none"> • Respond as questions arise • Evaluate preliminary info • Prioritize 	<ul style="list-style-type: none"> • Review and evaluation • Refine criteria • Confirm next steps 	<ul style="list-style-type: none"> • Participate in initial discussions • Evaluate most promising alternatives

Project Structure - Data Gathering and Review Process

- *On-line Activities*
 - *yet2.com* on-line marketplace
 - *yet2.com* target marketing e-mail (Technology Marketing Report)
 - *yet2.com* syndication partners
- *Off-line Activities*
 - Universities, Research laboratories and related start-up companies
 - Small and medium enterprises
 - *yet2.com* private rolodex/competencies database
 - Warm calls to targets we know have relevant technology
 - Venture Capitalist and Private Equity firms
 - Individual entrepreneurs & consultants
- *Screening*
 - *Yet2.com* provide technology and other non-confidential information whenever we obtain through on-line/off-line.
 - *You will review the material and provide feedback at each conference call.*

Choice of Need is Key to Project Success

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:



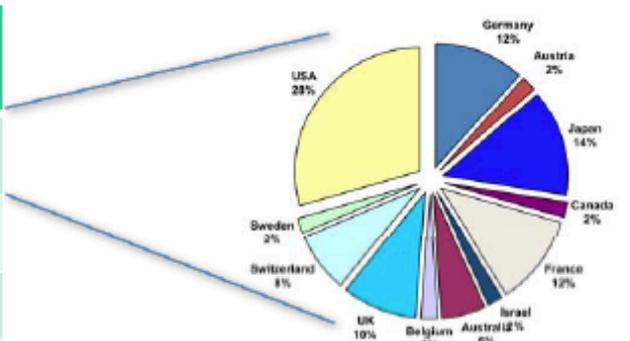
TechNeed Title			
Search Scope			
Background Knowledge			
Urgency - Project Trigger - Deadlines			
Project Status - Existing / new - Need Ownership			
Solution evaluation - Technical competence - Availability			
Development status - Desired technology readiness - Willingness to complete development			
ASSESSMENT:	Conducive to Search	Business Impact / Urgency	Readiness to Acquire
(H/M/L)	H/M/L	H/M/L	H/M/L

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.



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.

The screenshot shows the Yet2.com homepage with a search bar at the top. Below the search bar, there are navigation links for 'Find a Technology', 'List a Technology', 'Insight', 'Discussions', and 'About Us'. The main content area features a 'Tech of the Week' section with a featured article titled 'Crystalline, salt-resistant waterproofing material works within the cement matrix'. Other sections include 'TechNeed Challenge', 'Technology Marketing Report', and 'Providers'. A sidebar on the left contains a 'Member Log In' form and a 'Browse a Needlist' section.

NASA Pilot Projects summary

<i>Search (Need)</i>	<i>Project Lead at NASA</i>	<i>No. of total replies/ leads</i>	<i>No. of hits (initial interest)</i>	<i>Active leads (as of 1/20/11)</i>
Deep-bone density	Jean D. Sibonga	52	19	5
Drinkable water: -Real time pathogen analysis -Preventing growth and rmoving	C. Mark Ott	61	18	8
Radioprotectants	Eddie Semones	28	18	6
'Life on Mars': -Qualitative microbe detection -Differentiating terrestrial life	Joel S. Levine	31	1	1
High barrier food packaging	Michele Perchonok	29	5	4
Portable diagnostic scanning	David Baumann	34	5	0

TechNeeds



Search Technologies Technology Needs

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yet2.com TechNeed

- [Overview](#)
- [Requester Demographics](#)
- [Licensing Terms](#)
- [Discuss](#)

Actions

Seeking: Accurate measurement techniques for deep-bone density and structure

Description

OVERVIEW

We are seeking a clinically-useful technology with enough "spongy" bone that is found in the marrow cavities of which be for skeletal sites surrounded by layers of soft tissues, interferes with conventional imaging and using a more acc...



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Seeking: Real-time analysis and reporting of water-borne microorganisms

Description

OVERVIEW

We need a technology that allows us to monitor the microorganism content of stored potable water in real time and report the water's status to assure its continued potability even after storage times as long as a year.

BACKGROUND

For our purposes, the definition of potable water is 50 colony-forming units (CFU) or fewer per milliliter. We're looking for a technology that allows us to monitor the condition of that water in real time and report its readings. Because we start with water from a municipal water system, the chemical and mineral content of the water is not of particular concern. The bacterial count is...

Current practice is to draw a sample of the water through a filter and use a growth medium to assess the bacterial concentration. By its nature, this process requires 48 hours, during which time people may be drinking the water.

While reporting speed is important, of more importance is accuracy and the breadth of information about biological contaminants.

We're also interested in tracking bacterial contaminants such as Escherichia coli, Salmonella...

Seeking: Radioprotectants for humans exposed to chronic and acute radiation

Description

OVERVIEW

We are seeking biological, pharmaceutical, or dietary countermeasures to act as radioprotectants for humans exposed to higher doses of radiation; either chronic exposure or acute exposure.

BACKGROUND

Understanding the mechanism of radiation damage in humans is the first step in preparing countermeasures and treatments for those chronically exposed to radiation and those with acute exposure. We know the potential effects: radiation poisoning, nausea, cancers, and cell damage that may appear anywhere in the human body -- and long after initial exposure, because radiation is cumulative.

We are looking for any successful radiation countermeasures, mitigants, and treatments for both chronic (long-term) and acute (short but relatively intense) exposure to radiation -- even if you are not currently certain of the mechanism of protection.

yet2.com TechNeed

- [Overview](#)
- [Requester Demographics](#)
- [Licensing Terms](#)
- [Discuss](#)

Actions

- [Respond to TechNeed](#)
- [Create Discussion](#)
- [Email This TechNeed to a Friend](#)
- [Contact yet2.com](#)
- [Print This TechNeed](#)
- [Return to Search Results](#)

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.

TechNeed Challenges



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Info

TechNeeds are anonymous requests for technology. The TechNeed Challenge periodically highlights TechNeeds that you and your organization may be able to

TechNeed Challenge

We need a technology that allows us to monitor the microorganism content of stored potable water in real time and report the water's status to assure its continued potability even after storage times as long as



Search Technologies Technology Needs

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Info

TechNeeds are anonymous requests for technology. The TechNeed Challenge periodically highlights TechNeeds that you and your organization may be able to meet. Click [View Listing Details](#) to see the complete TechNeed - even if you're not already a member.

You do not need to have a technology listed on yet2.com to respond to a TechNeed.

To take full advantage of yet2.com, [Become a Member](#).

- Archive List**
- [Seeking: Acetic acid recovery system for use with industrial effluent stream](#)
 - [Seeking: Anti-fouling and detritus-removal technologies for a variety of hard surfaces](#)
 - [Seeking: New systems for](#)

TechNeed Challenge

Seeking: System for qualitative analysis of microorganisms and their taxonomic classification

We're looking for a system or method for qualitative analysis of microorganisms that can then classify them according to their taxonomy, thus identifying them.

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.

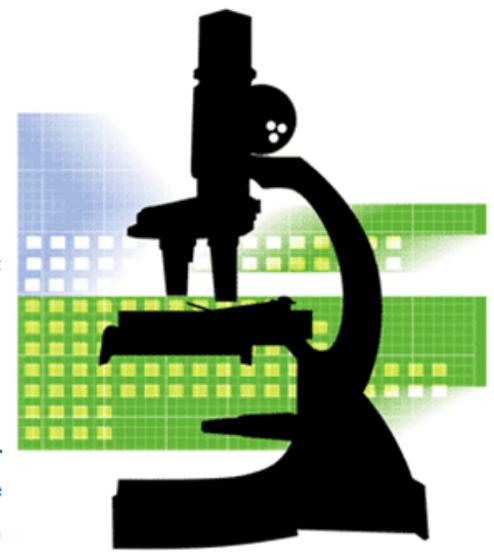
There are some important constraints:

- Light and compact enough for use in the field.
- Multiple use; continuous-use may be better.



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a sample of the se a growth rial concentration. equires 48 hours, ay be drinking the d is important, of y and the breadth al contaminants.



Scouting Projects Qualification Learning (NASA/JSC)

<i>Needs</i>	<i>Conducive to Search</i>	<i>Business impact/ Urgency</i>	<i>Minimum maturity level of a successful solution</i>	<i>Search owner</i>	<i>Evaluation process</i>
Bone Density	M	H	Working prototype	yes	-
Water and Biocides	H	M/H	Proof of principle, testable	yes	yes
Radioprotectants	M/L	M/H	Early research	n/a – broad project	No (data based)
Exoterrestrial Life	L	L/M	Concept	yes	n/a
Food Protection	M/H	M/H	Fully commercial	yes	Yes
Portable Imaging	M/H	M/H	Proof of principle	yes	yes

Time and Resource Savings (NASA JSC project owners survey)

The majority of project owners indicated that the Open Innovation process with yet2.com has helped save them time. However, in many cases it was difficult to quantify the savings.

- yet2.com eliminated the need for the technical owner to run patent and literature searches
- Companies and technologies found would of probably be missed in an internal search
- Evaluating proposal solutions till 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*)

Example Target dates

- Conduct Kickoff meeting: within 1-2 weeks of signing
- Initiate “Find” process: within 1-2 weeks of kick-off
- Provide weekly contact summary
- Mid-course meeting: 2 months after kick-off
 - “Refine” search effort
 - Initiate direct discussions
- Project hand-off to client: 4 months after kick-off

Technology Scouting Support Milestones

		Month of Project																
Activities / Time		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Training		as needed, timeline defined in collaboration with NASA Centers																
TechNeed Execution																		
<u>TechNeed(s), Set 1</u>	Kick-off	Posting & Management			Engage	Award Management												
<u>TechNeed(s), Set 2</u>				Kick-off	Posting & Management			Engage	Award Management									
<u>TechNeed(s), Set 3</u>							Kick-off	Posting & Management			Engage	Award Management						
<u>TechNeed(s), Set 4</u>										Kick-off	Posting & Management			Engage	Award Management			
Evaluation																		
Mid-Year Briefing																		
Annual Report																		

Note: Assumes Project Month 1 is April and mid-year briefing occurs in June; up to three TechNeeds recommended to be initiated each quarter; schedule continues beyond month 17th in similar pattern

TechNeed™ Drafting, Posting and Management and Aggregation of Submissions will be the most resource intense activities for each technology need.

We recommend that no more than three separate Needs be managed simultaneously at these stages. However it is not an issue of yet2.com capacity and if requested by NASA Centers or technology Need owner more needs could be run simultaneously with the use of additional yet2.com resources.

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																				

Next Steps

- Any questions?
- Schedule on-on-one time with yet2.com experts to discuss specific set of Needs or tentative projects
- Schedule specific regional or Center Training/Need Selection session with yet2.com
- Start a project

We look forward to working with you!



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