

National Workshop on Increasing the Capacity and Pace for Technology Scouting, Absorption, Adaptation through a “Hub and Spoke” Structure

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The Hub Context:
The Innovation Value Chain
and Global Technology Marketplace

Dr. Richard S. Cahoon

Colombo, Sri Lanka

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The Hub Context : The Innovation Value Chain and Global Marketplace

- The innovation value chain defined
and why it's relevant
- The global marketplace for proprietary (IP)
technology
- Expected take-home messages for seminar
participants

The Innovation Value Chain: turning innovation into economic development

Research and creative enterprise →
breakthroughs → invention →
economically valuable inventions →
valuable inventions + IP →
valuable inventions + IP + “validation” →
validated invention + partnerships →
validated IP + partnerships + investment →
New products & services, new companies

The Innovation Value Chain:

R&D enterprise and technical innovation: the foundation

- The non-commercial research enterprise
universities, government agencies, NGOs
- The commercial R&D Enterprise
small, med, large, & multinational companies
- Individual inventors

Many smart, educated, and creative people

..... with resources

.....working to solve theoretical and practical problems

Creates the foundation for breakthrough solutions

The Innovation Value Chain:

Breakthrough solutions → inventions

- Many breakthrough solutions solve important and/or economically valuable problems.....
..... but most do not
- Most such solutions are not commercially viable due to technical, economic, or business factors
- And some commercially-viable inventions lack meaningful IP
- Example: At Cornell, 50% of all inventions, have no economic future

The Innovation Value Chain:

converting inventions into valuable IP (patents)

- Of the 50% of inventions that meet criteria of commercial viability, only a subset are protectable with patents or other meaningful intellectual property (IP)
- IP is important for control:
Incentivize investment, protect interests, have something to “sell”
- Of all inventions produced, maybe 25% meet criteria of commercial viability AND IP protectability

The Innovation Value Chain:

Inventions → valuable inventions with IP

Invention triage for

economic importance,

commercial viability,

scalability,

meaningful IP

What is Invention “Triage”? Why is it important?

- *Triage* = the process of evaluating, categorizing, and selecting newly disclosed inventions in order to:
 - 1) invest time and money....or
 - 2) abandon.....or
 - 3) hold (defer decision)
- Most inventions will never generate commercial revenue
- IP commercialization is expensive/time-consuming
- Effective triage is essential for success of any tech transfer/ invention commercialization effort

Characterizing technical viability/market relevance

- Precisely what is the invention?
- Does it solve an economically important problem?
- What are its market applications?
- What are the market characteristics?
 - Size
 - # of companies
 - Typical profit margins
 - What is the innovation landscape? Are there any dominant companies?
- Are there significant regulatory hurdles?
- How does it compare with current alternatives
Different is usually not sufficient... you need superiority
- Quantify performance superiority, if possible

The Innovation Value Chain:

valuable inventions with IP face development hurdles

- Each patentable invention faces the same equation:

stage of development vs. cost

to take to next stage,

potential pay-off value

(i.e. Risk vs. “ROI”)

Stage of Development vs. Risk and ROI

Initial invention	= highest risk
Proof of principle	= high risk
Patent application	= high risk
Prototype,	= medium risk
alpha-test (lowers risk)	
beta-test (further lowers risk)	
Patent issued	= medium risk (maybe)
1 st product sale	= low-medium risk
Sales	= low risk
Repeat sales	= even lower risk
Etc.....	

Stage of Development vs. Risk and ROI

Each stage of development reduces risk and increases value. These add value:

Patent application

Issued patent (high quality patent)

Other IP

Well-managed tangible property

Working models and prototypes

Customer testimonials

Partnerships

The Innovation Value Chain:

Commercializing valuable inventions with IP

- Companies
 - in-house R&D and commercialization
 - joint venture
 - sale of IP and other technology assets
 - licensing
- Universities, Govts, NGOs
 - licensing to: existing firms,
start-up ventures
- Individual Inventors
 - licensing, sale, start-up

The Innovation Value Chain:

Research enterprise → breakthroughs

Breakthroughs → valuable & IP-protectable
technology

Valuable & IP protectable technology →
+ partnerships

A Commercialization platform

(license, sale, venture creation)

The Innovation Value Chain:

Why is it relevant to economic development?

It creates opportunities....

to convert intellectual assets.....

into new products and services,

new ventures,

jobs

And.....

an “ecosystem” and culture

of creative economic

development built on innovation

The Global Innovation Marketplace

IP fosters international economic potential

Have a Global Vision!

IP (particularly patents) can be a powerful global asset

Technology creators in a country can realize commercialization value through their IP (sale or licensing) in other countries

Consider international applications for each invention

The Global Innovation Marketplace

A case study

Patentable shrimp disease diagnostic invented at a
Philippine university

Solves serious economic problem in shrimp farming
operations

Philippines ranked 7th in farmed-shrimp production

So, the patentable diagnostic has potential value in
at least 6 other countries, besides Philippines

but.....

Patent applied for only in Philippines

= lost opportunity ☹️

The Take-Home Message for Workshop Participants

Creating economic value from invention requires certain key elements:

- Inventors with resources
- Technology development partners
- Commercialization implementers
- Professional service providers
- Effective IP tools and IP infrastructure
- Innovators and Entrepreneurs
- Investors
- Markets and customers

The Take-Home Message

Creating economic value from invention requires:

- Linkages between the essential elements
- Effective and proactive communication
- Facilitation of transactions
- People with skills, vision, and the right attitude

The Take-Home Message

The IP Hub provides a platform that:

- connects the essential elements,
- provides an IP infrastructure,
- enables linkages between partners,
- facilitates transactions
- And enhances the critical human component of the process (knowledge and skill)

Result: conversion of innovation into real economic development

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Thank you