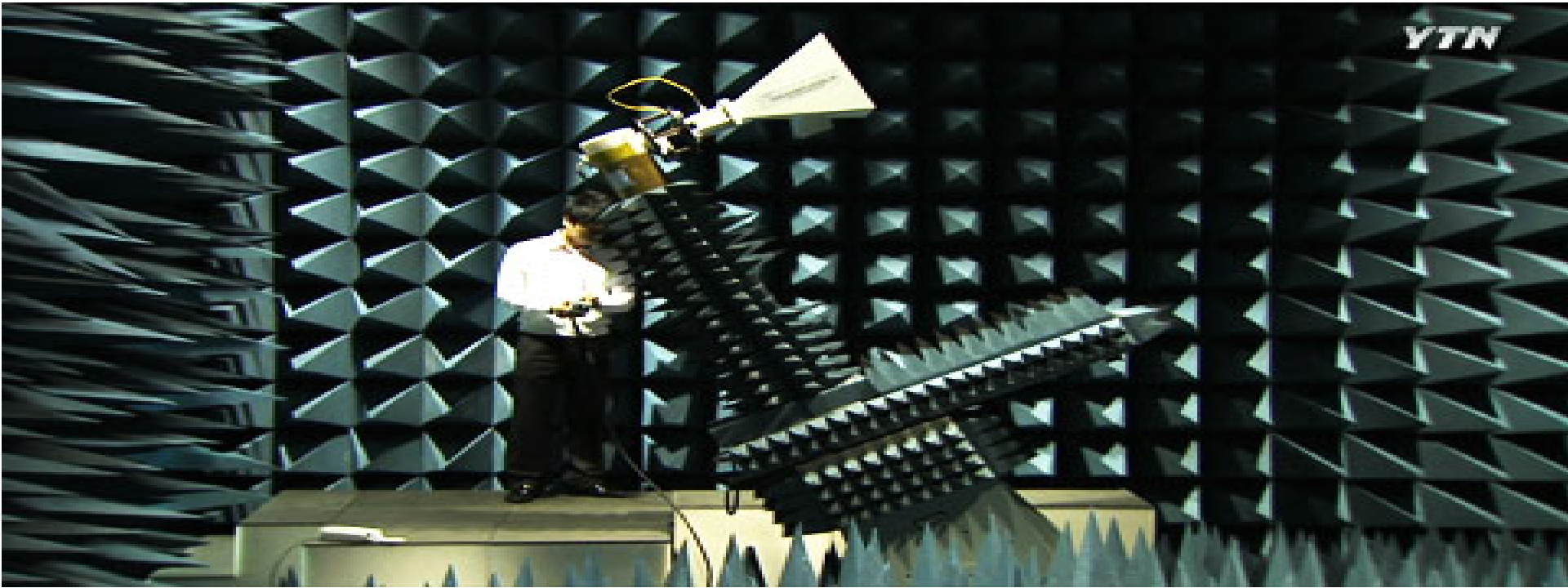




Strategy for Successful Overseas Technology Commercialization for Taiwan Bio-Pharma Industry

*Presented by Danny Kim
September 1st 2017*

Agenda

1. Market overview of technology commercialization
2. IP commercialization strategy
3. IP monetization strategy

1. Market overview of technology commercialization

Market Comparison for Technology Commercialization

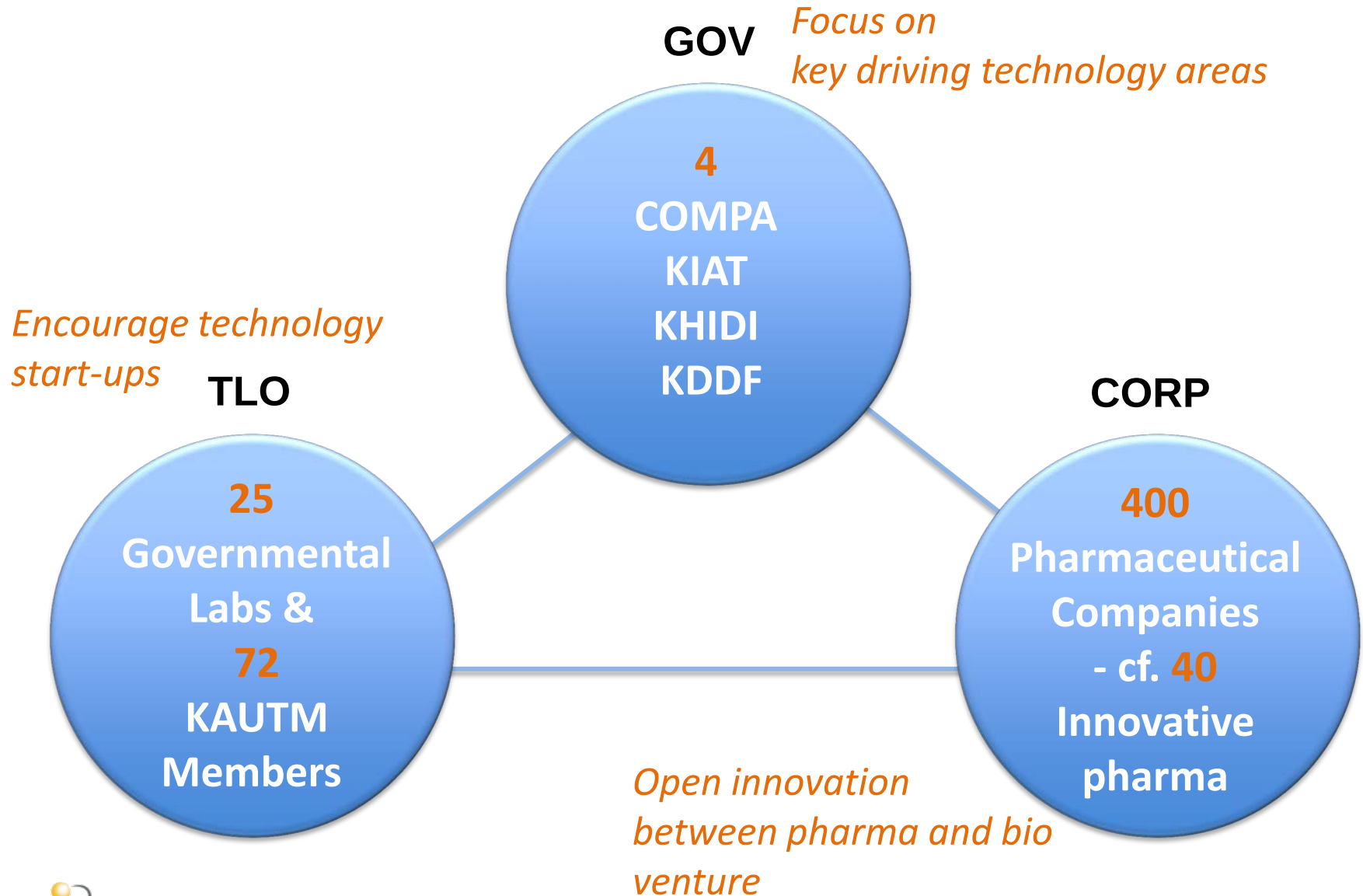
International comparison of technology trade volume (2014)

(Mil \$, %)

Sorting		S. Korea	Taiwan	Japan	Germany	U.K.	U.S.
Tech Export	Amount (magnification)	9,765 (1.0)	1,114 (0.1)	34,549 (3.5)	71,437 (7.3)	45,607 (4.7)	136,271 (14.0)
Tech Import	Amount (magnification)	15,540 (1.0)	5,374 (0.3)	4,843 (0.3)	54,364 (3.5)	19,377 (1.2)	89,415 (5.8)
Scale of Tech Trade (magnification)		25,305 (1.0)	6,488 (0.3)	39,392 (1.6)	125,801 (5.0)	64,984 (2.6)	225,686 (8.9)
Tech Trade Balance		-5,775	-4,260	29,707	17,072	26,230	46,856
Balance Ratio		0.63	0.21	7.13	1.31	2.35	1.52

Source: OECD, Main Science and Technology Indicators, 2016/1

Eco system of IP commercialization in Korea



Government – Key Driving Technology Areas

Korea government select and focus on 25 promising areas for technology commercialization in 2017

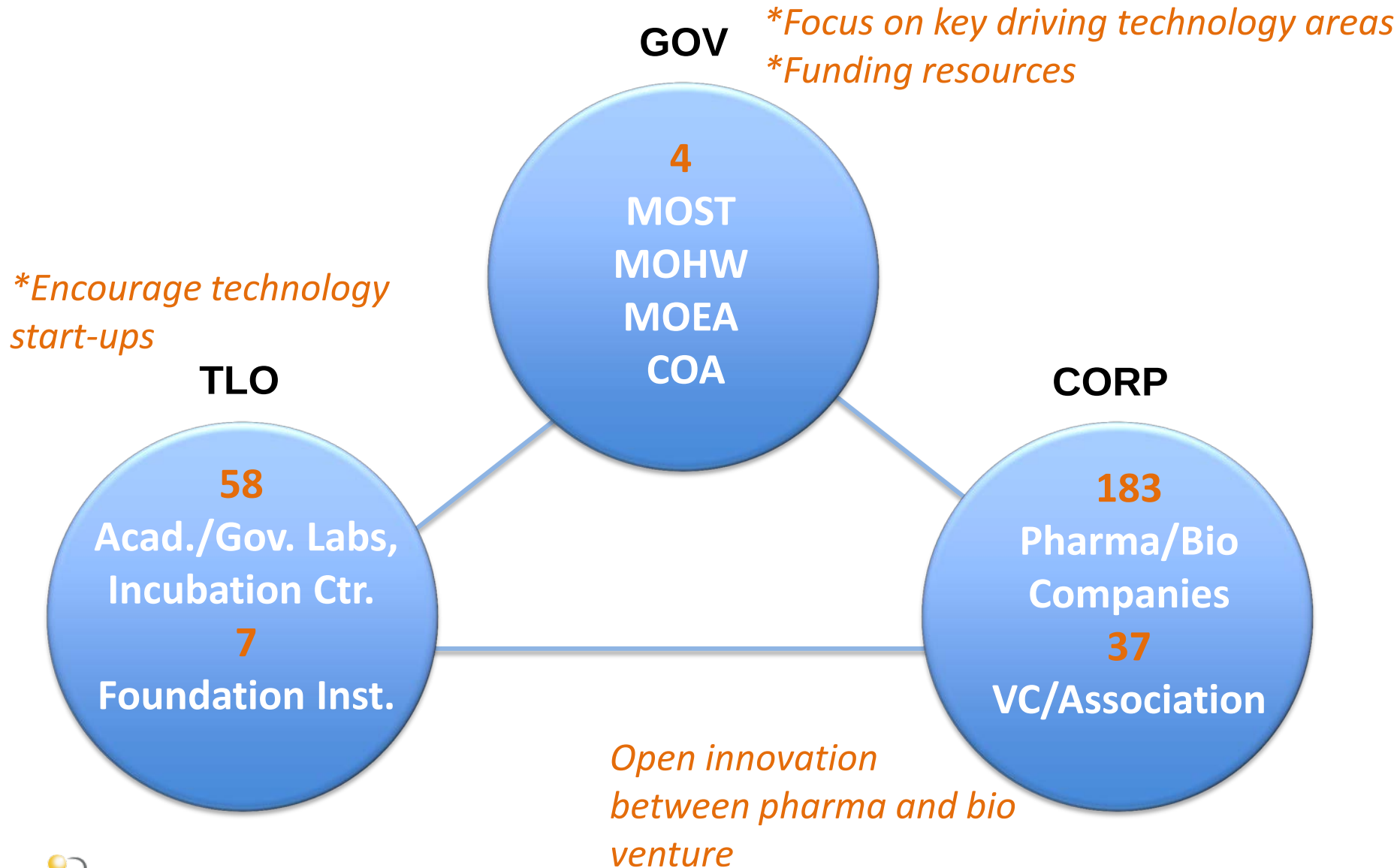
No	Promising Tech Area	Details
1	Connected Smart Factory	3D printer/scanner, etc
2	Next-gen Secondary Battery	Ultra High Capacity Secondary Battery, etc
3	Data Intelligence	Big Data Processing/Analysis, etc
4	Artificial Intelligence(AI)	AI SW, etc
5	IoT/IoE	Sensor, Module, Device, etc
6	Wearable Device	Smart Glass, Smart Watch, etc
7	Smart/Echo Building(home/building)	Energy Management System(BEMS, HEMS), etc
8	Augmented/Virtual Reality	Augmented Reality Device/Service, VR Device, etc
9	Smart Farm	Smart Greenhouse, etc
10	High Efficiency Solar Energy	High Efficiency PV Generation, etc
11	Smart/Micro Grid	Energy Management, Energy IOT, etc
12	Unmanned Vehicle	Drone, etc
13	Next-gen Display	Flexible/Transparent Display, etc

Government – Key Driving Technology Areas

No	Promising Tech Area	Details
14	Intelligent Robot	Industrial Robot, etc
15	Intelligent Semiconductor	Next-gen Semiconductor Materials, etc
16	Fuel Cell	Automobile/Power Generation Fuel Cell, etc
17	Advanced Medical Device	High Resolution Imaging Diagnosis Device, etc
18	Smart Healthcare	Remote Medical Treatment Service, etc
19	Next-gen Medical	Stem Cell Medicine, etc
20	Bio Material	Bio Fuel, Bio Plastic, etc
21	Nano Material/Structure	Nano Composite Material, etc
22	Future Fusion/Composite Material	Polymer Substitute material, Superconducting Material, etc
23	Next-gen Automobile	Autonomous/Electric Vehicle, etc
24	Smart City	Intelligent Transportation Infra, etc
25	Fine Dust	Fine Dust Detect/Monitoring, Reduction Device, etc
©	Climate Change Field	Global Warming, Energy Resource Saving, etc

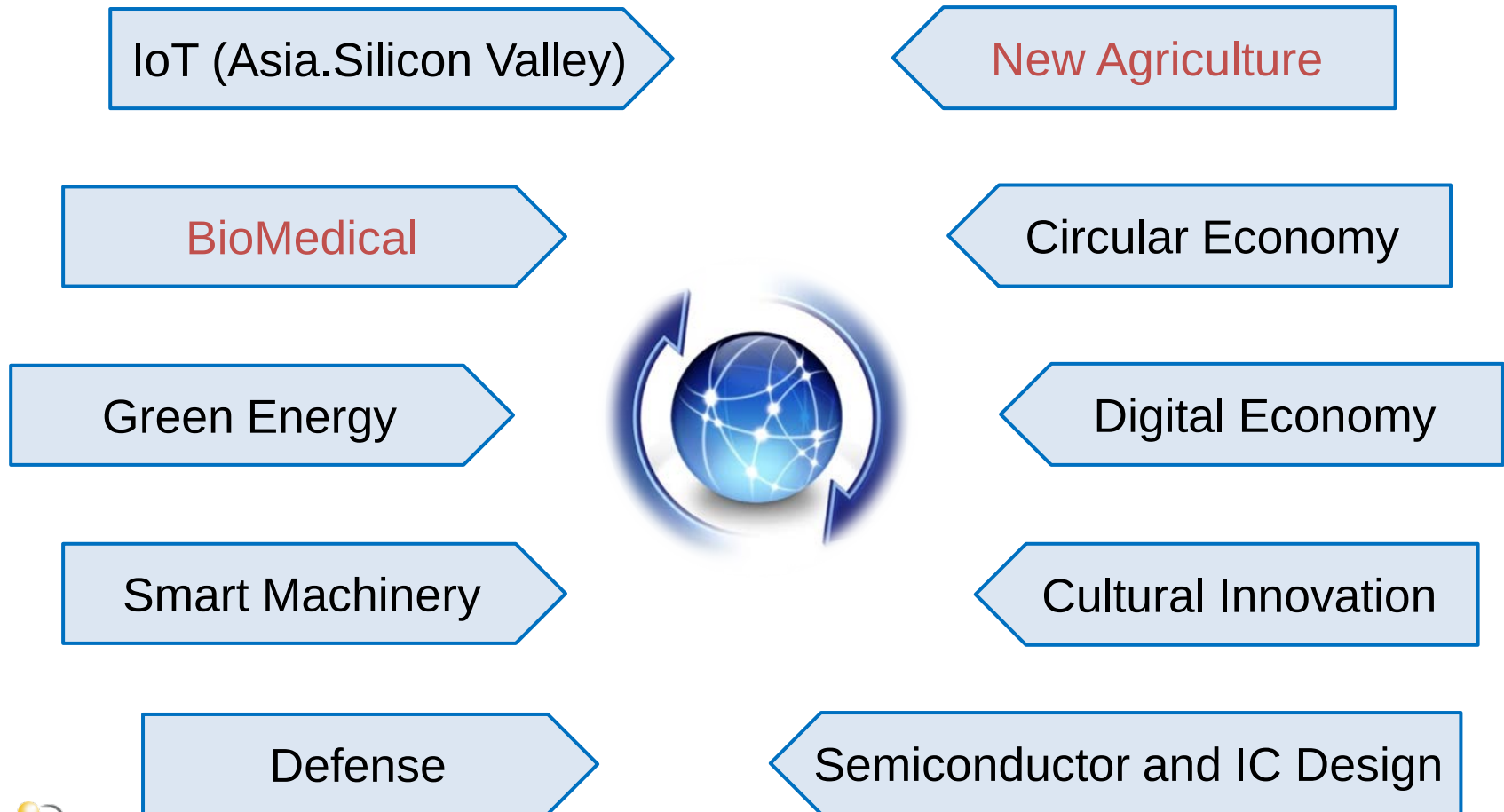
※ 10 promising areas and climate change area in red text are preferred and encouraged

Eco system of IP commercialization in Taiwan



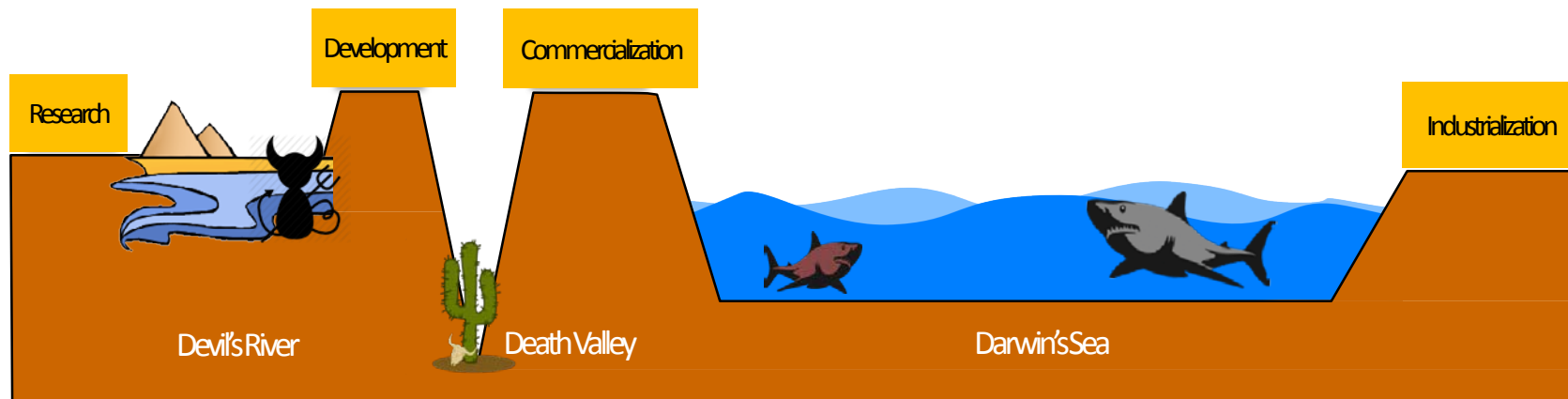
Government – Key Driving Technology Areas

Taiwan government is making a heavy commitment of resources to promoting seven sectors of the economy as the key to transforming Taiwan's industry, “**5+2 Industrial Innovation Plan**”, in 2016.



2. IP Commercialization Strategy

IP Strategy by Timeline



▪ Landscaping

- Technology analysis
- Market analysis

▪ IP valuation

▪ IP strategy

▪ IP commercialization

- Tech marketing
- Partner search
- Due diligence
- Deal negotiation

▪ Startups incubation

▪ IP monetization

- IP licensing
- IP litigation

▪ Business strategy

- JV, M&A, IPO, etc



Organic growth

IP Commercialization

IP commercialization is the process whereby ideas for new (or improved) products, processes or services are developed and commercialized in the marketplace.

“IP + COMMERCIALIZATION = INNOVATION”



Process to success

- Landscaping (IP/Technology/Market)
- SMK (Sales Material Kits)
- Technology marketing (Offline? Online?)
- Partnering search (Co-develop/Investor)
- IP valuation (cf. evaluation)
- Deal Negotiation (Data package)

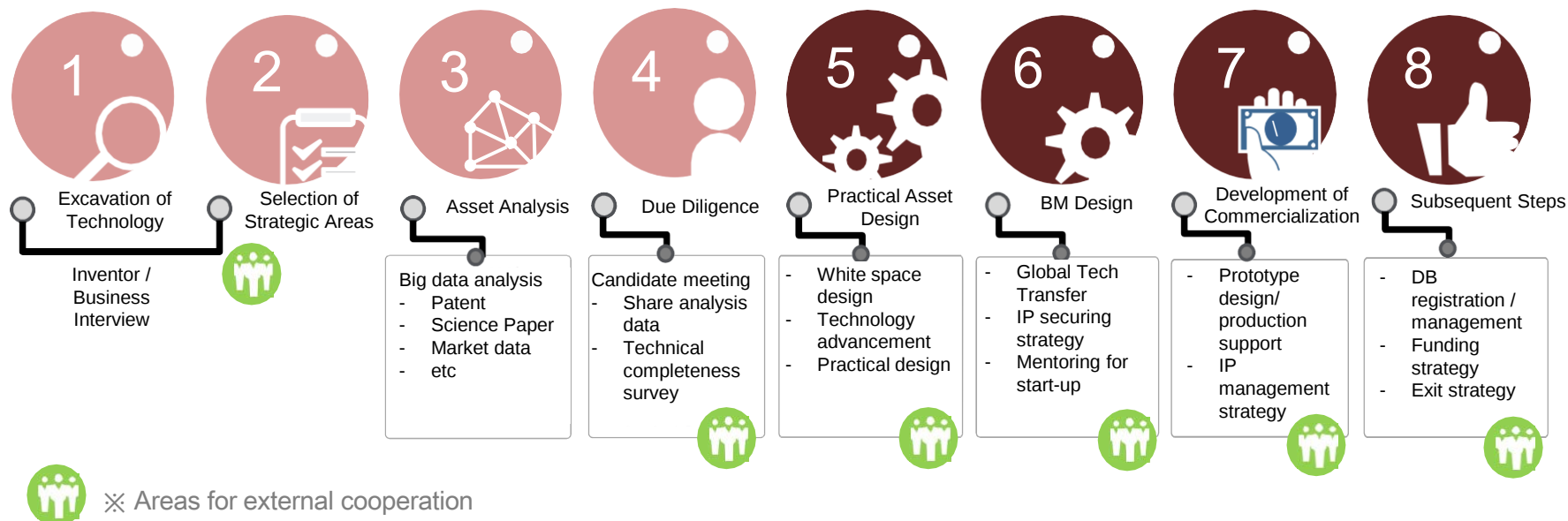
Startup Incubating Procedure

TRL (Technology Readiness Level) Steps

Step 1~4

Step 5~6

Step 7~8



Excavation of Promising Technologies

+

Commercialization and Advancement of Assets

From 'Ideation' to 'Exit strategy (M&A, IPO)'

Case Study 1: Profiling Service for Technology Marketing of 000 University

Project Overview

- **Target Technology**

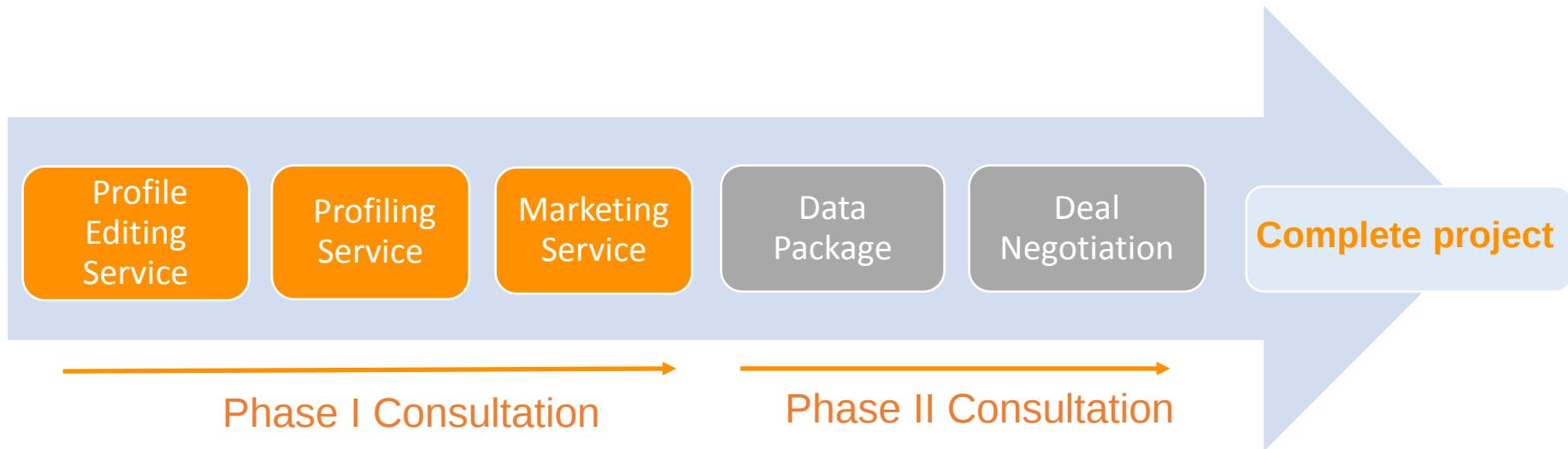
- a. 30 biotech that 000 University owns

- **Customer Needs**

- a. To promote abroad Biotech that 000 University is securing & make the first deal case of a international tech transfer for 000 University
 - b. Need to proactively initiate the international tech transfer because universities in Korea are so dependent on domestic technology transfer that they can not escape the low ROI environment

Project Procedure

The consulting service we will put to OOO University for the marketing of the 30 biotech and pharma technologies is proposed in two phases as described below.



Current progressive status

Candidate Tech 1. Biocompatible Particles and Method for Preparing the Same (Drug Delivery Technology)

→ *Going on early due diligence with an Ireland company*

Candidate Tech 2. Use of TRIM72 as a Target for Muscle and Heart Enhancer

→ *Face to face meeting in Bio Europe, and going on early due diligence with an American company*

Current progressive status

Candidate Tech 3. Use of Inhibitors of Leukotriene B4 Receptor BLT2 for Treating Asthma / Use of Inhibitors of Leukotriene B4 Receptor BLT2 for Treating Human Cancers

→ Face to face meeting in Bio Europe, and going on preparation of CDA with a German and Japan companies

Candidate Tech 4. Composite of Enzyme and Carbon Structure Complex, Method for Producing the Same and Use Thereof (topical applications, e.g., woundcare)

→ Going on early due diligence with an UK company

Collaboration roadmap with 000 University



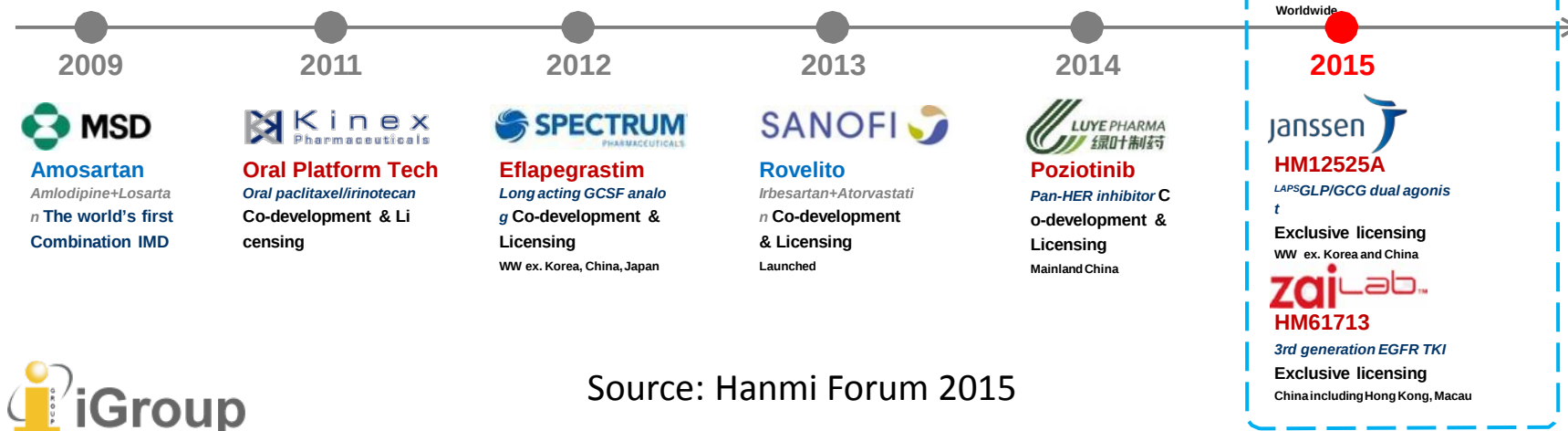
Case Study 2: Hanmi Pharm

Major Deals of Hanmi in 2015

MAR.	 Poziotinib	✓	Upfront payment	\$ 656 Mil.
MAR.	 HM71224			
JUL.	 HM61713	✓	Potential milestone payment	\$ 6,426 Mil.
NOV.	 Quantum Project			
NOV.	 HM12525A	✓	Royalties	Double Digit
NOV.	 HM61713			

Hanmi's Global Partners and Collaboration

Collaboration with global partners on various co-development and business opportunities for synergy effect



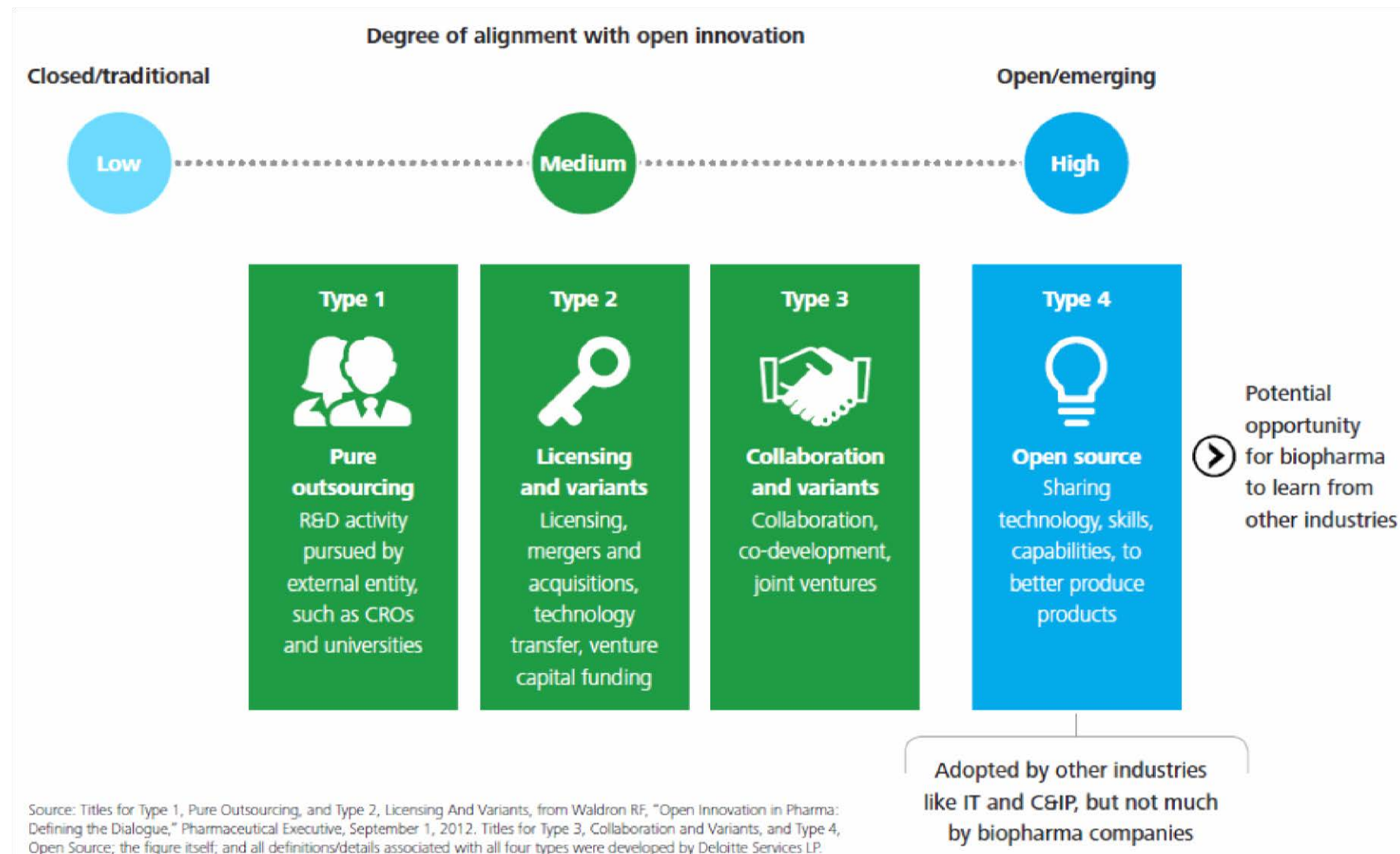
Source: Hanmi Forum 2015

Due Diligence Reviews 2010~2015

	# of diligence (product)	# of diligences (company)
Biologics	22	13
Small Molecules	33	30
Total	55	43

* Average 5.5 companies per product

Spectrum of Open Innovation



Network Matters

Evolution to Open Innovation

“Be the Best” vs. “Work with the Best”

Fully Integrated Company

- The Best Organization
- “Invent It Here!”

Assumptions

We should be the best
We should get things done by ourselves to earn money



Fully Integrated Network

- Lean and mean organization
- “Play bigger than its size!”

Assumptions

We should work with the best
We should increase PoS and grow the pie to earn the money

Partner of Choice



1. Trustworthy

2. Value adding

3. Knowledge & Experience

- Knowledge / Experience / Skills

4. High performer

- Various mutual cooperation model

- Licensing-in / -out
- Collaboration Research & Development Licensing
- Joint Venture Strategy
- M&A
- Etc

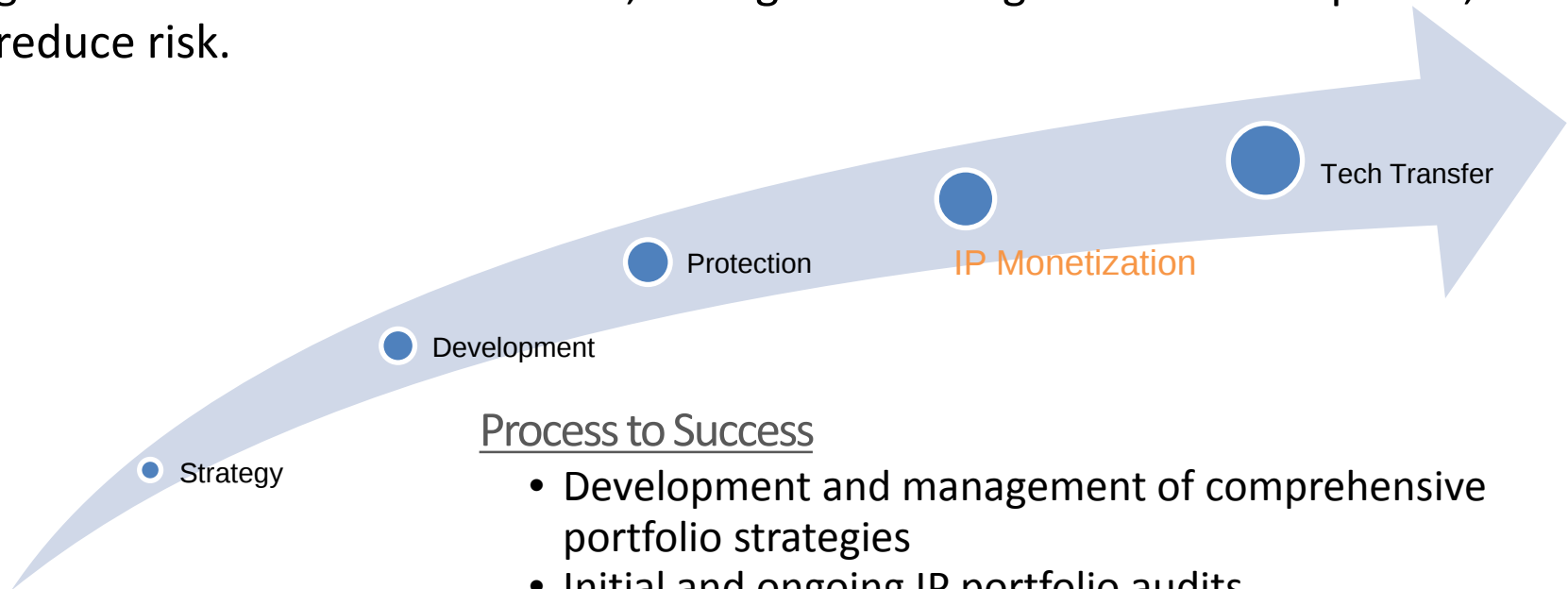
Key Success Factors for Technology Commercialization

- Right technology
- Speed is important!
- Be the best!
- Quantity
- Technology Development
- Right Market
- Deal Optimization
- Work with the best!
- Quality
- Technology Disclosure

3. IP Monetization Strategy

IP monetization

Companies with patents and other intellectual property assets can choose from a wide array of methods to generate economic returns from their IP portfolio with a relatively small investment. Leveraging these assets can generate new revenue streams, strengthen strategic control over profits, and reduce risk.



Process to Success

- Development and management of comprehensive portfolio strategies
- Initial and ongoing IP portfolio audits
- Prior art searching and patentability and validity analysis
- Legal opinions (patentability, freedom-to-operate, etc.)
- IP litigation (patent, trademark, domain name, etc.)
- Due diligence for business transactions
- Licensing or collaboration agreements, etc

How to monetize patents

I. Via pure licensing and sales of patents

II. Via assertive licensing and sales of patent

III. Via M&A (stock transfer) and IPO of companies

Which one looks better? In English?

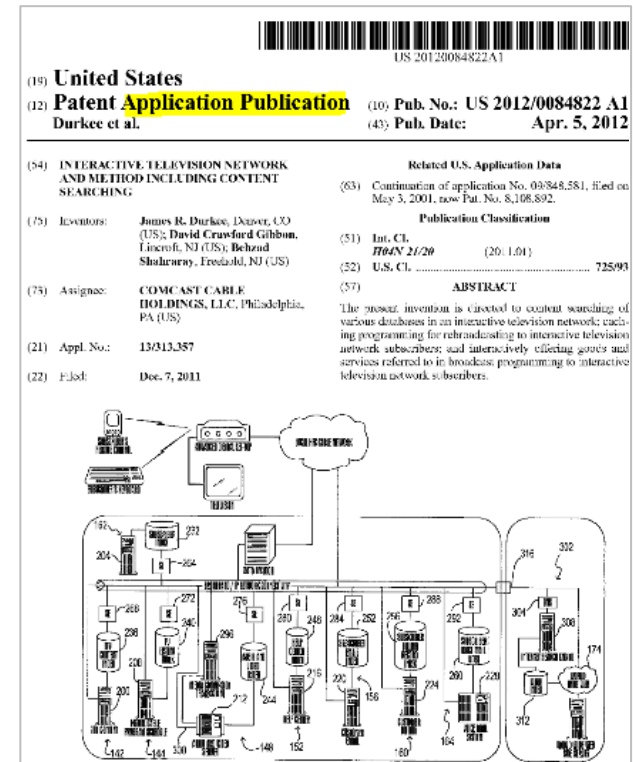


VS

Salute Kosher Restaurant		
63-42 108 Street, Forest Hills, NY 11375 (718) 275-0860 "We Deliver"		
Salads		
Fresh Homemade Salad	Small	3.50
	Large	5.50
Asiatic-Chick (Tomatoes & Red Onions)		5.50
Korean Carrot		5.00
Pickled Vegetables "Assorti"		5.50
Armenian Pickled Cabbage		4.00
Marinated Mushrooms		5.00
Home Made Hummus		4.50
Home Made Potage/Smoothie		4.50
Tahini		4.00
Octar (Marinated Mini-Eggplant)		4.50
Cabbage Salad		4.00
Tzatziki Sauce		1.00
Soups		
Choriza (Bryth with Lamb & Beef)		4.00
Lagman (Noodle Soup)		4.50
Pulmon (Meat Ravioli)		4.50
Borsh with Dumplings (Meatballs)		4.00
Oh-Patche (Veal Legs)		6.00
Nachich (Germak (Lamb, veal, tails with chick peas))		6.00
Appetizer		
Choronos (Crispy)		1.50
Lilike Marla (Home Made Dumplings)		1.50
Samosa (Home Made Potatoes)		1.50
Astori Pilaf		7.00
Marin Carish		5.00
Nami Tiki		2.00
National Bread		2.00
French Fries (garlic & greens by choice)		5.00
Assorted Fish		3.99
Lunch		15.00 - 25.00
Shish-Kebab en Charcoal		
Lamb-Kebab		2.50
Lamb-Ribs-Kebab		3.50
Lamb-Breast-Kebab		3.00
Beef-Kebab		2.50
Beef-Kebab (Special Cut)		3.50
Lula-Kebab		2.25
Chicken-Kebab with Bones		2.50
Dumless Chicken-Kebab		3.00
Veal-Liver-Kebab		3.50
Chalokhuch (1 piece Lamb Chop)		4.00
Khorovak-Kebab (Veal Sweet-Bread)		4.25
Sallam-Kebab		4.00
Sadass-Kebab		5.50
Vegetable-Kebab		2.50
Zhask-Kebab (Lamb-Fat)		2.00
Platters		
Serving of two platters of Kebab, side salad, onion dressing and choice of meat potato or french fries		
Lamb-Kebab		10.95
Lamb-Ribs-Kebab		10.95
Lamb-Breast-Kebab		9.95
Beef-Kebab		10.95
Beef-Kebab (Special Cut)		11.95
Lula-Kebab		9.95
Chicken-Kebab with Bones		9.95
Dumless Chicken-Kebab		10.95
Veal-Liver-Kebab		11.95
Khorovak-Kebab (Veal Sweet-Bread)		12.95
Chalokhuch (Lamb Chop)		13.95
Sallam-Kebab		12.95
Sadass-Kebab		14.95
Vegetable-Kebab		9.95
Beverages & Dessert		
Green Tea/Black tea in Kettle		2.00
Coffee (Turkish Style)		2.50
Borjomi		2.50
Smagly Iced Tea		2.00
Soda		1.50
Seltzer 1 Liter		2.25
Lemonade		1.75
Syring Water		1.50
Fresh Carrot or Apple Juice (by glass)		3.00
Baklava		2.00
Steak en Charcoal		
Grilled Chicken		12.95
Grilled Salmon		15.95
Grilled Tilapia		14.95
Lunch Special served Mon-Fri 12PM - 4PM		
One Chicken-Kebab or Lula-Kebab, french fries, fresh salad and soup of the day		
		6.95

Best way to maximize profit

- I. License out issued patents
- II. License out pending applications
- III. License out know-hows



Most important factors to investors

- I. Your people
- II. Your business plan
- III. Your technology (whether IP is secured or not is the key!)



Tips for successful IP monetization

“Like Americans in America”



Tips for successful IP monetization

[Q1] Obvious?

- You have found that combining compound X with compound Y has a anti-balding effect.
- The preceding document P1 states that compound X has anti-balding effect.
- The preceding document P2 states that compound Y has a anti-balding effect.
- Can you get a patent?

Tips for successful IP monetization

[Q2] Obvious?

- You have developed a way to treat disease Y by administering compound X.
- In the preceding document P1, 400 compounds represented by the chemical structural formula A are described. One of the 400 compounds is compound X.
- In the preceding document P2, the compounds listed in the preceding document P1 have therapeutic effects on 50 diseases. One of these 50 diseases is disease Y.
- Can you get a patent?

Let's cooperate mutually!

Thank **YOU**

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