

# Technopreneurship & the Market Challenge

*Perspectives from Investors*

By Zaid Hamzah

3 Oct 2012



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## About Zaid Hamzah

- **Advocate & Solicitor, Singapore**
- **Solicitor, England & Wales**
- **Author of 8 books** including “Intellectual Property Law & Strategy” “Creating Value From Technology Innovation” (other 6 books on Strategic Legal Risk Management, Electronic Security Law, Information Technology Contracts, Biotechnology, Biomedical Science Law, Private Equity and Venture Capital)

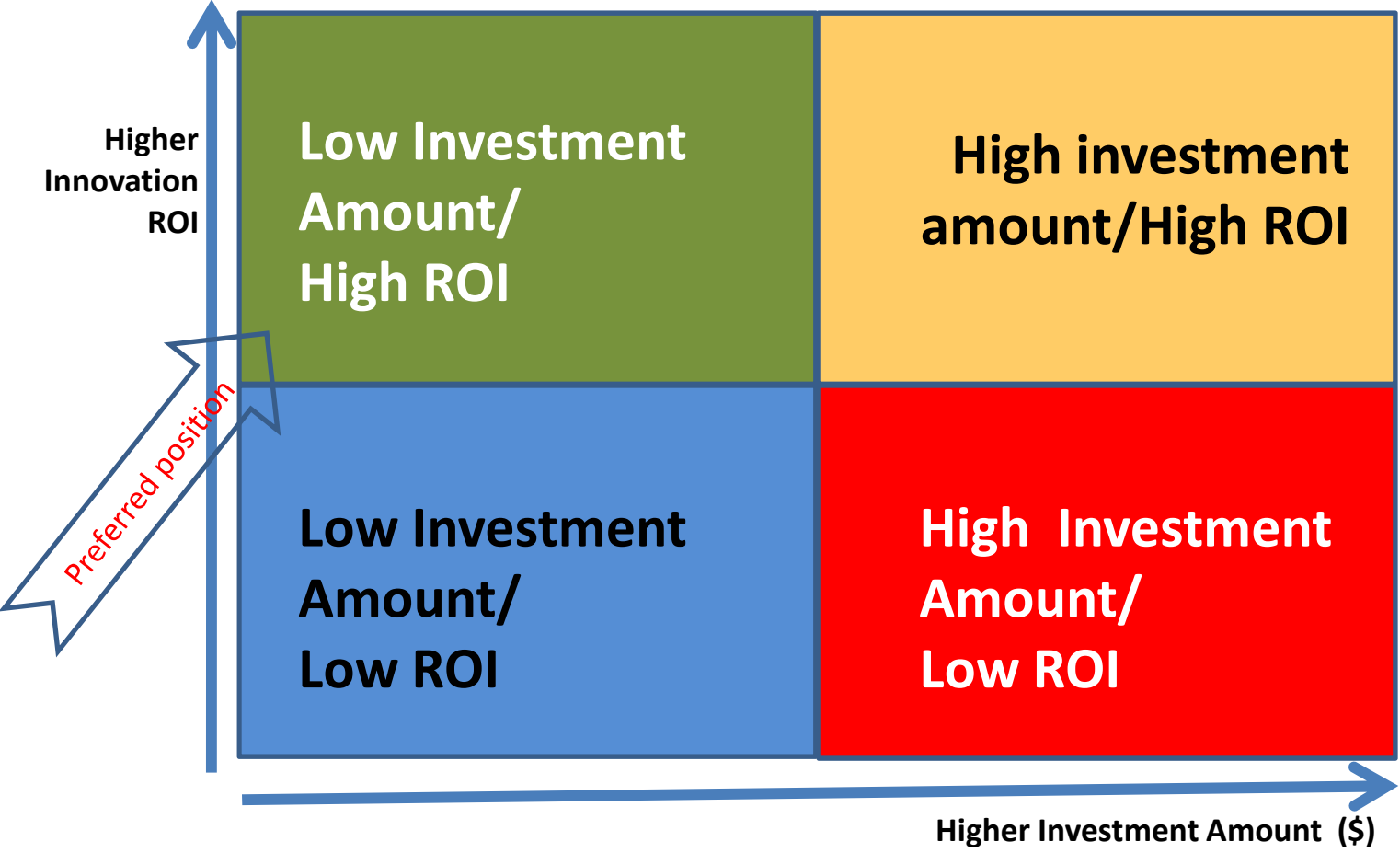
Over 26 years of professional work experience including:

- Director for Intellectual Property at Microsoft, Asia Pacific,
- Chief Legal, Regulatory & Compliance Officer, Telekom Malaysia
- Founder of software company, i-Knowledge Technologies
- Principal, SLG Consultants (regional business & investment consultancy)
- Lawyer, Khattar Wong & Partners (law firm in Singapore)
- Singapore Government Service



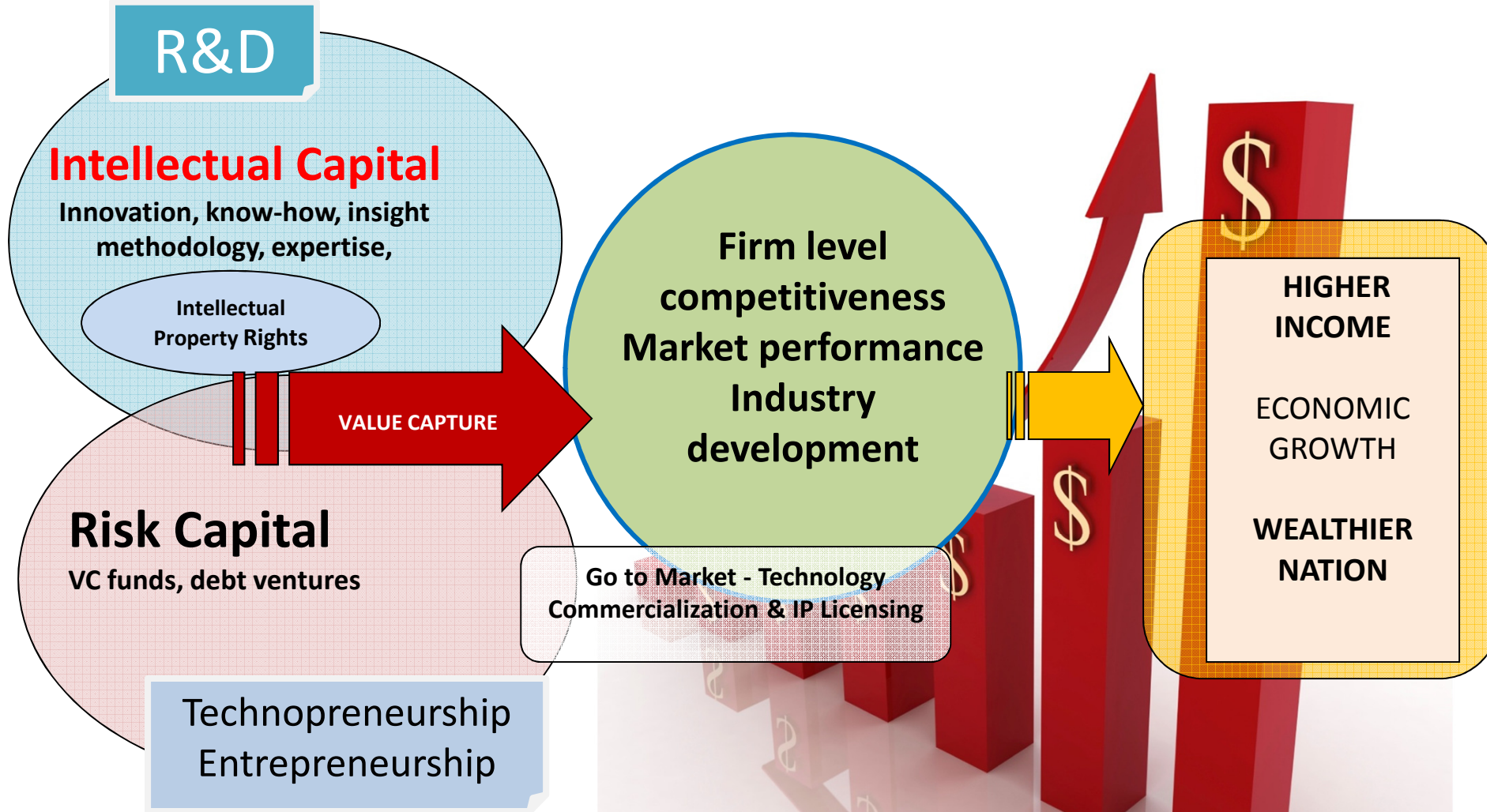
**Present Role: Advisor to governments, enterprises, research institutions on IPR, technology commercialization, IP-based financing, intellectual capital management**  
**Entrepreneur: [www.intellectualfutures.com](http://www.intellectualfutures.com)**

**RETURN ON INNOVATION INVESTMENTS (ROI<sub>2</sub>)**



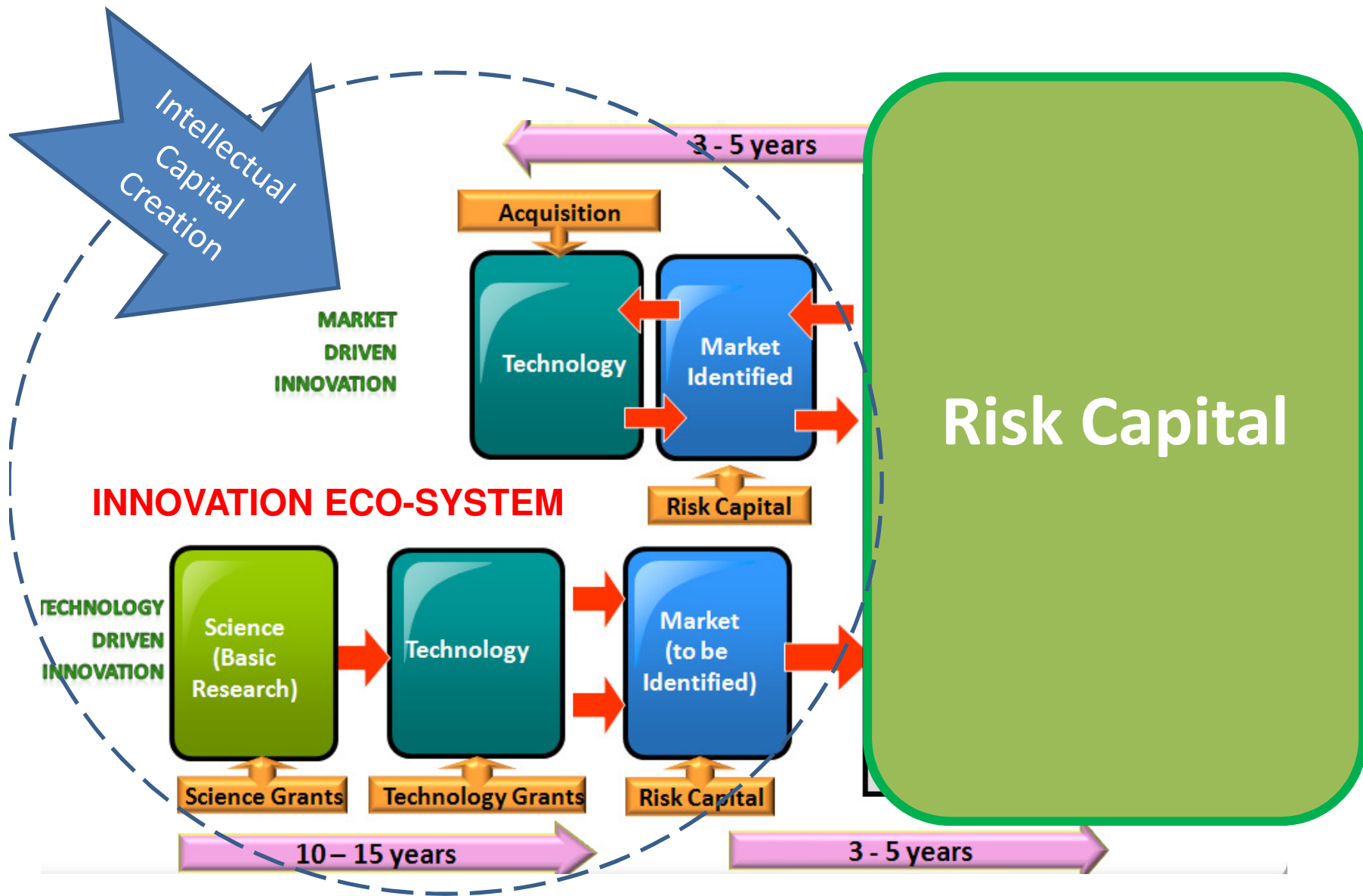
It is all about better yield, better value from investment

*Value drivers, levers and enablers in the economic “food chain”*



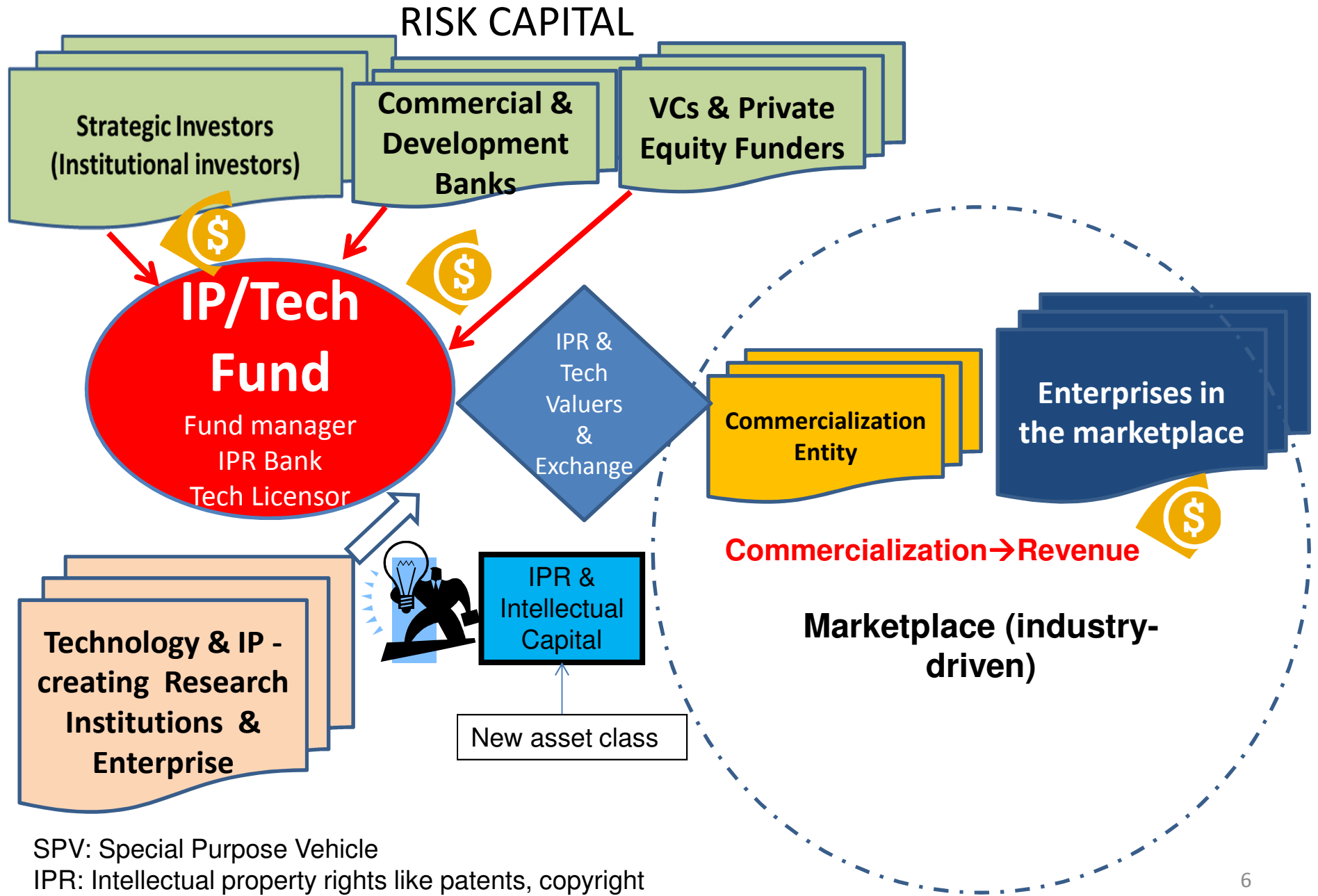
Strategic Economics: Finding the points of value calibration

# The Equation: Risk Capital & Innovation



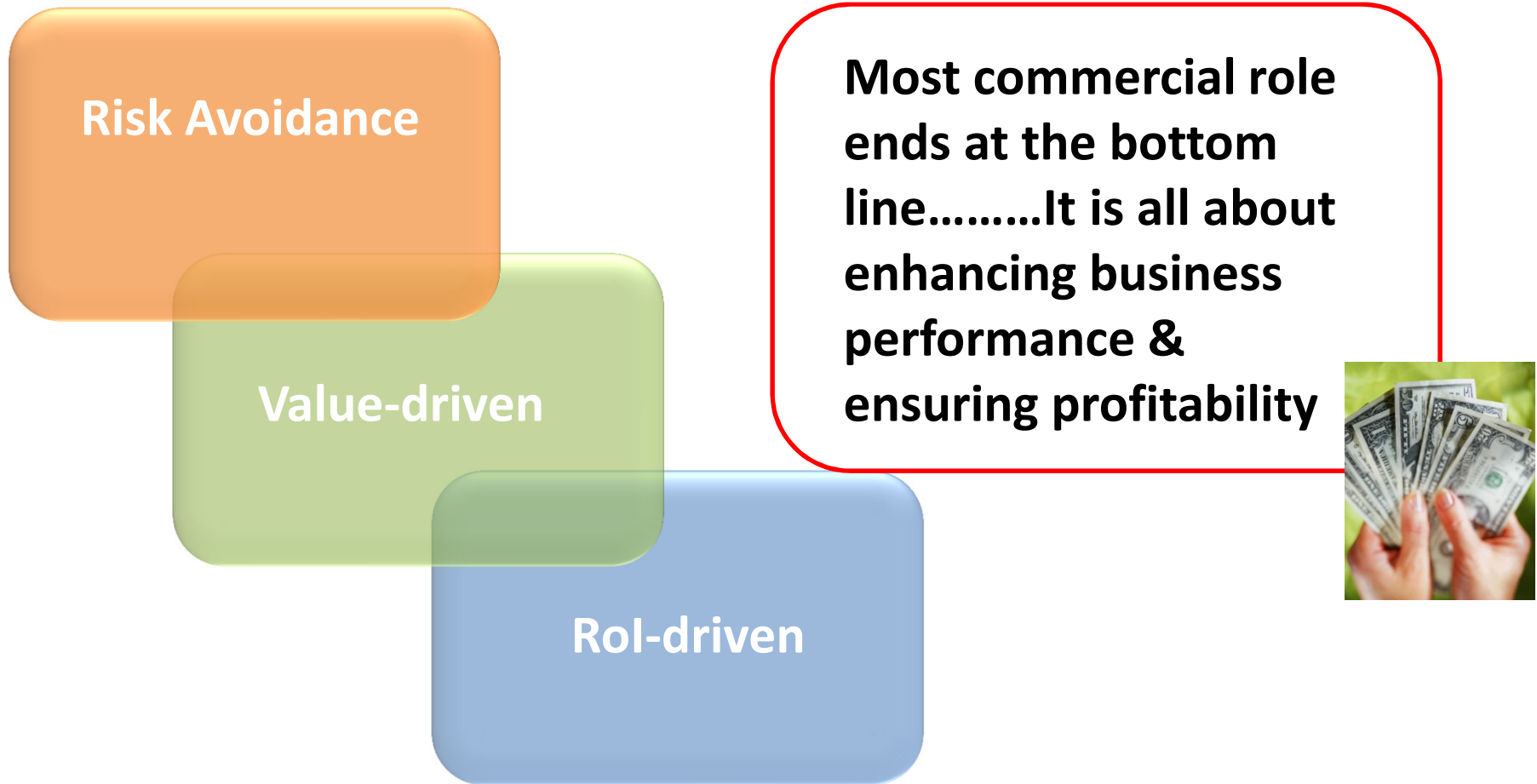
Slide adapted from slide from Malaysian Ministry of Science Technology & Innovation

# INVESTMENT VALUE CHAIN : TYPICAL DEAL FLOW



SPV: Special Purpose Vehicle  
 IPR: Intellectual property rights like patents, copyright

## Broad Approach in Strategy & Program Design



# **IP-BASED INVESTMENT**



**Identify value drivers,  
enablers & levers**

**Strategically manage the  
investment value chain**

**Recognize that  
investment really has  
no “end destination”  
in a globalized value  
chain**



## **Investment Value Chain**

**Constantly and  
dynamically move  
along the value chain  
to capture new  
sustainable value**

**Seek intellectual  
capital investment  
that yield maximum  
economic impact (KBE  
angle)**

**Have deeper  
understanding of industry  
& business economics**

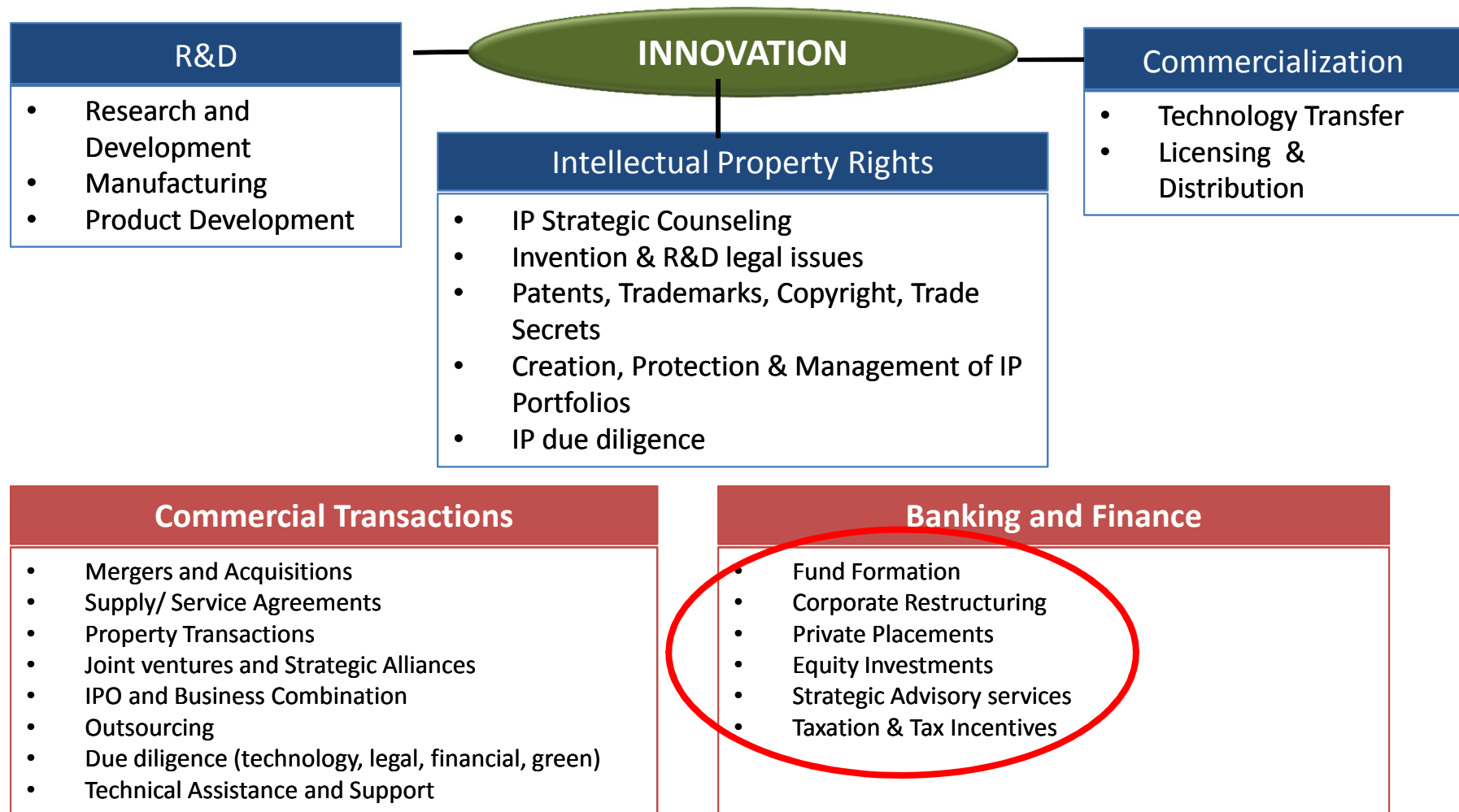
# IP Finance

1. IP as source of revenue – licensing, sale
2. IP as asset to back lending/investment
  1. IP collateralization
  2. IP Securitization
3. IP as an asset to be capitalized (part of paid up capital – IP as equity)

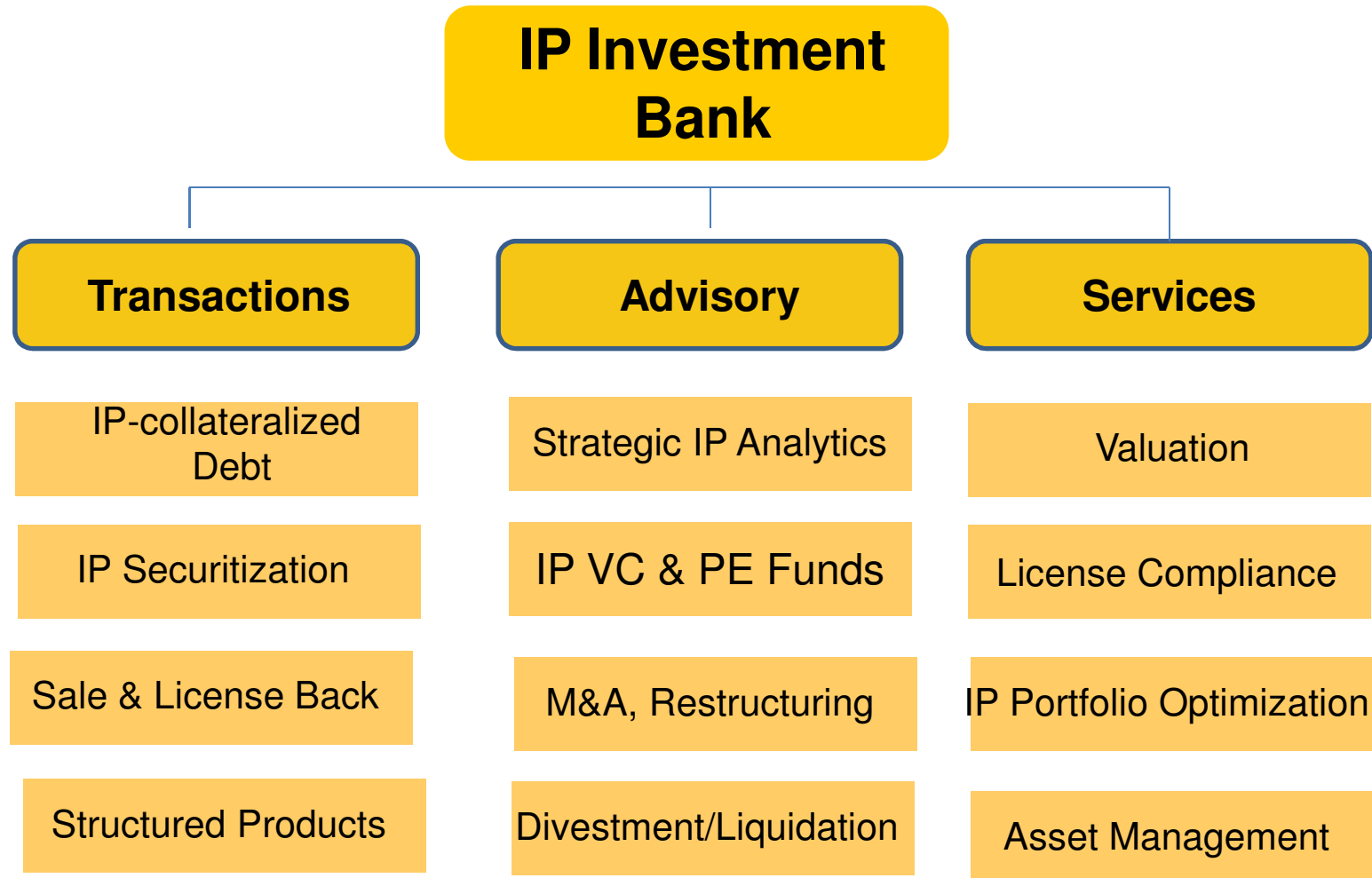
# IP-Based Investment

1. Direct investment into company
2. Fund (eg Private Equity/Venture Capital)
3. Funds of Fund

# Innovation, IP & Financing



# What an IP investment bank does



# IP Portfolio Management

- ***IP Portfolio Review & Categorization***
- ***Portfolio Development***
- ***Identification, Assessment & Acquisition of Target IP Portfolios***
- ***IP Transaction Due Diligence***
- ***Monetization & Commercialization Strategies***



# Examples of an IP Investment Banking Player

The screenshot shows the top portion of the Ocean Tomo website. On the left is the Ocean Tomo logo, which consists of a stylized globe icon and the text "OCEAN TOMO" above "INTELLECTUAL CAPITAL EQUITY". To the right of the logo is a search bar labeled "AFFILIATE SITES". Below the logo and search bar is a market data bar with two entries: "Ocean Tomo Patent Growth Index (^OTPATG) \$6062.477 ↓-2.46%" and "Ocean Tomo 300 Patent Index (^OTPAT) \$6477.168 ↓-2.47%". Below the market data bar is a row of five image-based service categories: "EXPERT SERVICES" (a woman at a microphone), "RESEARCH" (a hand pointing at a graph), "INVESTMENTS" (a candlestick chart), "RISK MANAGEMENT" (a chess knight), and "TRANSACTIONS" (a hand holding a document). At the bottom of the page is a dark navigation bar with the links: "HOME", "ABOUT", "PRODUCTS & SERVICES", "MEDIA ROOM", and "CONTACT".

EXPERT TESTIMONY  
**ALERT**

**WELCOME TO OCEAN TOMO**  
The Intellectual Capital Merchant Banc™ Firm

# Inflexion Point is an Intellectual Property Investment Bank

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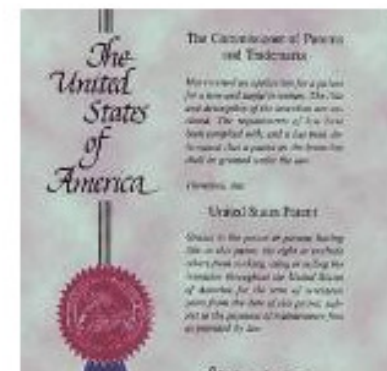
Search

We represent technology companies and institutional investors in the acquisition and sale of patent portfolios having *strategic value* and in the sourcing and execution of IP-intensive M&A transactions.

**Inflexion Point**<sup>®</sup>  
New Directions in IP Strategy

From our offices in Silicon Valley, our clients worldwide rely upon us to facilitate transactions that:

- ▶ Enhance the strength of their patent portfolio as a defensive shield against litigation
- ▶ Establish freedom to operate in new technology markets
- ▶ Monetize their patents through a managed multi-stage private auction process
- ▶ Leverage the strength of their IP position in corporate M&A transactions







## Intellectual Property Marketplace

### Welcome

NextTechs Technologies LLC is a **Technology Investment Bank** that intermediates the acquisition and sale of Intellectual Property. We are in the business of monetizing patent assets. Our goal is to extract maximum value for our clients. Our sole focus is on transaction execution.

### A Global Market

Reflecting the international nature of patent demand, NextTechs serves markets in Europe, Asia and North America with relationships domiciled in the United Kingdom, France, Germany and Scandinavia in Singapore, Malaysia, Korea, Japan and Taiwan and in all parts

### Domain Expertise

- Computer Hardware / Software
- Consumer Electronics
- Data Base Management
- Digital Rights Management
- Displays
- eBusiness / eCommerce
- Imaging Systems
- Internet
- Location Based Services
- Material Science

# Examples of specifics

- Improve matching of revenues and costs through recognition of potential liabilities
- Enhance profitability forecasts that decrease potential variances between actual and expected performance
- Improve processes and control elements through a standard risk management program
- Tight documentation during the underwriting process, reducing the likelihood of an excessive patent infringement damages award
- Manage risk transfer of excessive liabilities related to patent infringement assertions
- Deter “patent trolls” considering litigation



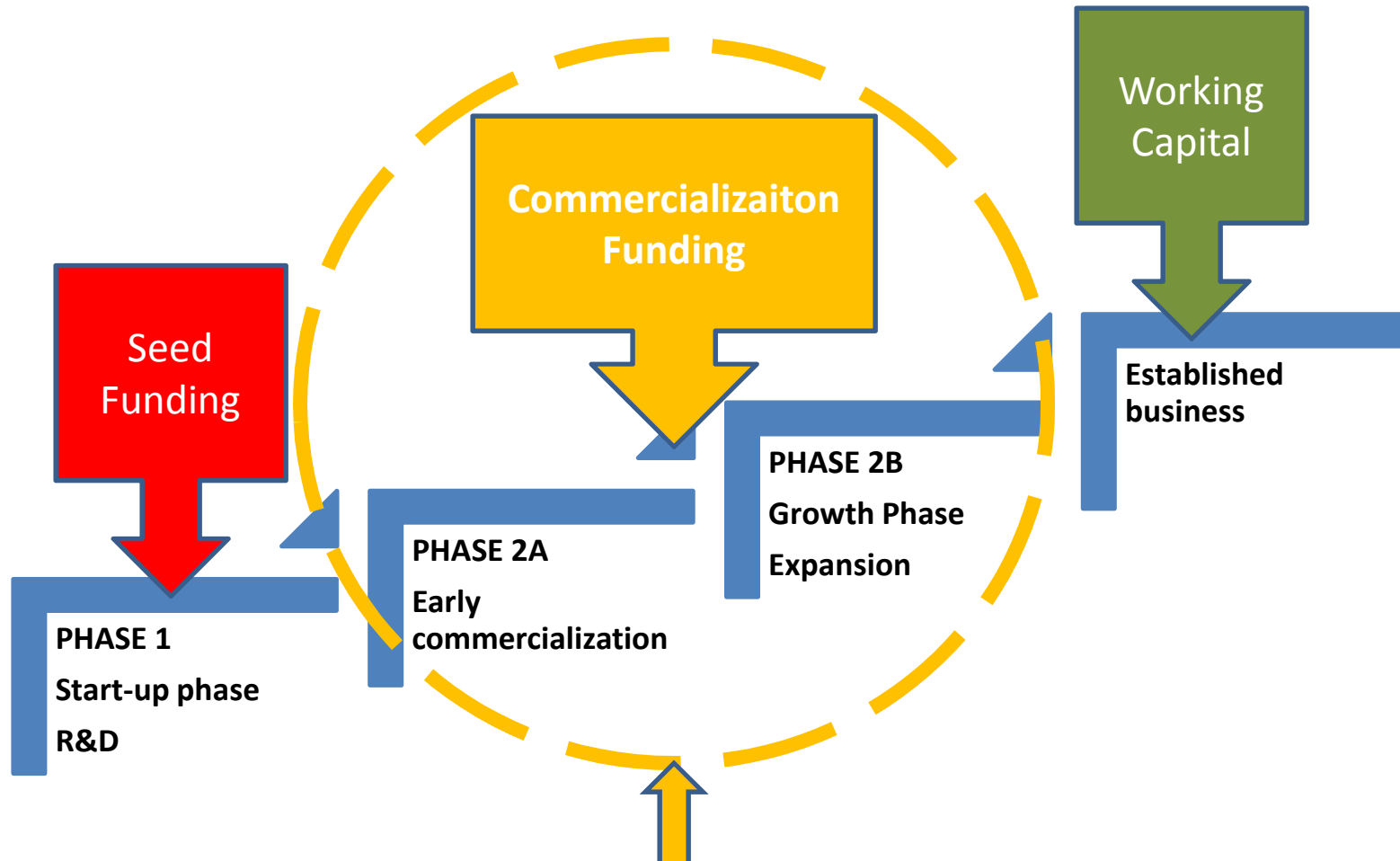
**IP investment  
banking services  
can help improve  
the enterprise's  
profitability, market  
value & returns on  
capital**

# IP Portfolio Management

- ***IP Portfolio Review & Categorization***
- ***Portfolio Development***
- ***Identification, Assessment & Acquisition of Target IP Portfolios***
- ***IP Transaction Due Diligence***
- ***Monetization & Commercialization Strategies***



# Managing the Commercial Risks

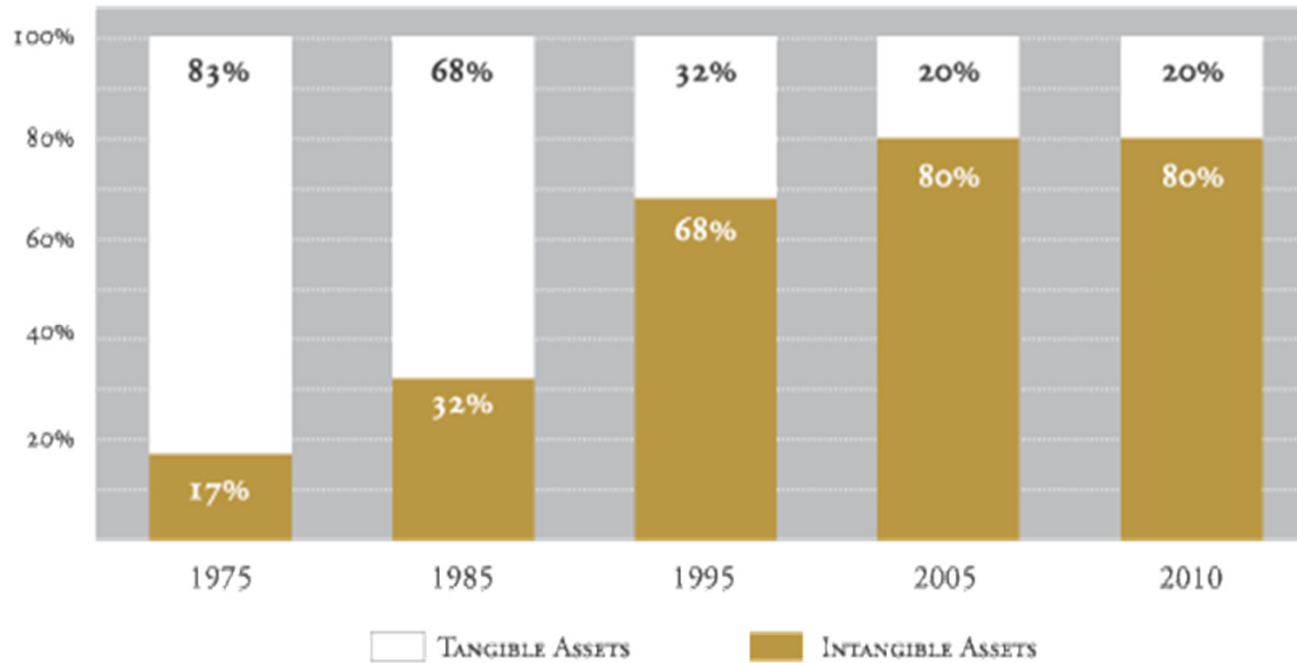


- This initiative will focus only on this phase 2A/B to minimize the commercial risks faced by investors in the “go to market” phase of the R&D life cycle
- Technology screening for the purpose of pooling together of the underlying asset class & robust commercialization will be critical

# SUPPORTING SLIDES

# **Economic Setting & The Big Picture**

### COMPONENTS OF S&P 500 MARKET VALUE



Source: Ocean Tomo

Within the last quarter century, the market value of the S&P 500 companies has deviated greatly from their book value. This "value gap" indicates that physical and financial accountable assets reflected on a company's balance sheet comprises less than 20% of the true value of the average firm. Research from Ocean Tomo, a leading IPR Investment Banking firm, shows that a significant portion of this intangible value is represented by patented technology.

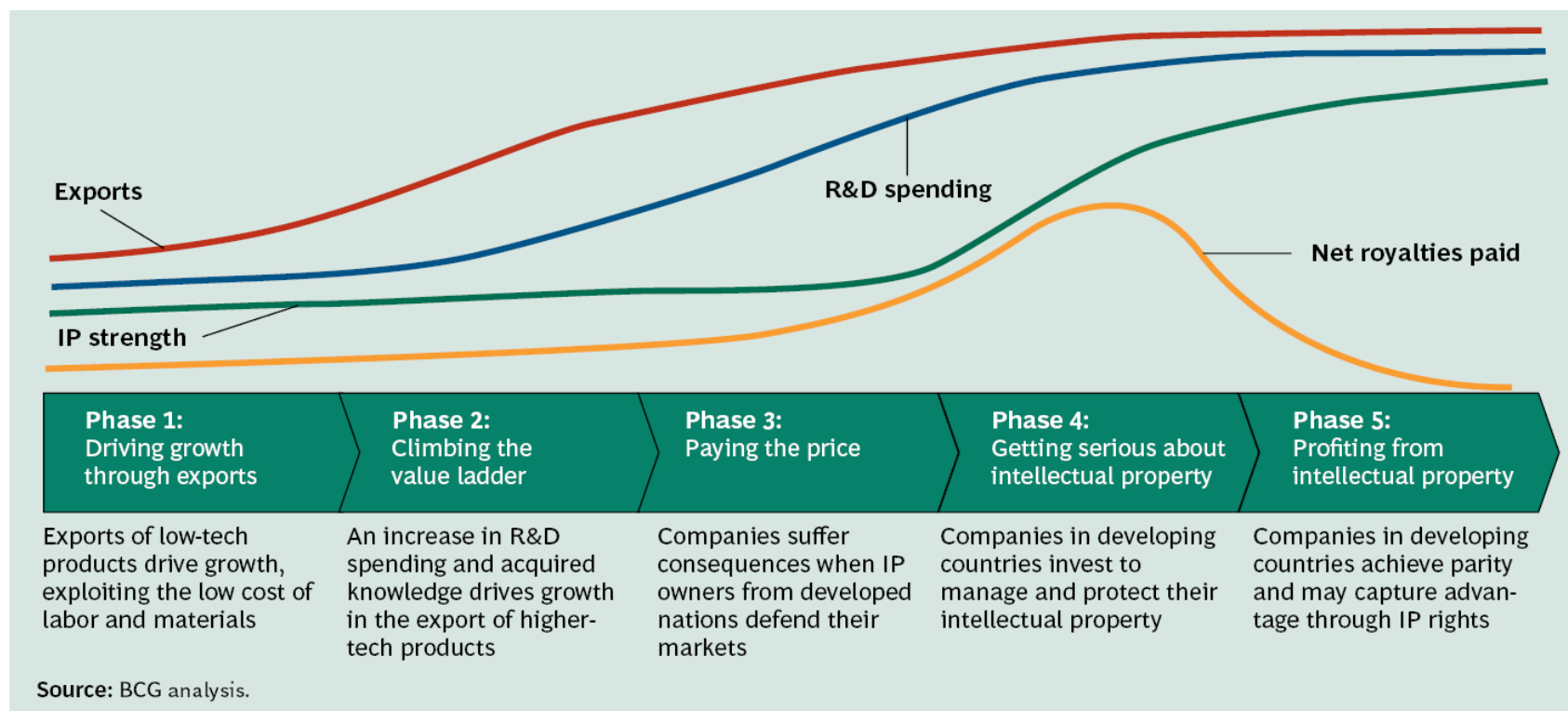
# Strategic Setting

- As economies transition to become more knowledge-based or innovation-driven, intellectual capital will increasingly become a major economic value driver
- Ratio of intellectual capital to market capitalization in US companies grew from 17% in 1975 to 80% in 2005
- Data from the US, Europe & Japan indicates that the more intellectual property a company holds, the higher its valuation.
- Intellectual Property and Technology Investment banks have emerged as key financial players in this new landscape





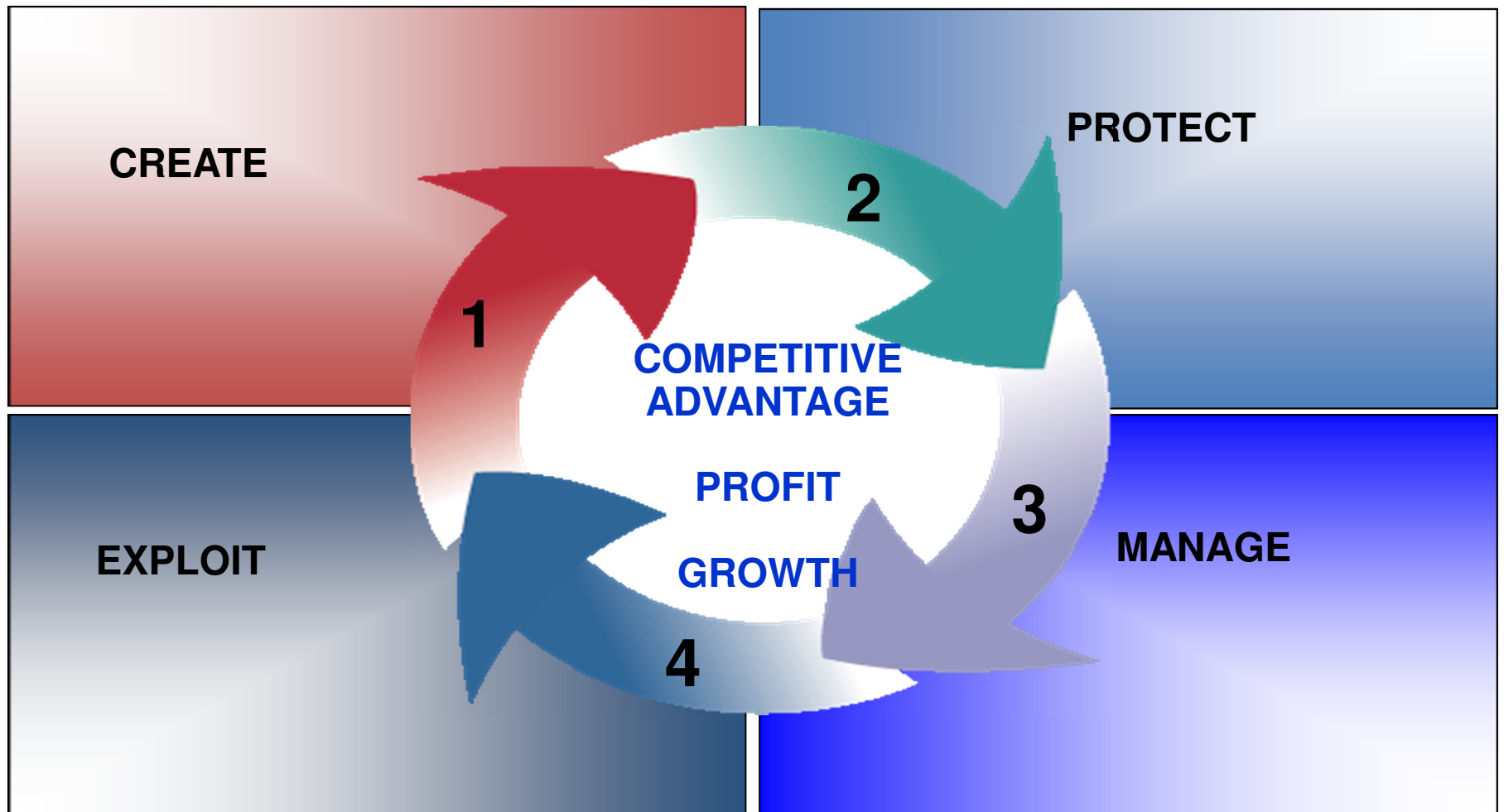
## Economic Transformation: From “IP negative” to “IP positive”



**Japan took 30 years while South Korea took 15 years.**

Source: Tynax presentation slides (Jon Rortveit)

# IP Ecosystem or Value Chain



## On innovation & value creation



*“Innovation is the only limit to growth”*

Bill Gates

*“We certainly have one of the world’s highest quality patent portfolios, and now one of the largest. That is just one measure of innovation. **The challenge for us now and in the future will not be whether or not we can have the ideas and get the patent, it’s whether or not we can convert that into business value in the form of a product that customers really appreciate and will pay for”***



Craig Mundie  
Microsoft Chief Research &  
Strategy Officer

## Some insights from seasoned players on technology innovation



*“Not all innovations make good products, and not all good products build profitable companies”* Kellogg School of Management



*“Usually the technology isn’t the problem but the route to market & how to scale the business.....”*

Darrell Mann, leading innovation management system expert

## Key Lessons from Industry on Technology Commercialization.....



*It is all about creating the revenue pipeline and having a clear path to profitability driven primarily by what the market needs.....*

*But it is not that easy to execute robust marketing programs that locks in value in a sustainable manner*

*The big challenge – how to transform R&D outputs into economic value*

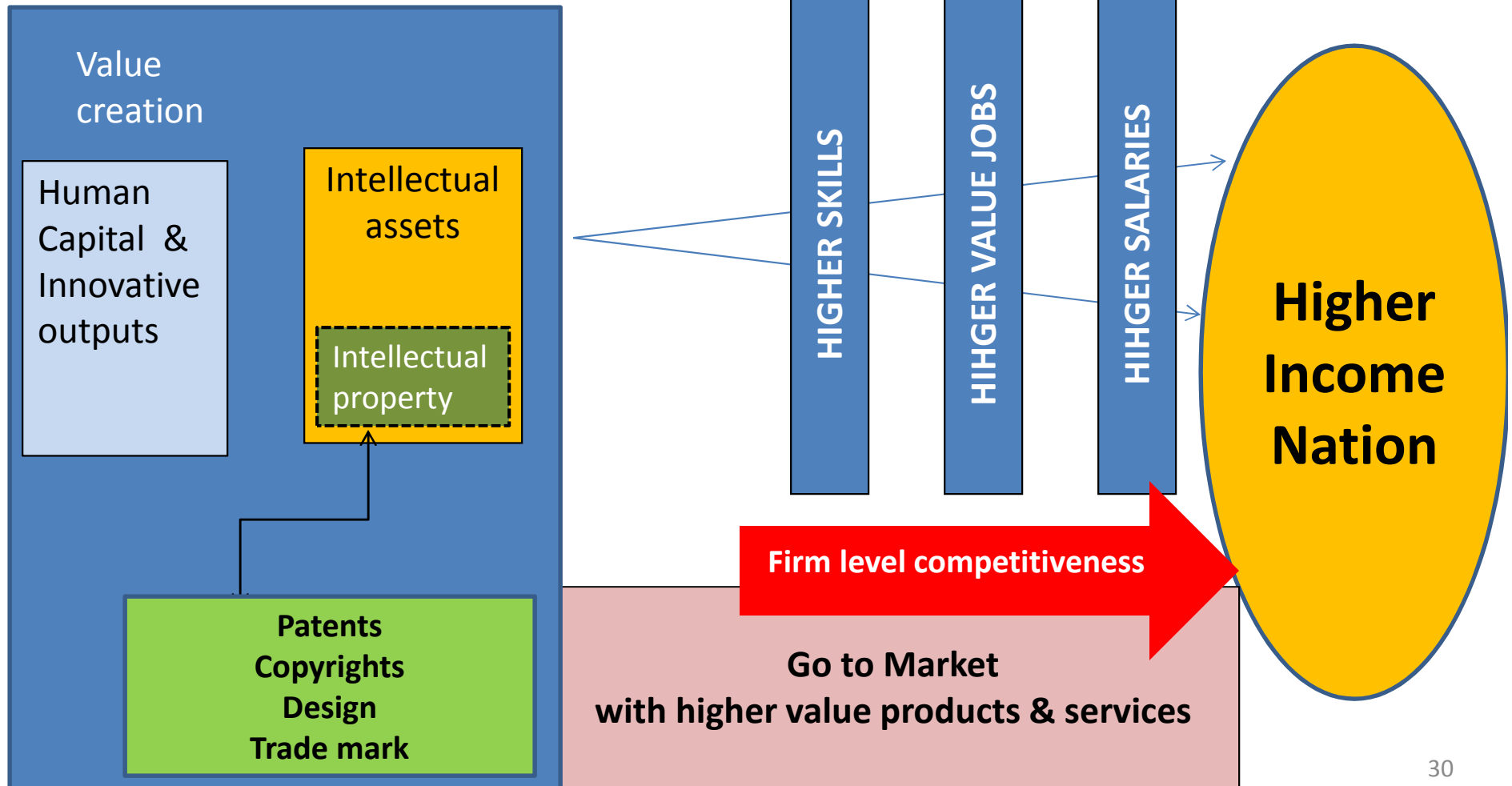
# Economic Model & the New Value Chain

Shift in economic value chain will affect the supply chain

## Intellectual capital

New Value Driver

Desired End State



# Commercial Strategy – *Deep Vs and shallow Ts*

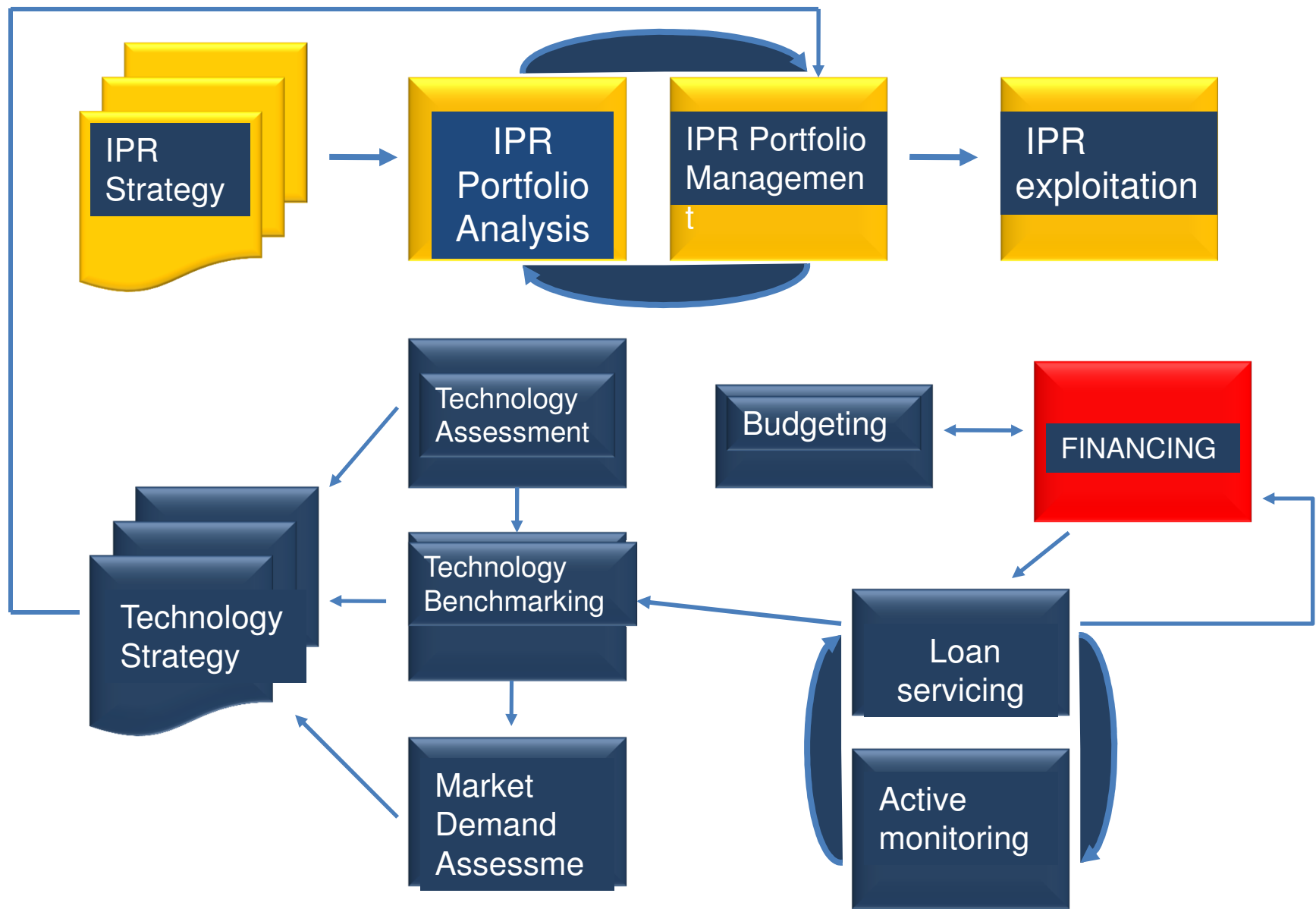
The commercial model should be a mix of many shallow Ts & a few deep Vs – high volume/low margins products & services complemented by a few low volume/high margins ones

Shallow “T”s that represent non cutting edge technologies that meet market demand & can generate sustainable value without the complexity of marketing new technology



Deep V represents the few emerging technologies that meet global ‘cutting edge’ standards

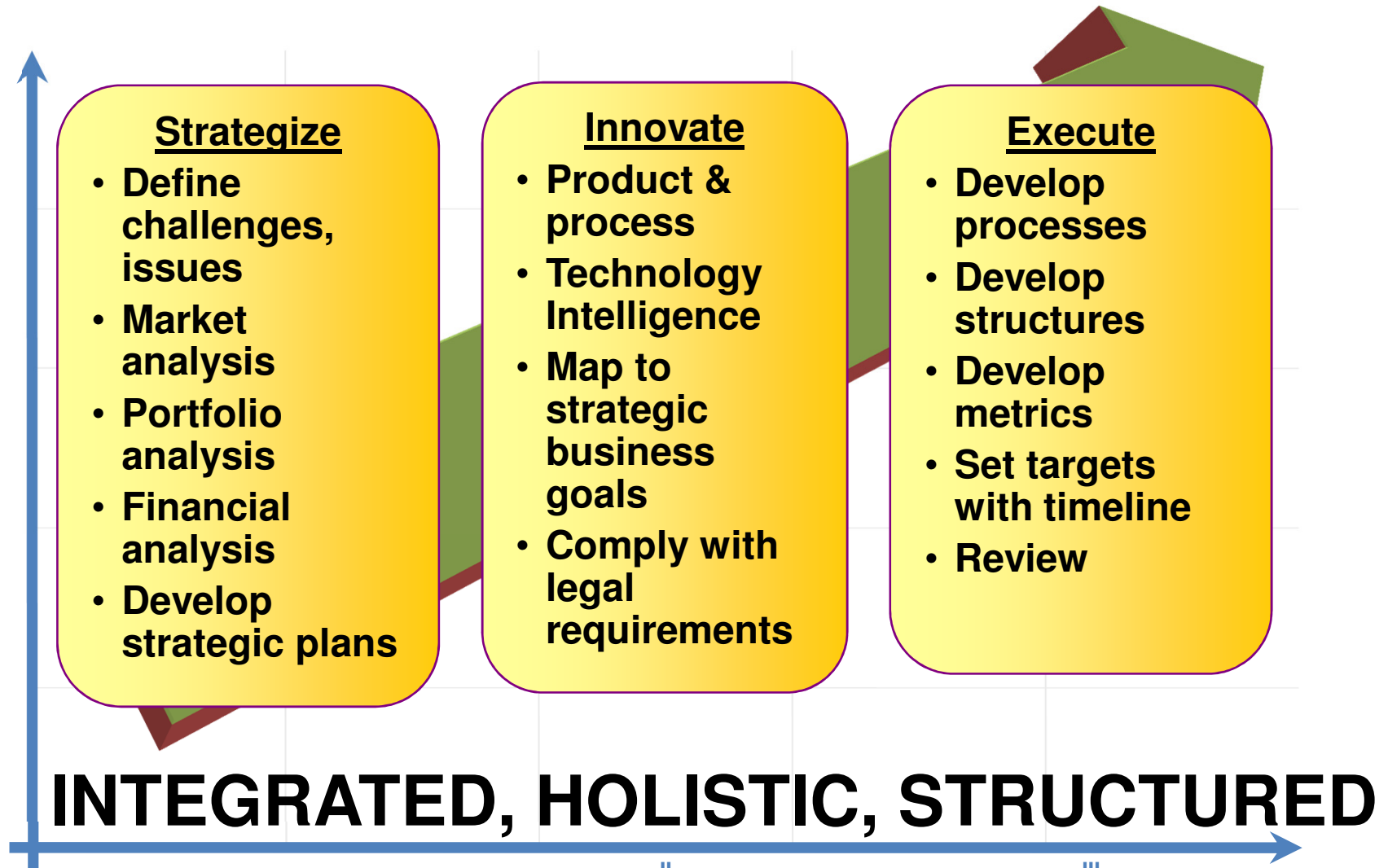




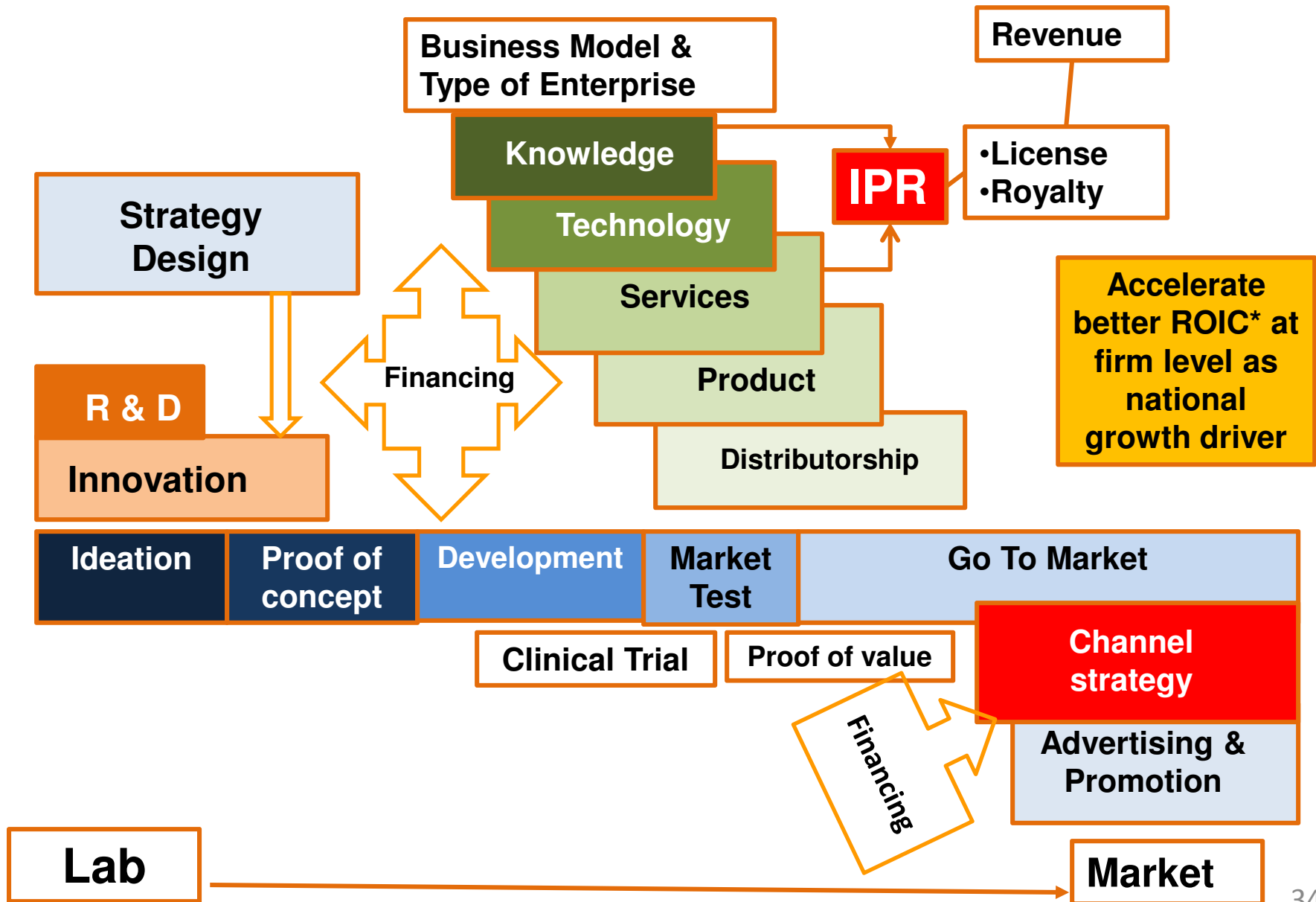
**Parallel IP & Technology Commercialization Streams**



# Strategic IPR Roadmap

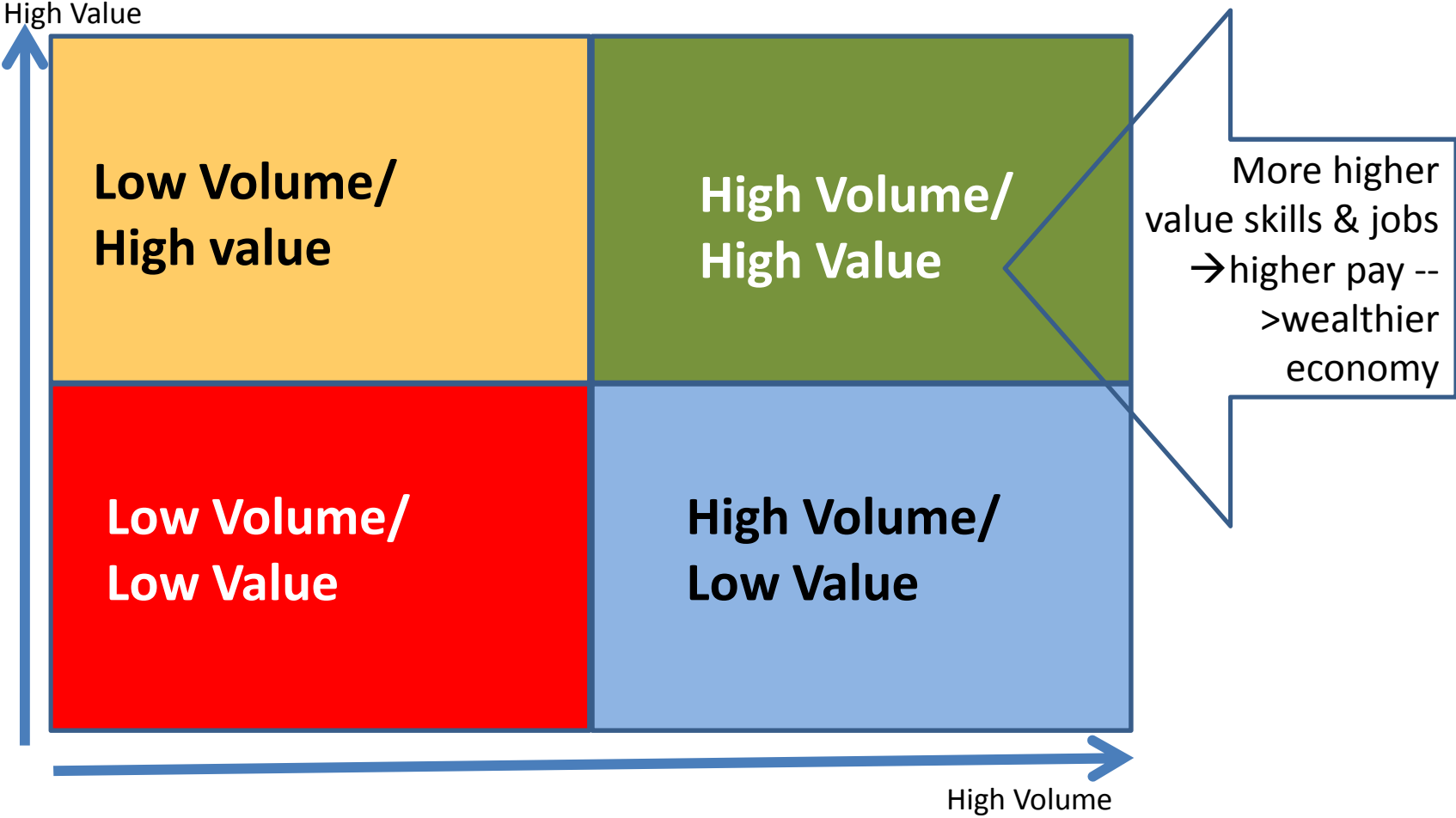


# Value Map for Higher Income Business Eco-system



\*ROIC – returns on invested capital

**Challenge 1: How to leapfrog into the high value/high volume quadrant**



**Challenge 2: How to sustain leadership position & be ahead of the curve**

# Drivers, Enablers, Levers in the Eco-system: Managing the Supply Chain & the Calibration

## Commercial Strategy

Industry economics will determine commercial outcomes – enterprises are driven ultimately by profitability goals & shareholder value creation

Only when enterprises succeed will economies thrive

## Development Strategy & Model

When enterprises succeed, there will be more jobs - when enterprise move up the value chain, higher skills & higher pay will follow

Regulatory environment will impact investment

## Innovation Cycle

Governments invest in R&D but returns on research investment are secured primarily through commercialization by enterprises

Returns on research investments

## Investment Value Chain

Both enterprises & nations invest but enterprises are more critical (as government only facilitates)

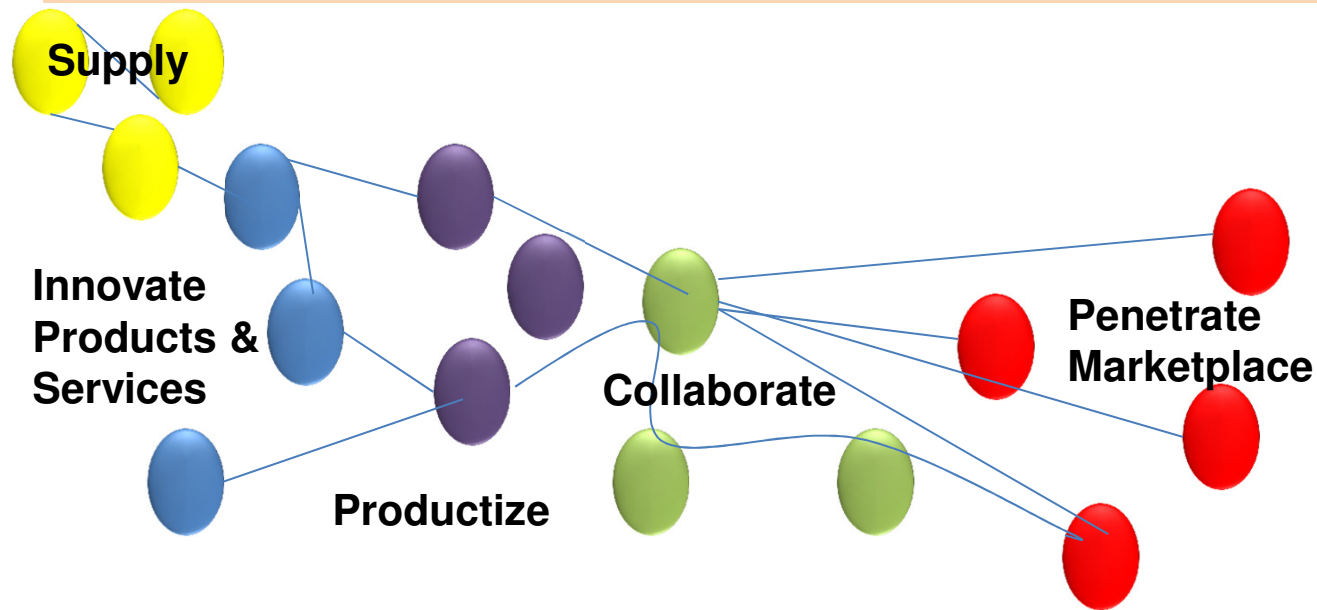
Maximize economic yield

**Value Creation**  
**-Exploit Competitive Advantage**  
**-Maximize economic yields**

## Capturing Value in the Economic Eco-system

### VALUE CHAIN DYNAMICS

Value chain breadth & depth has to be enhanced



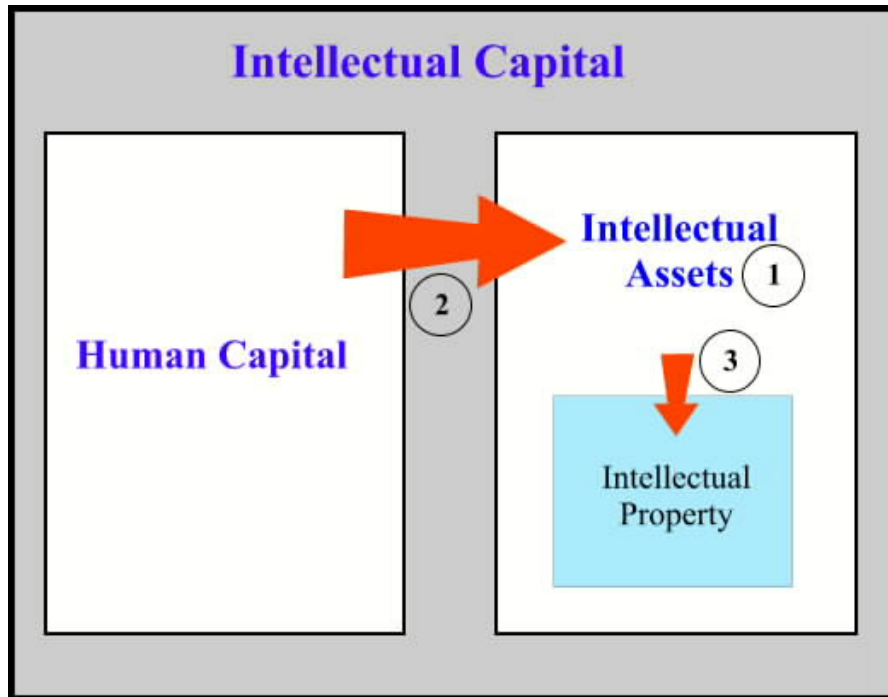
Need to determine actual value drivers, enablers and levers that will have multiplier effect on the economy in a sustainable manner

Need to determine where the nation/state/region is in the value continuum

Once strategic assessment has been made, the rest is execution to ramp up economic growth

## Intellectual Capital is a New Major Value Driver

Intellectual Capital & other “soft” capital are the only sustainable source of competitive advantage



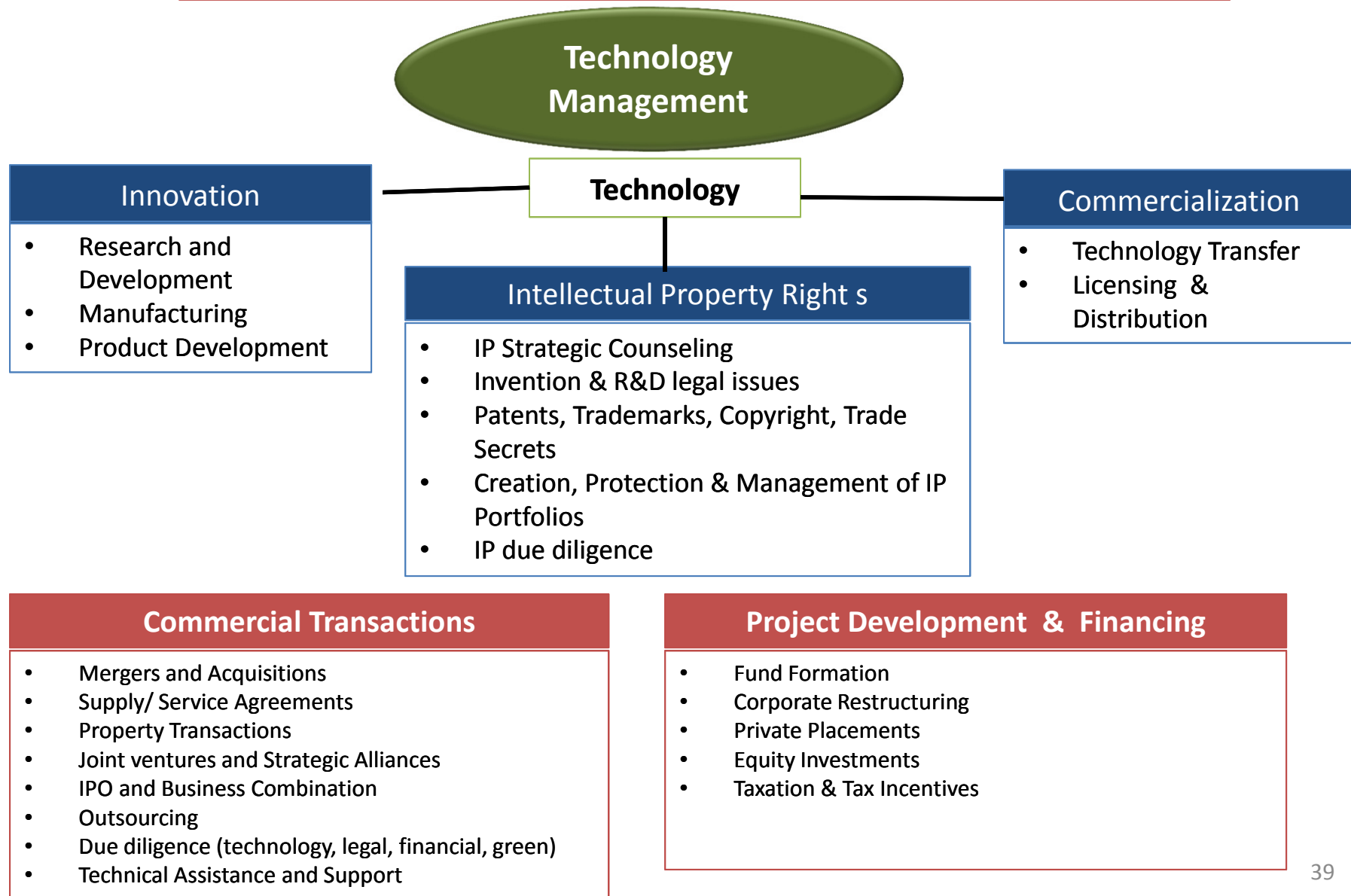
### Strategic Investment in Intellectual Capital Infrastructure

*Unique selling proposition needed to demonstrate end to end value creation from ideas to marketplace (moving beyond static national boundaries)*

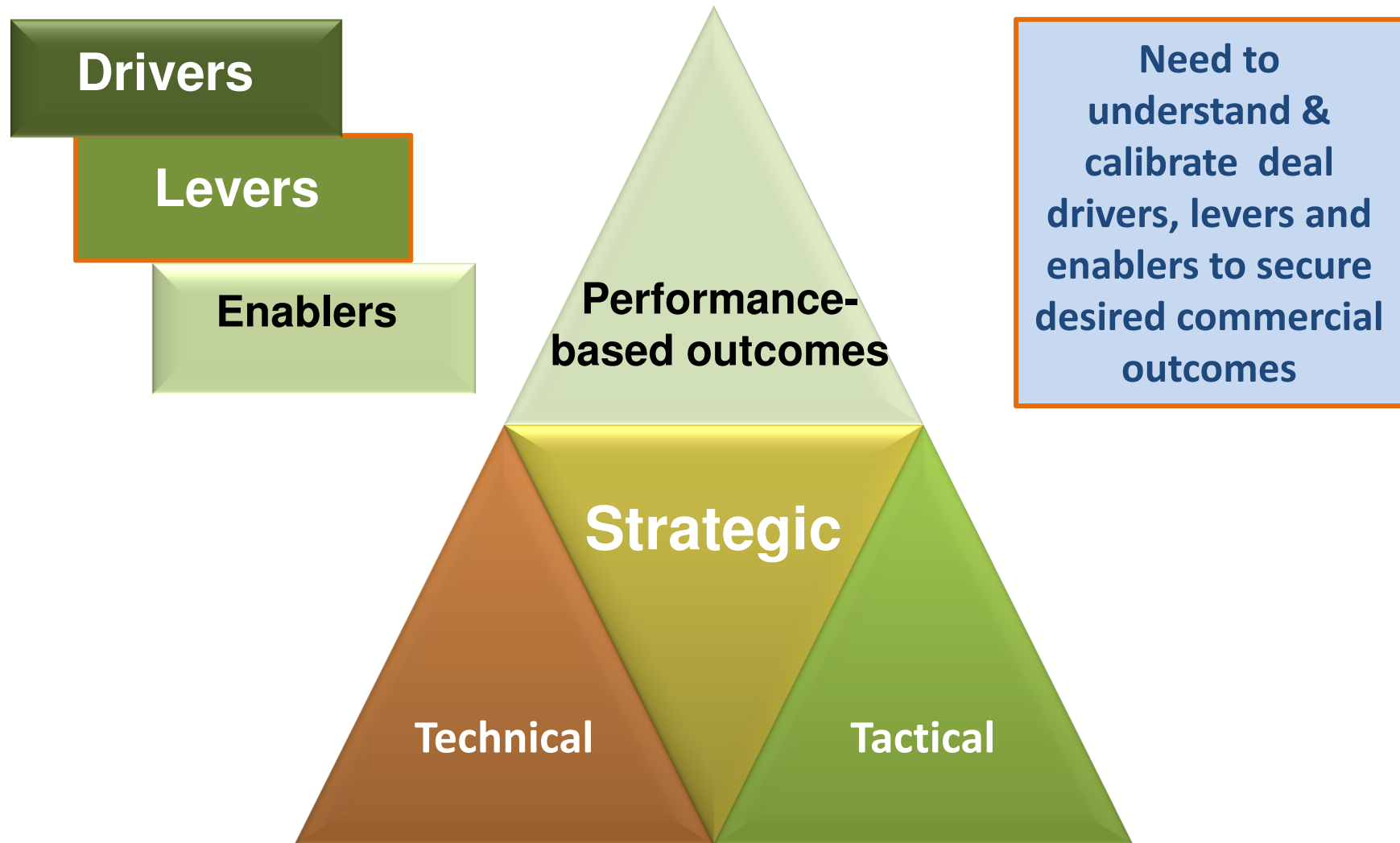
Strategic international/regional collaborative structures driven by intellectual capital must be created and the ***Open Innovation Model*** promoted

Foreign & domestic investment pipeline has to be tweaked, calibrated to enhance intellectual capital value capture and exploitation

# ECO-SYSTEM FOR INNOVATION & IPR



Need to understand & manage commercial dynamics





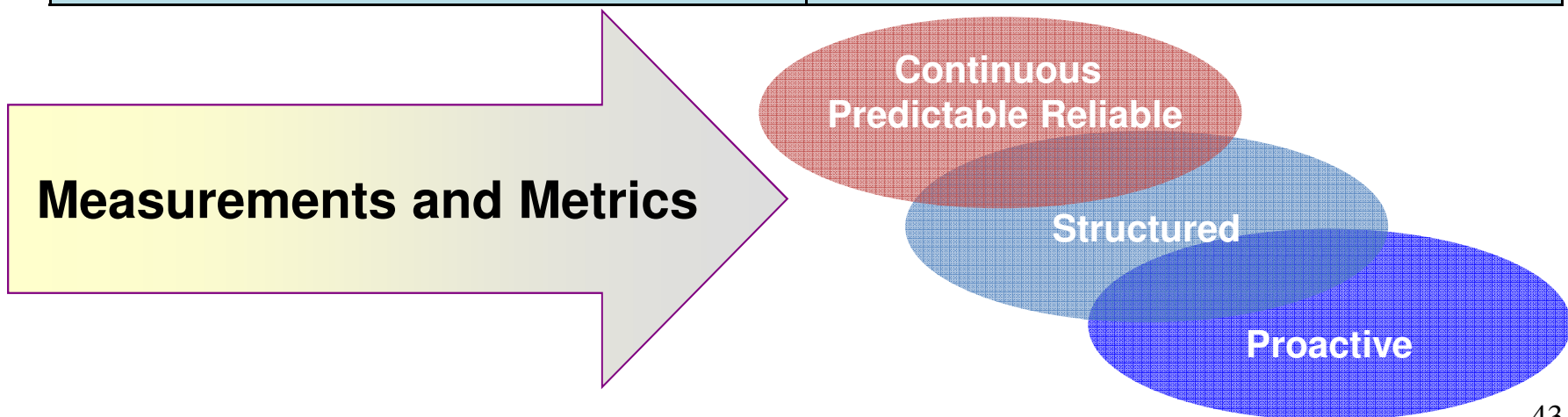
# **IPR Commercialization**

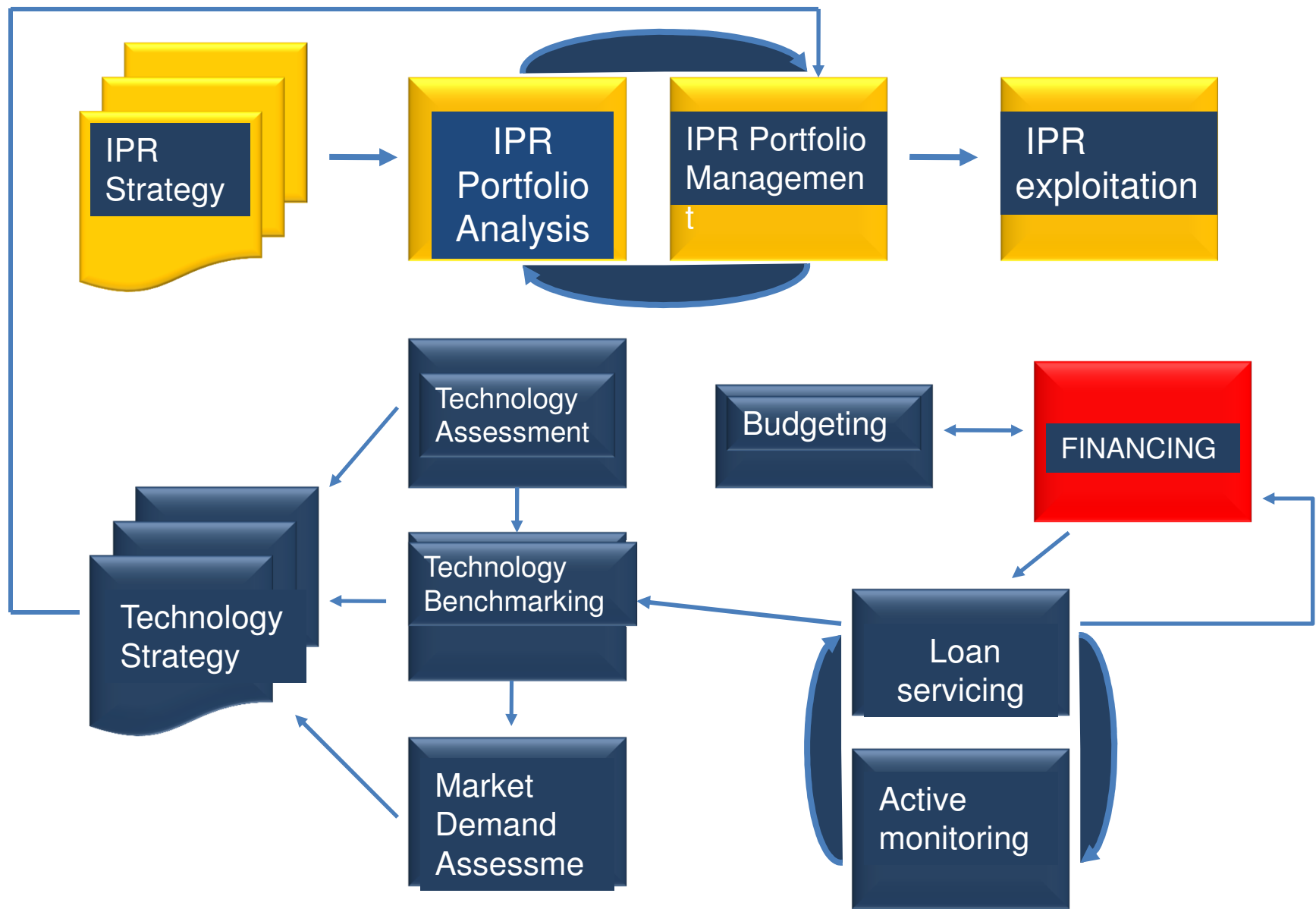
# IPR Activity Mapping

CREATE	PROTECT	MANAGE	FINANCE	EXPLOIT
R&D	Audit	Integrate Corporate Strategy	Valuation of IPR	Licensing
IPR Development	Registration (national & international)	IPR Portfolio analysis	Collateralize	Assignment
IPR Acquisition	Risk Management System	Competitive Technology Intelligence	Securitize	Divestment
Build new IP capability	IPR Litigation	Develop Strategic Plans	Capitalize (paid up capital)	Replicate/ Manufacture
Productize/ Test-bedding	IPR Dispute Management	Develop risk management framework	Raise funds (debt/equity)	Alliances

# Execution Mode & Tools

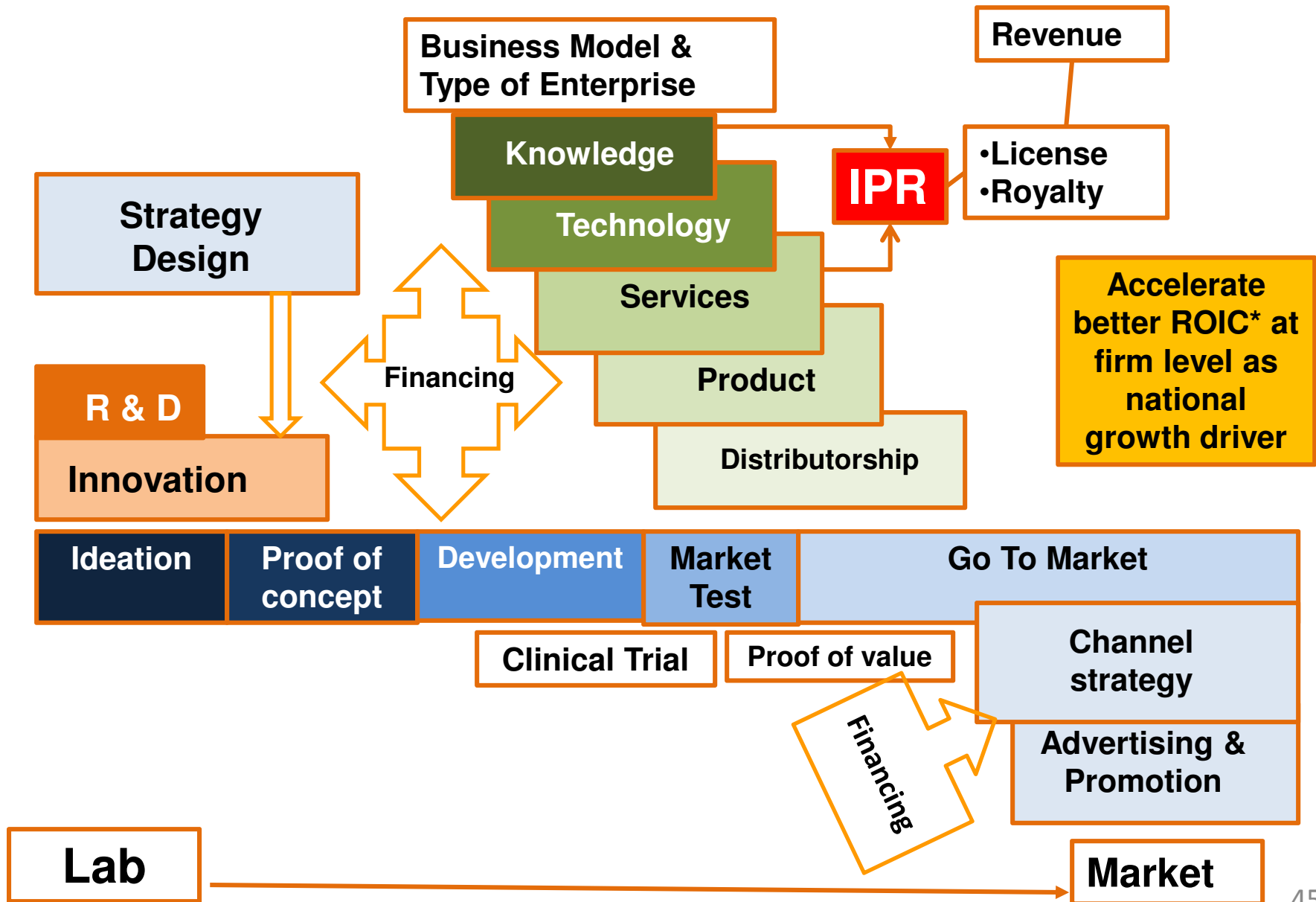
DEFENSIVE	OFFENSIVE
<ul style="list-style-type: none"><li>● Protect your market</li><li>● Sue others</li><li>● Develop blocking measures</li></ul>	<ul style="list-style-type: none"><li>● Develop strategic walls (eg patent wall or thicket)</li><li>● Create new markets through patent filing</li><li>● Form alliances (patent pool)</li><li>● Develop “standards”</li><li>● Trade, exchange</li></ul>





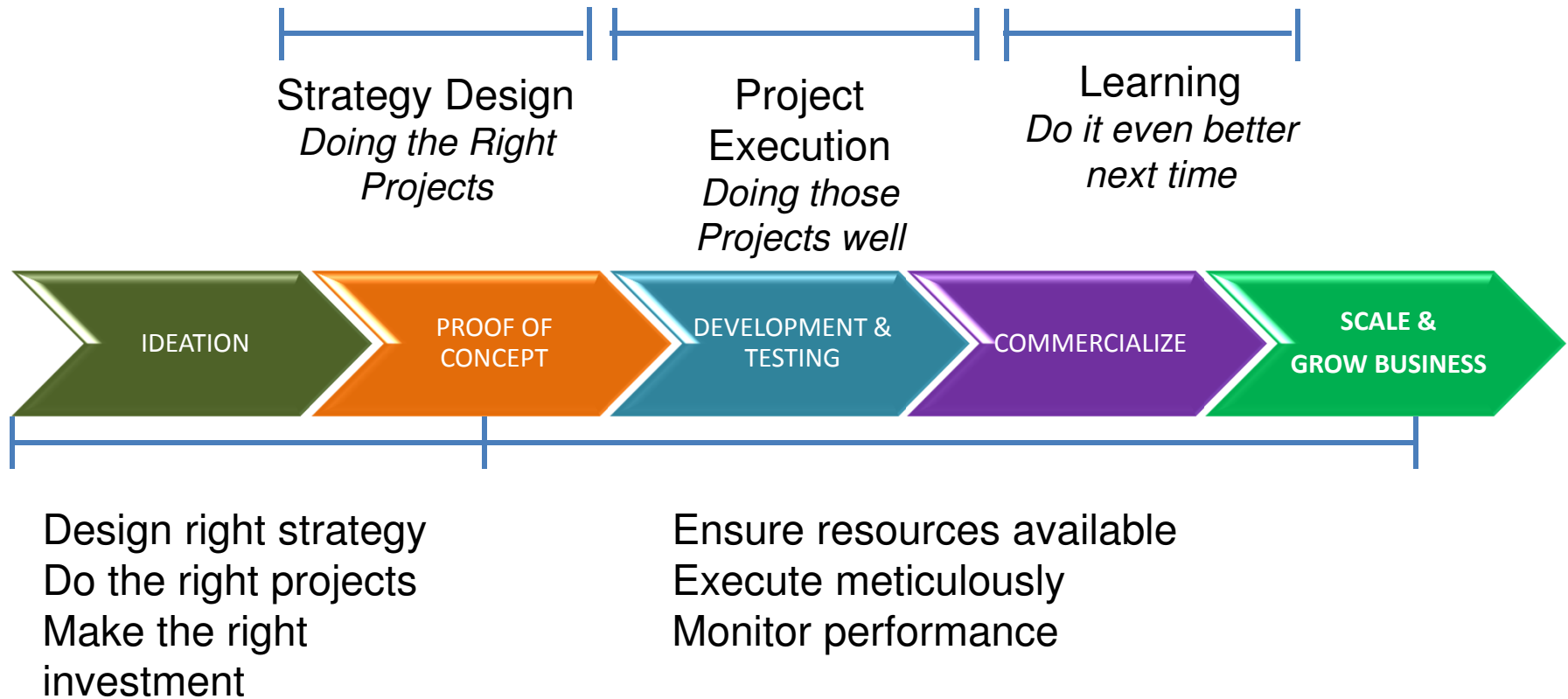
**Parallel IP & Technology Commercialization Streams**

# Value Map for Higher Income Business Eco-system

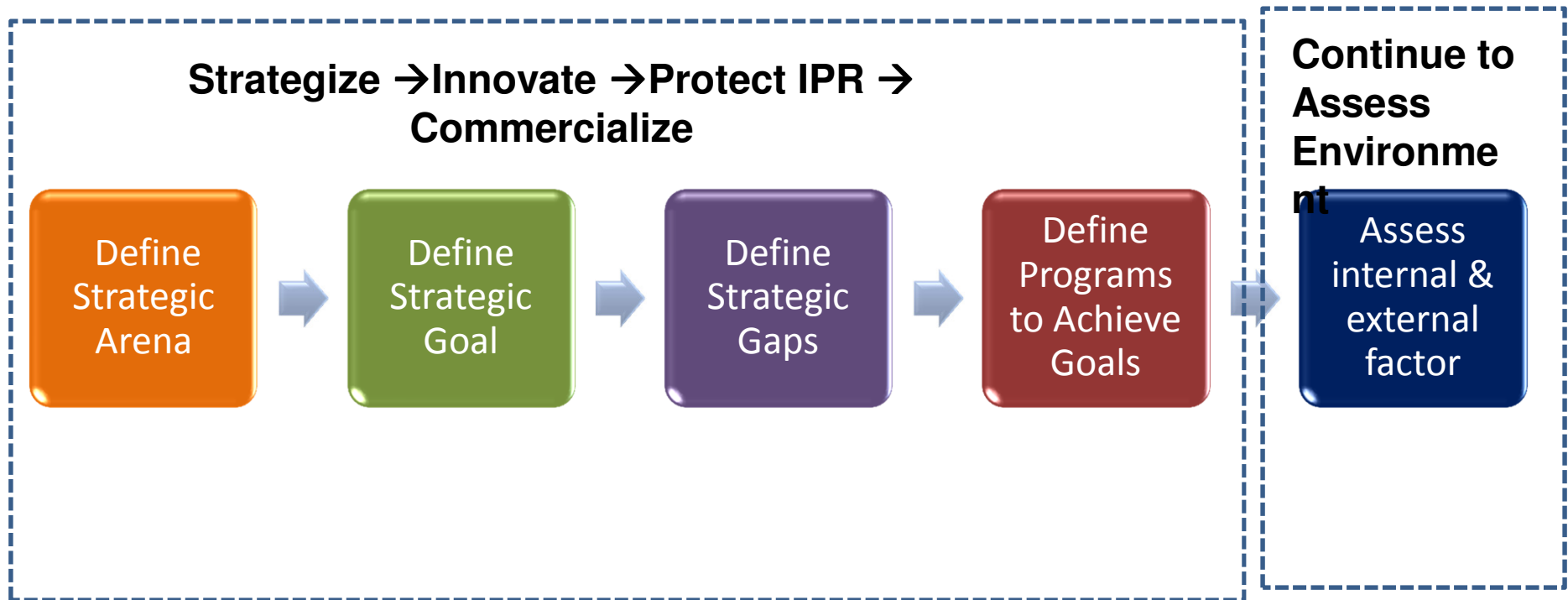


\*ROIC – returns on invested capital

# Commercialization Principles

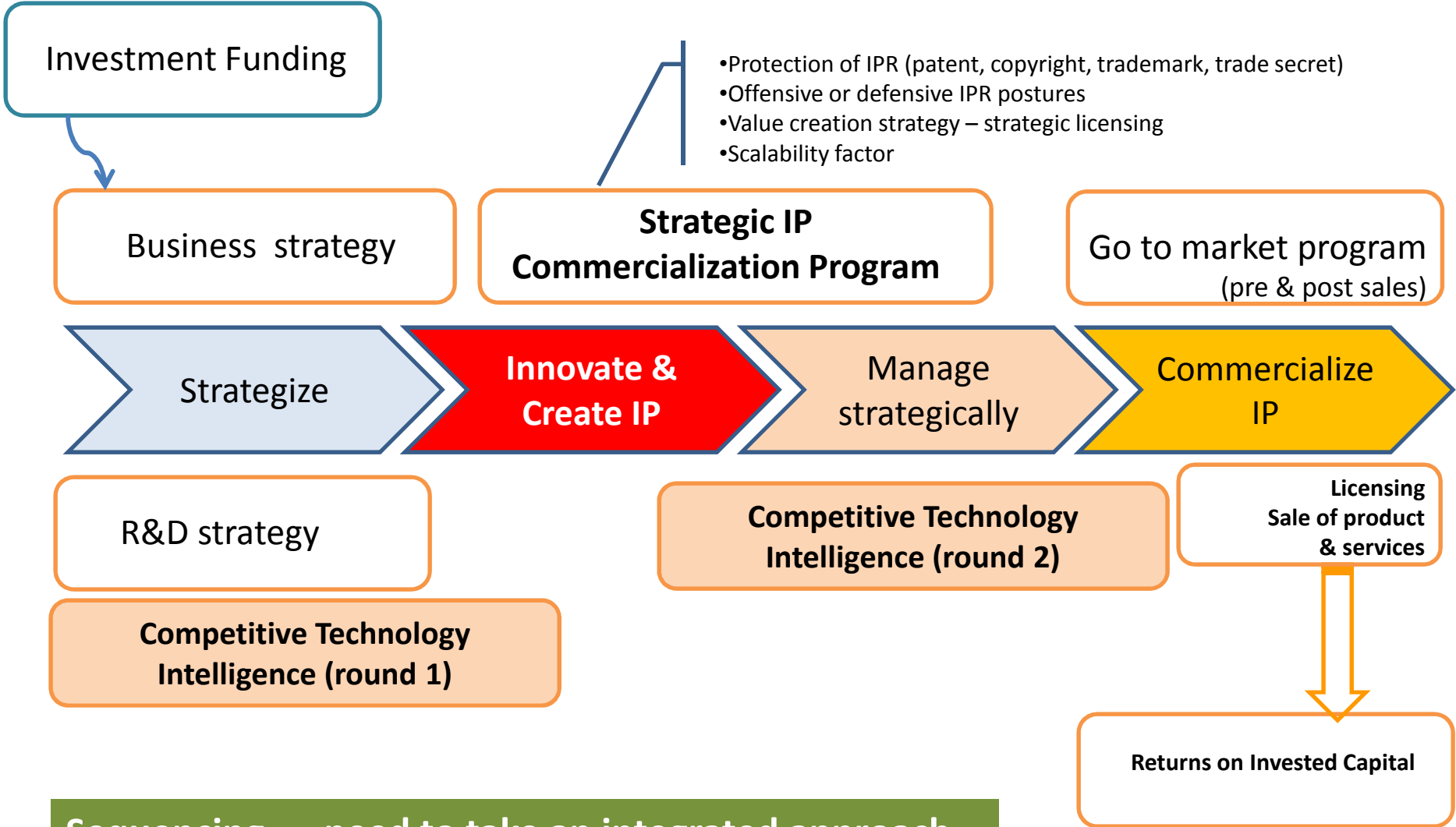


# Commercialization Strategy



Commercialization of IPR and technology are separate but are tightly inter-

# Elements of the Intellectual Capital Eco-system (at the enterprise level)



**Sequencing.....need to take an integrated approach**



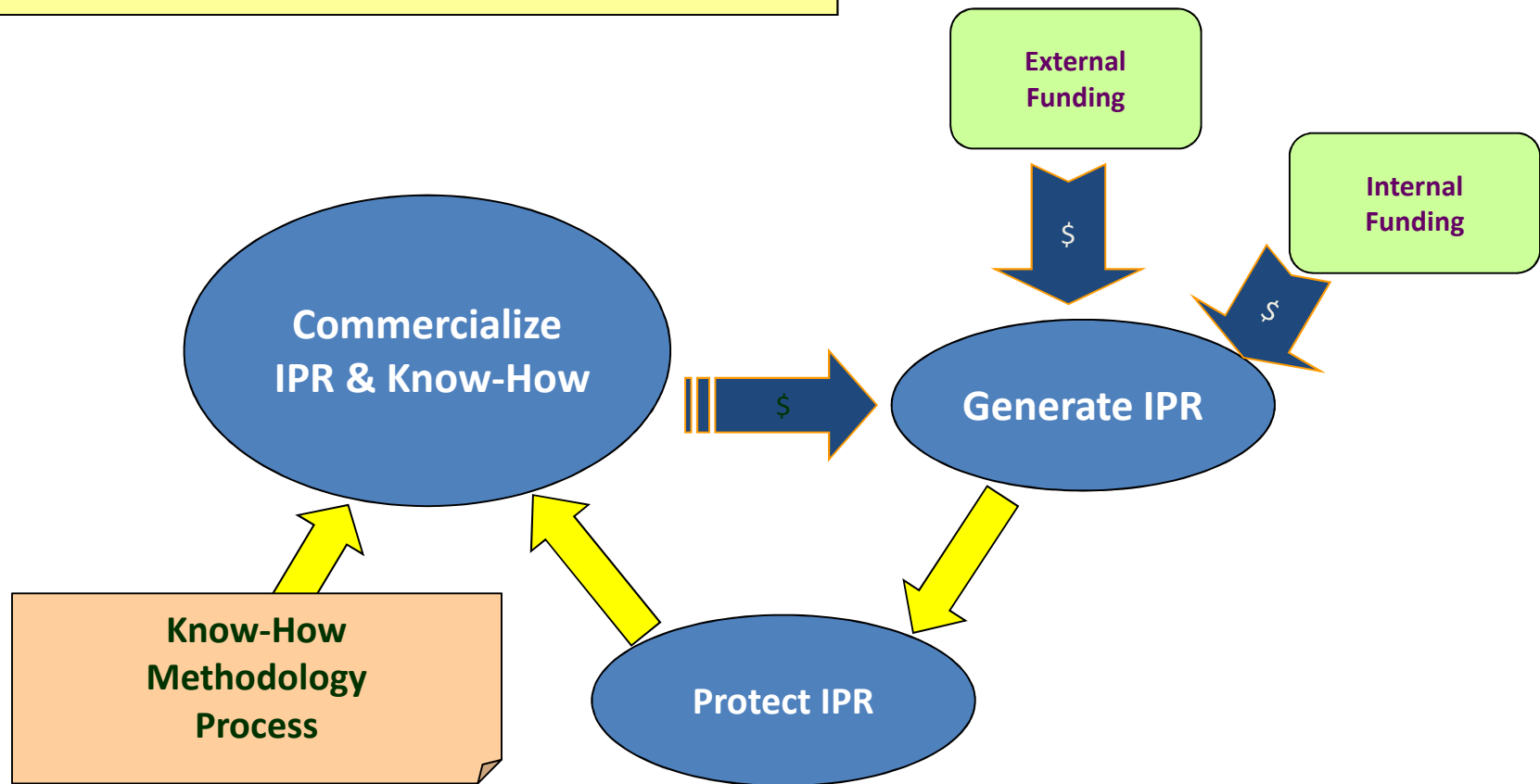
# How IPRs are monetized – IPR value chain



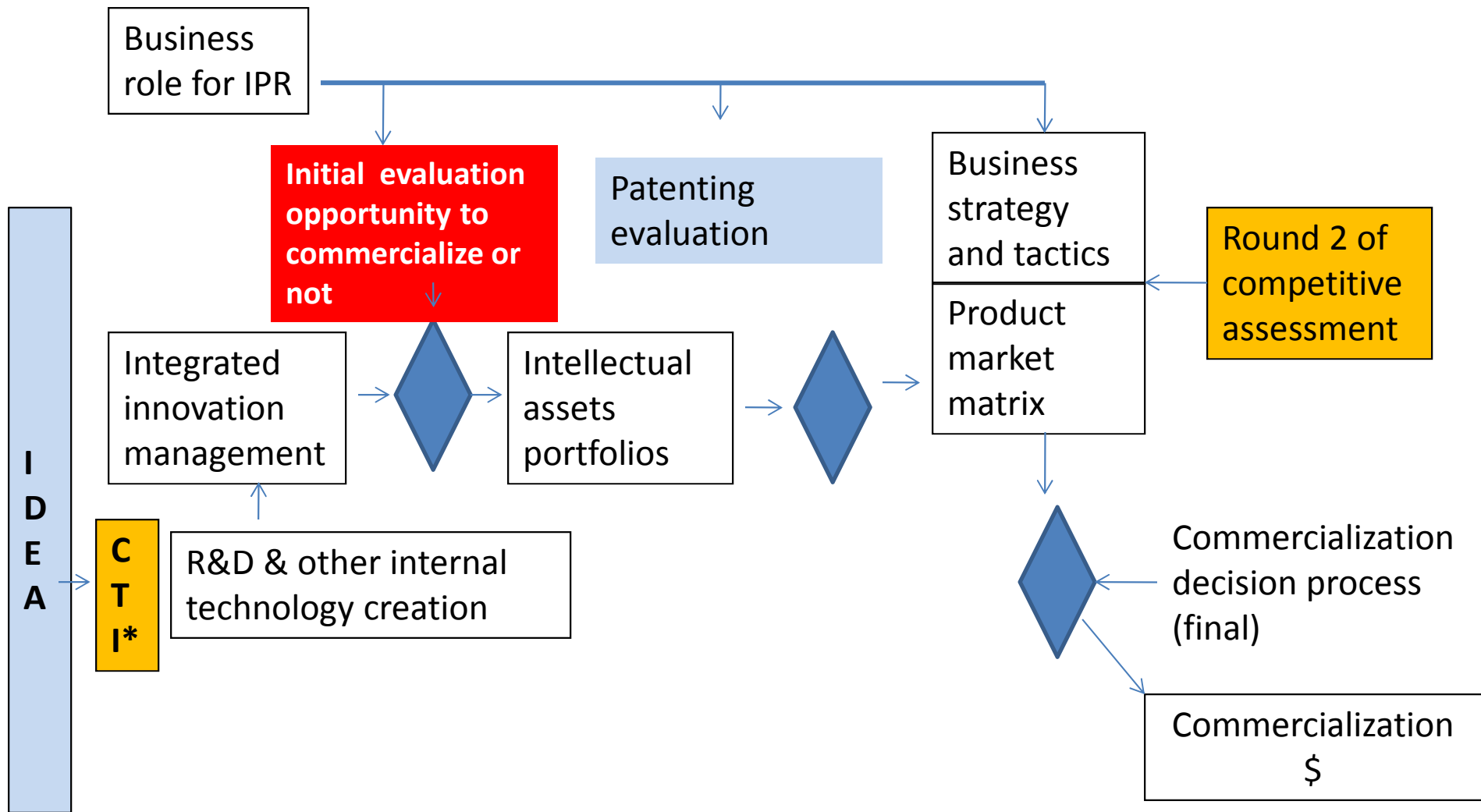
	Methods to Generate Revenue	Example
1	<b>License IPR to others</b>	When you buy a software from say Microsoft, you have the right to use the software in the form of a license . The underlying source codes are the copyright owned by Microsoft Inc.
2	<b>Royalty-based revenue</b>	A biotech patent can be used in commercial transaction where the patent owner negotiate its expected returns based on a certain percentage of revenue, say 1-3 per cent
3	<b>Inject IPR as capital in a venture</b>	IPR can be capitalized in a company as payment in kind and value is generated from the profits of the venture
4	<b>Sale of IPR</b>	Like tangible assets, IPR can be sold or assigned. Once sold, the seller of the IPR no longer has any legal rights over the sold IPR

# Commercialization Flow

Focus must be on intellectual capital value extraction  
leveraging on licensing as the primary model



# Process for extracting value from IPR



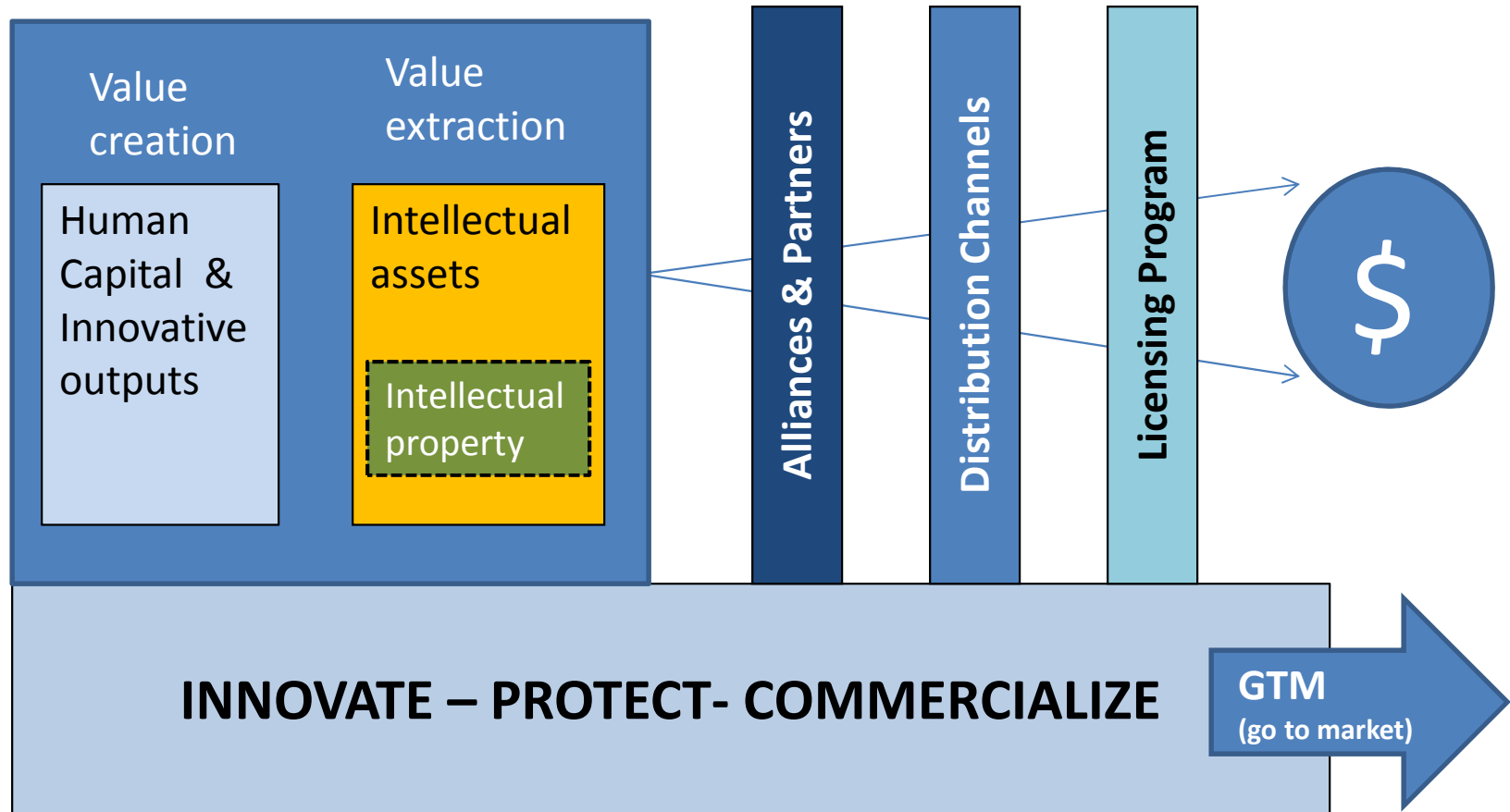
\* COMPETITIVE TECHNOLOGY INTELLIGENCE

# R&D commercialization model – create & commercialize knowledge capital

## Intellectual capital

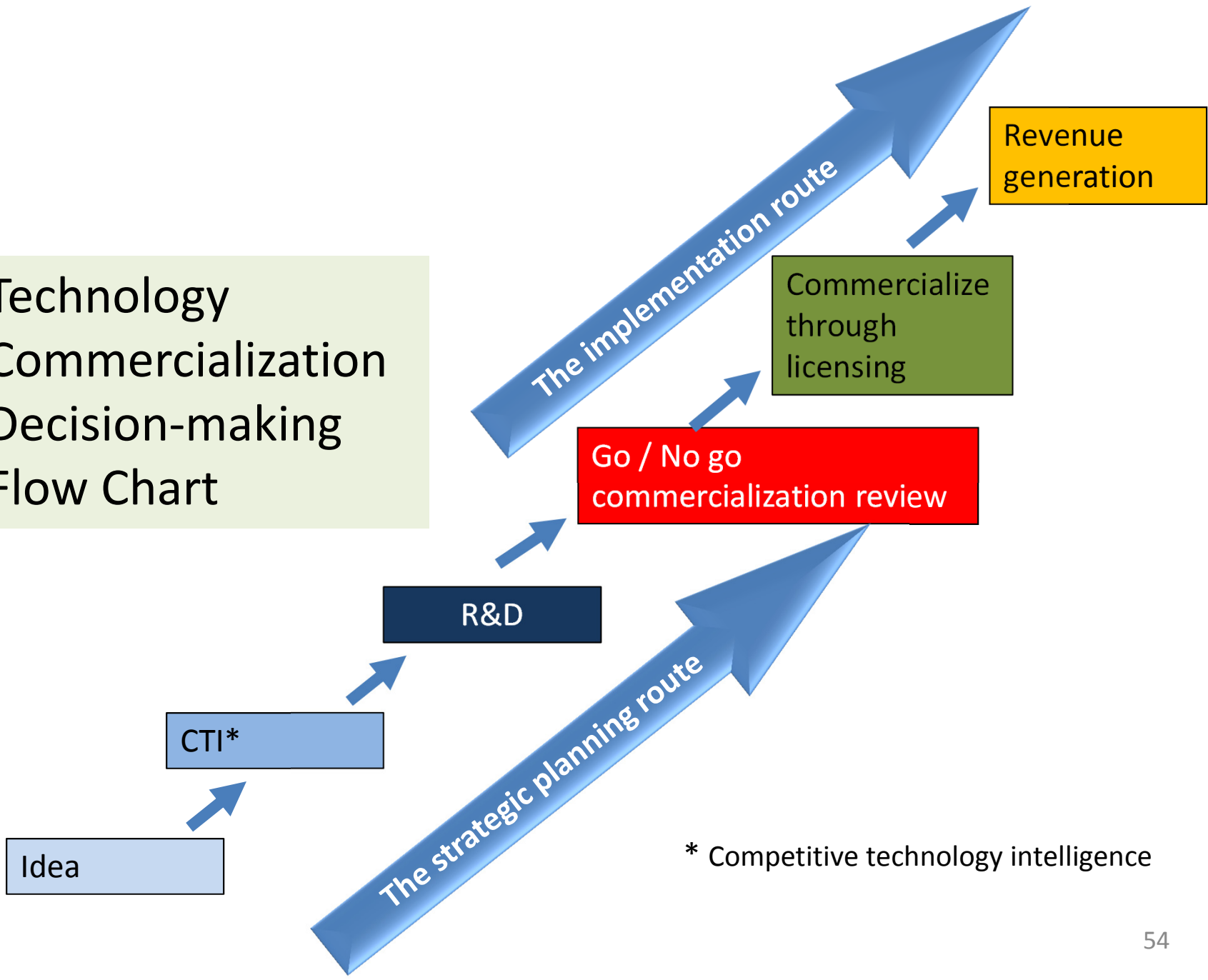
Unique asset class

Complementary business assets



# Technology Commercialization Challenges

Technology  
Commercialization  
Decision-making  
Flow Chart



\* Competitive technology intelligence

## Guiding Principles for Technology Commercialization

Licensing of know-how, software programs (copyrights) or patented technology is usually the most viable option

Always take a market-driven approach to R&D. Innovative products doesn't mean that it will make money – unless the market demands it & is prepared to pay for it

For universities & R&D organizations, the most viable business model is to focus on being a knowledge company that sells products/services based on intellectual capital

Don't rely on more manpower to scale the business – to grow the business, commoditize the product/service

# The Starting Point

## Technology

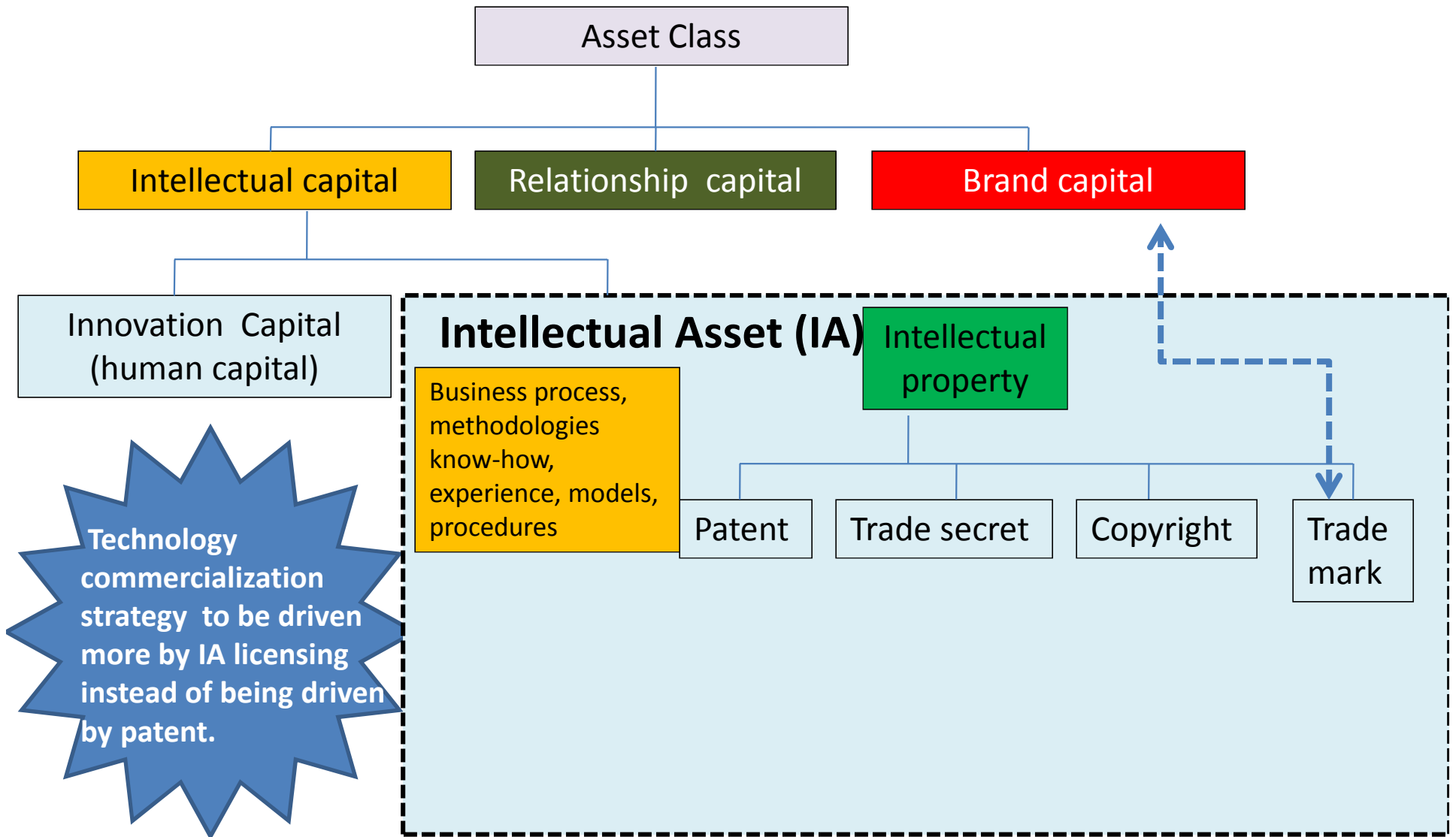
- Is the technology required by the marketplace?
- Does the technology meet the standards required in the industry?
- If your customer buys the product/services what is the returns on investment?

## Business & Resources

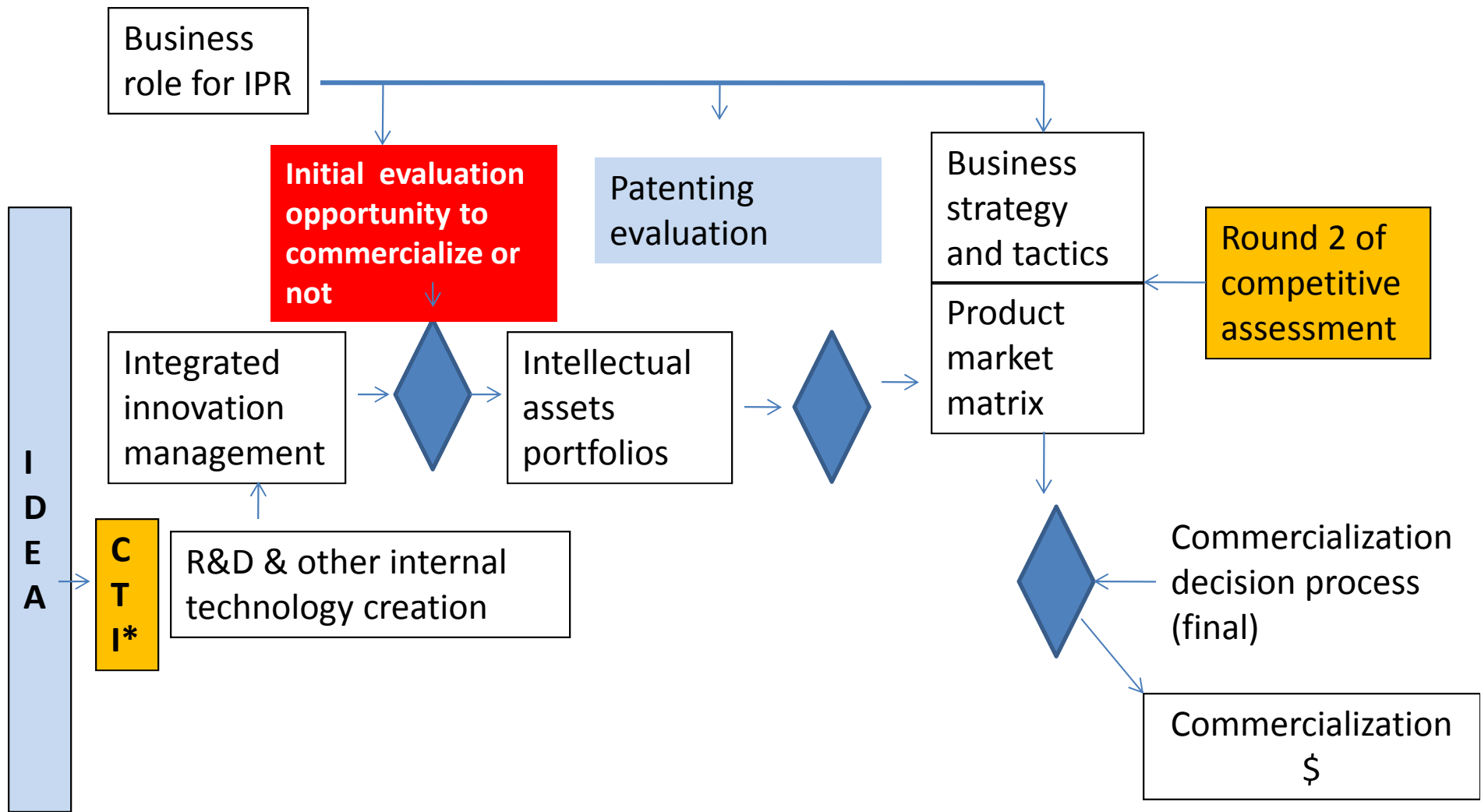
- What is the business model?
- What are the revenue models?
- What is the path to profitability?
- What is the revenue pipeline?
- Do you have the resources to secure the commercial outcomes?



# The Intellectual Capital Asset Structure

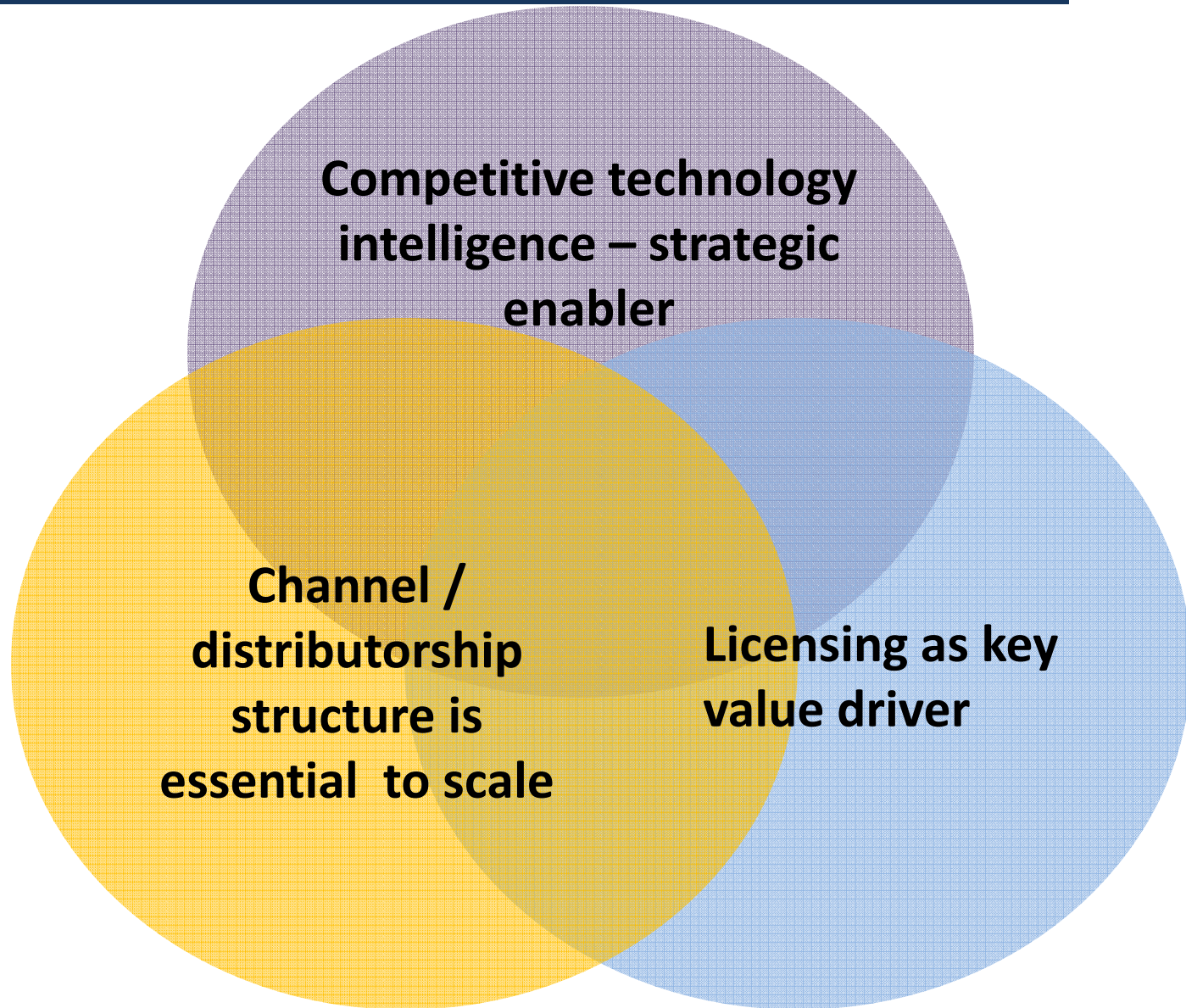


# Process for extracting value from IPR

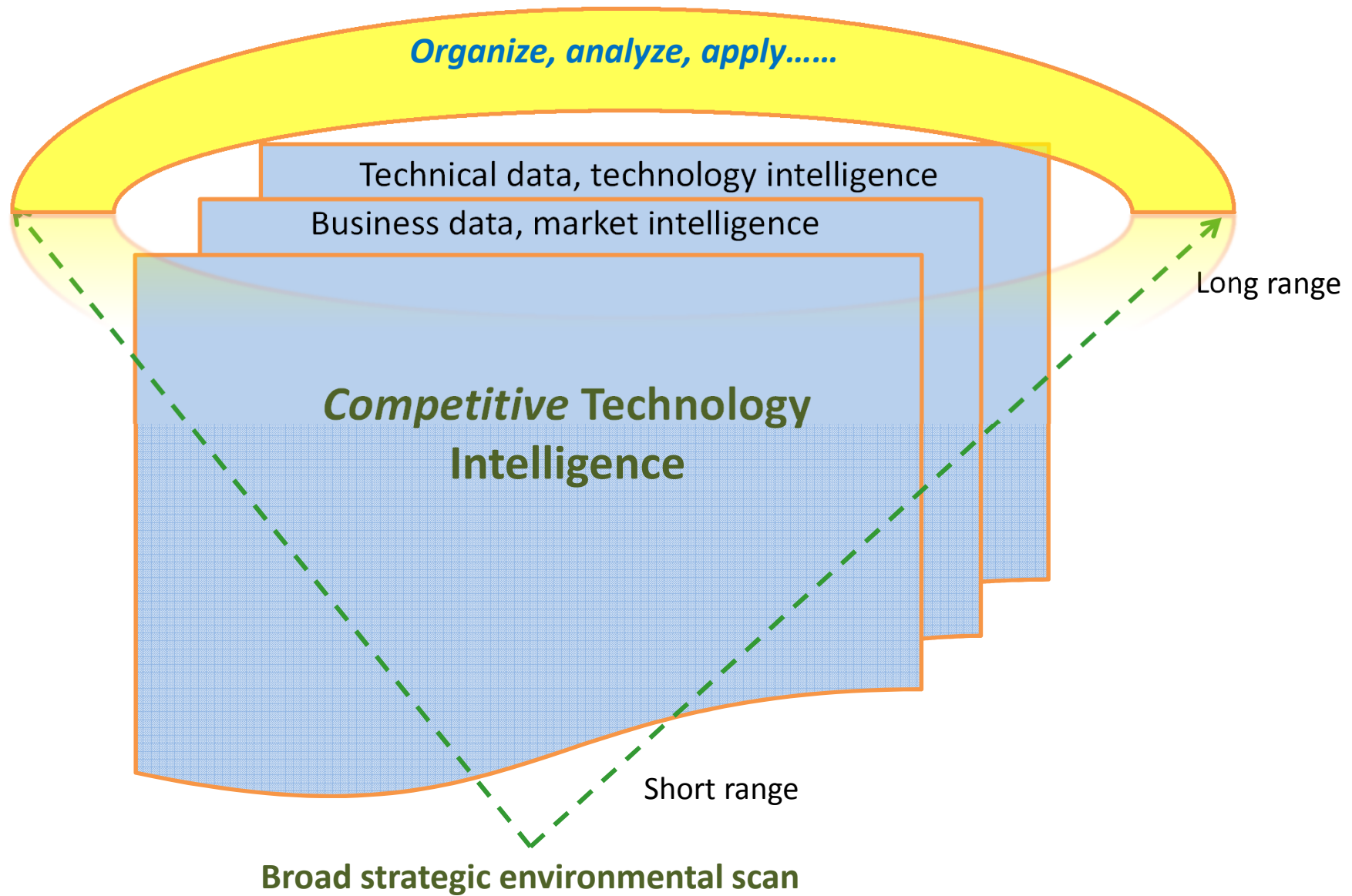


\* COMPETITIVE TECHNOLOGY INTELLIGENCE

Intellectual Capital value extraction model – Critical Building Blocks

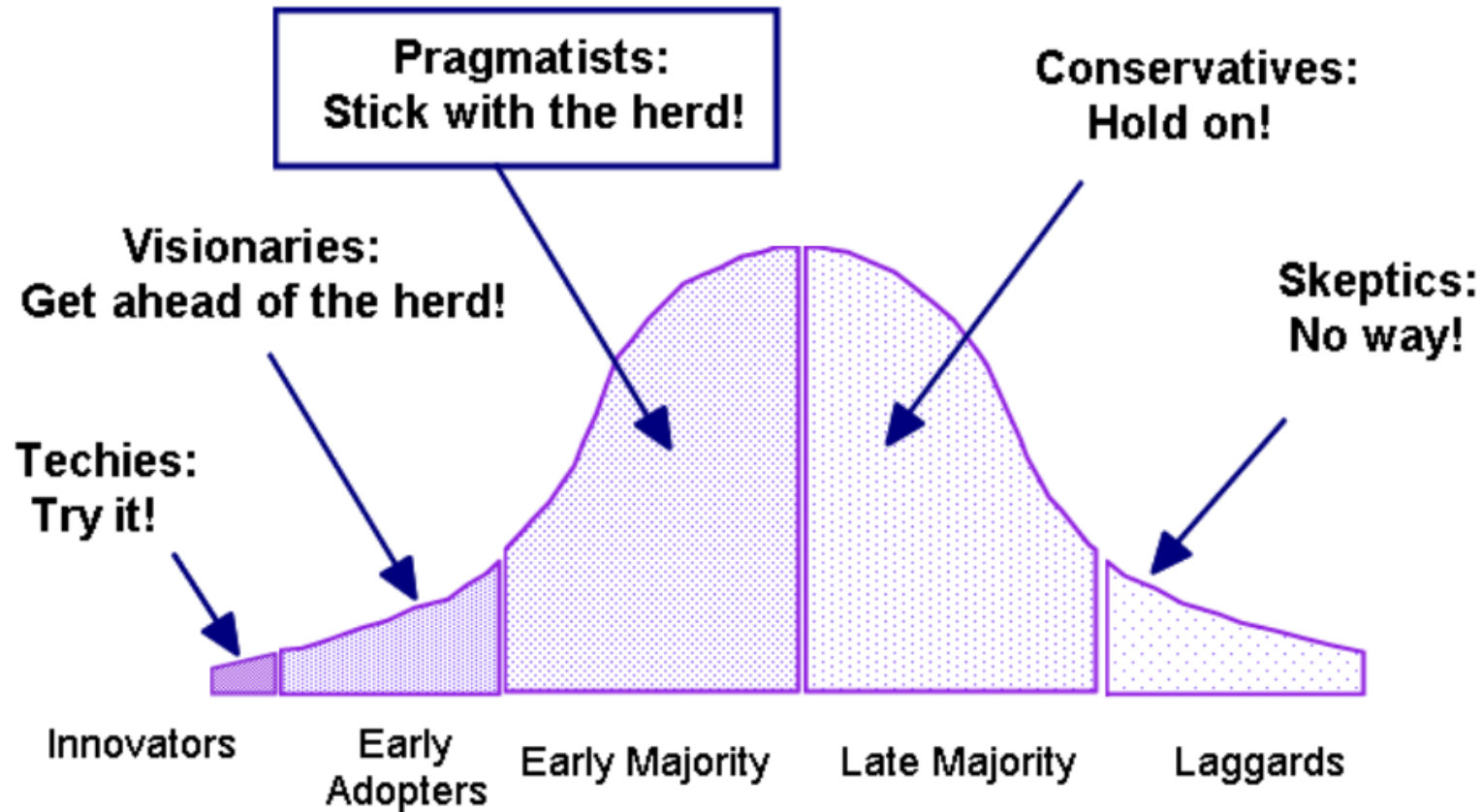


# Competitive Technology Intelligence



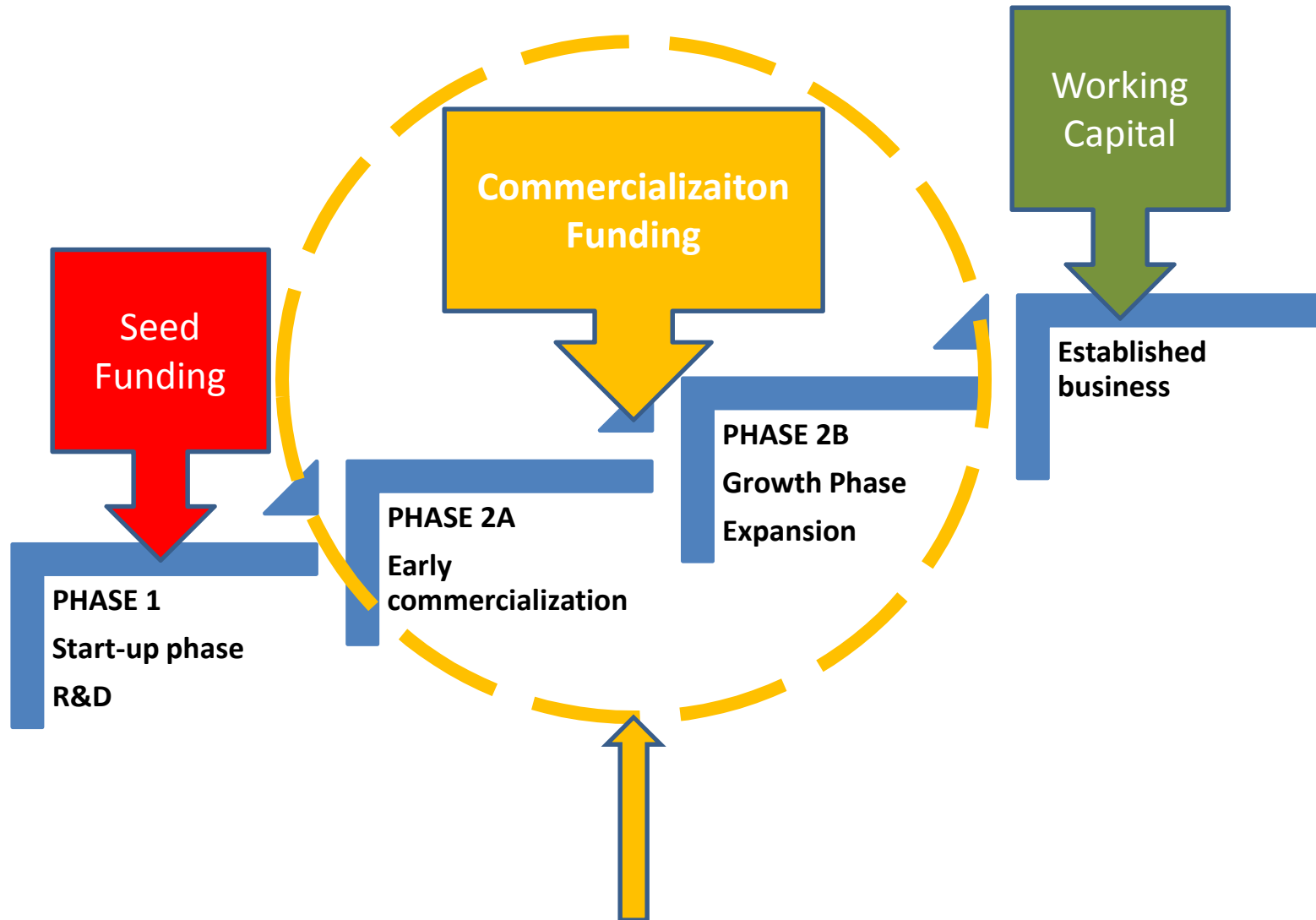
# Governing Model

## Technology Adoption Life Cycle



**Pragmatists create the dynamics of high-tech market development**

# Financing Requirements for Technology Innovation Transactions – Sequence



This initiative will focus on this phase to minimize the commercial risks in the underlying activity

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