



ENGAGING BUSINESS AND INDUSTRY

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- 4** STRENGTHENING INNOVATION PROGRAM
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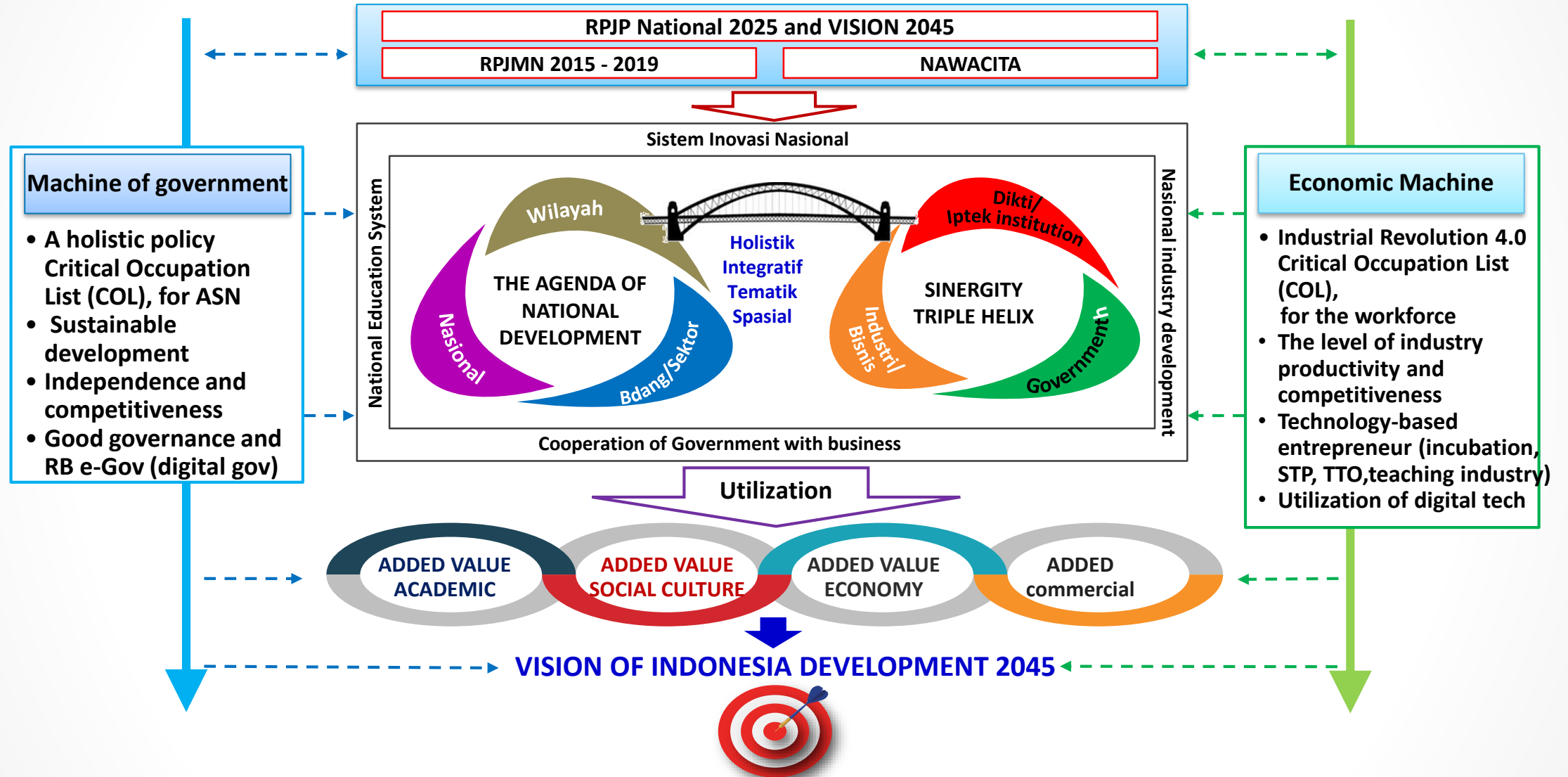
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NAWACITA AND INDONESIA COMPETITIVENESS

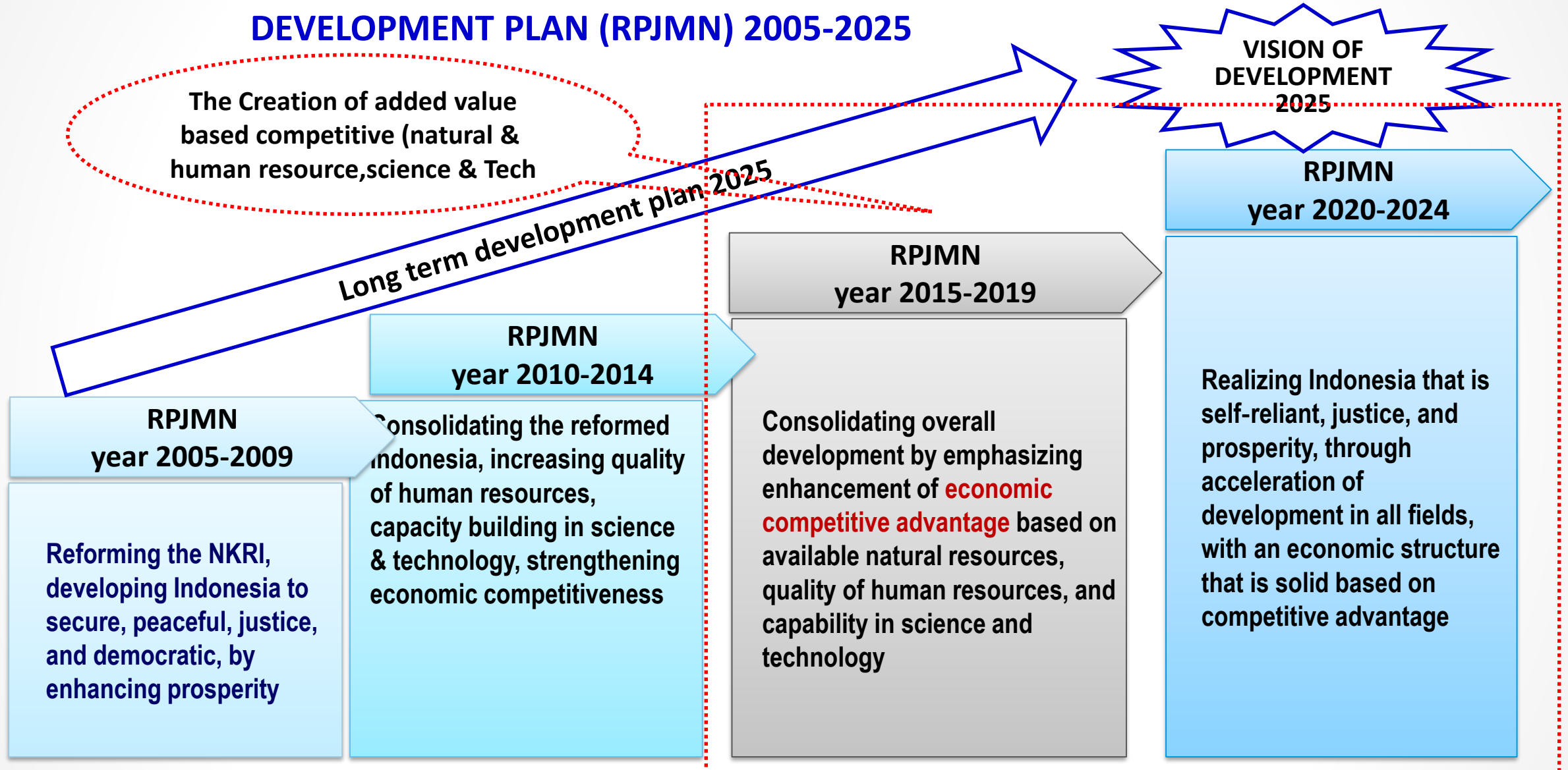
9 (Nine) Agenda Priority of Development (Nawa Cita)

- 1. Returning the state to its task of protecting all citizens and providing a safe environment;**
- 2. Developing clean, effective, trusted and democratic governance;**
- 3. Developing Indonesia's rural areas;**
- 4. Reforming law enforcement agencies;**
- 5. Improve quality of life;**
- 6. Increasing productivity and competitiveness;**
- 7. Promoting economic independence by developing domestic strategic sectors;**
- 8. Overhauling the character of the nation;**
- 9. Strengthening the spirit of "unity in diversity" and social reform**

Triple Helix Synergy In National Development Towards Vision Indonesia 2045



THE STAGE OF DEVELOPMENT IN LONG TERM DEVELOPMENT PLAN (RPJMN) 2005-2025

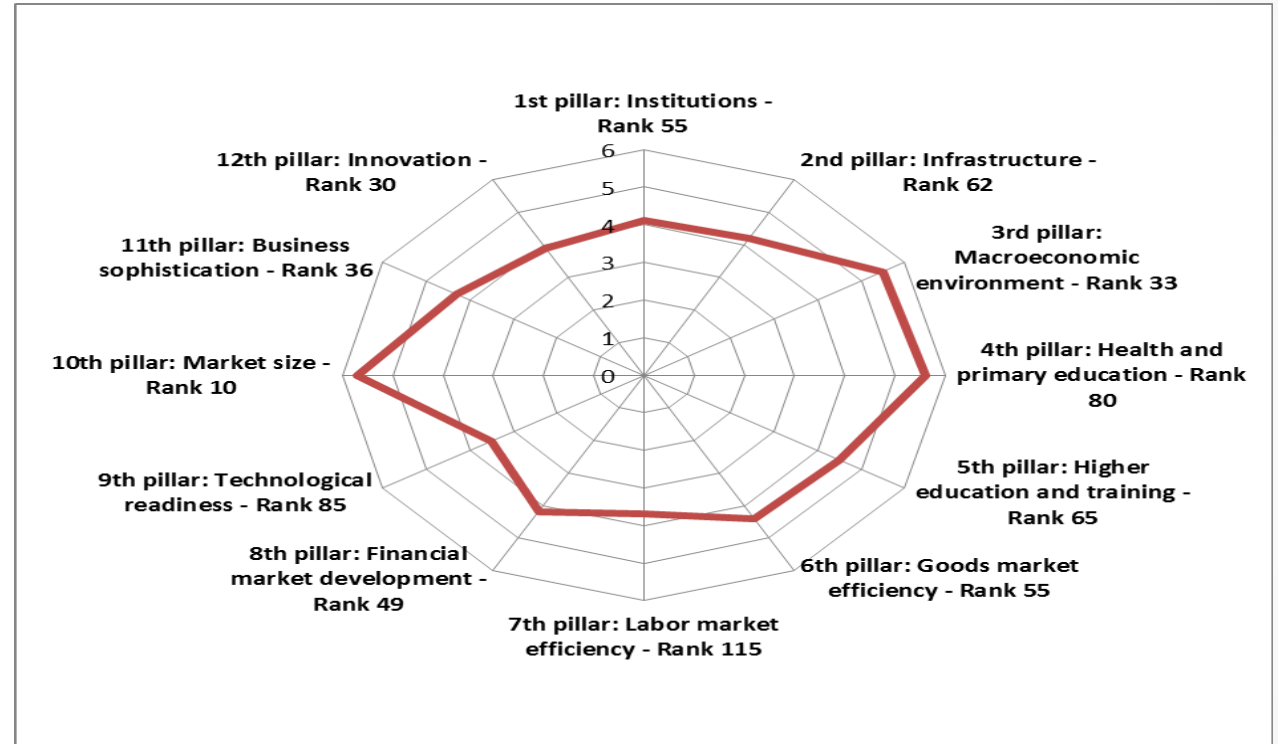


GLOBAL COMPETITIVE INDEX – INDONESIA

2015-2016

Rank at 37 of 140 Countries

1st pillar: Institutions	4.1
2nd pillar: Infrastructure	4.2
3rd pillar: Macroeconomic environment	5.5
4th pillar: Health and primary education	5.6
5th pillar: Higher education and training	4.5
6th pillar: Goods market efficiency	4.4
7th pillar: Labor market efficiency	3.7
8th pillar: Financial market development	4.2
9th pillar: Technological readiness	3.5
10th pillar: Market size	5.7
11th pillar: Business sophistication	4.3
12th pillar: Innovation	3.9



<http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=IDN>

GLOBAL COMPETITIVE INDEX – INDONESIA 2015-2016

Higher education			Technology Readiness			Business Sophistication			Innovation		
5 th pillar	Score	Rank	9 th pillar	Score	Rank	11 th pillar	Score	Rank	12 th pillar	Score	Rank
	4.5	65		3.6	85		4.3	36		3.6	39

Pillar: Technological Readiness and Innovation

Indicators	Score	Ranking	Indicators	Score	Ranking
9th pillar: Technological readiness	3.6	85	12th pillar: Innovation	3.6	39
Availability of latest technologies	4.9	72	Capacity for innovation	3.9	30
Firm-level technology absorption	4.9	56	Quality of scientific research institutions	3.9	56
FDI and technology transfer	4.8	61	Company spending on R&D	3.9	25
			Univ-industry collaboration in R&D	4.2	40
			Gov' t procurement of advanced tech products	4.0	29
			Availability of scientists and engineers	4.3	51
			PCT patents, applications/million pop.*	0.1	101

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THE CURRENT CONDITIONS OF INDUSTRY IN INDONESIA

FROM THE PERSPECTIVE OF TECHNOLOGY AND PRODUCT DEVELOPMENT

ISSUES AND ROLE OF RISTEKDIKTI

THE ISSUES



MARKET

The absorb of industry to the existing innovation is still low and has not been optimal



INTEGRATION RESEARCH-INDUSTRY

The research does not fit to industry need because it is not supported from industry requirement .



HIGHER EDUCATION

The supporting infrastructure of research and development is really limited and need the big cost

THE OPTIMAL OF COMMERCIALIZATION PROCESS

PROGRAM OF RISTEK-DIKTI

Forefront Bridging system

- Mapping industry potential
- Curasy system of industry proposal and supporting funding

Regular Partnership system:

- *Business matching*
- Policy of transfer technology, etc

Directional Support system

- Selection system of Research and Funding
- Center of incubation and *prototyping center*



STI POLICY Republic of Indonesia

No	Weaknesses	Policy and Strategy
1	Low Skill Labor	<ul style="list-style-type: none"> - Quality management for education - Revitalize of Recruitment - Revitalize of Curriculum
2	Innovation Strategy	
	- Scientific Publication	<ul style="list-style-type: none"> <input type="checkbox"/> Supporting budget for submitting to international Journal <input type="checkbox"/> Development model of training for scientific publication
	- Budgeting	Coordination in conducting the program to make efficiently in the budget system
	- University/industry collaboration	<input type="checkbox"/> Consortium for center of excellent

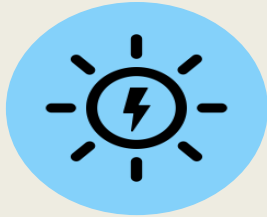
STI POLICY REPUBLIC of INDONESIA

No	Weaknesses	Policy and Strategy
1	Lack of industrial independence	<ul style="list-style-type: none"><input type="checkbox"/> Strengthen the utilization of human resources as needed in industry,<input type="checkbox"/> the mobility of researchers / engineers into the industry,<input type="checkbox"/> the award for producer of intellectual property rights (IPR),<input type="checkbox"/> the industry take advantage of R & D Results as optimally as possible,<input type="checkbox"/> do transfer of technology to the scheme Turn Key Project, Licenses, FDI (Foreign Direct Investment), Joint Production, Off Set, BOT (Build Operate Transfer),<input type="checkbox"/> strengthening audit technology institutions,<input type="checkbox"/> select technology For the independence of Industry, dissemination and<input type="checkbox"/> Diffusion Technology R & D results and make changes paradigm "OBJECT" to "SUBJECT".

THE EXAMPLE OF INDUSTRY BASED ON FOCUS PRIORITY OF RISTEKDIKTI



**FOOD
BIOFARMA**



**ENERGI
PLN, PERTAMINA**



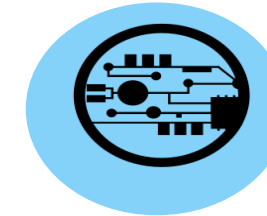
**TRANSPORTATION
PT. INKA, PT. KAI**



**TEKNOLOGI INFORMASI
PT. INTI**

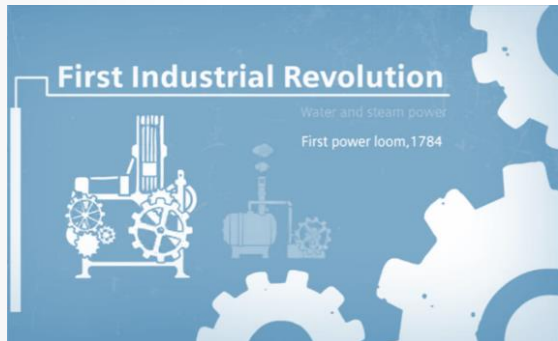


**DEFENCE, ADVANCED TECHNOLOGY
PT. DIRGANTARA INDONESIA, PT. PINDAD**



**HEALTH AND MEDICINE
PT. BIOFARMA**

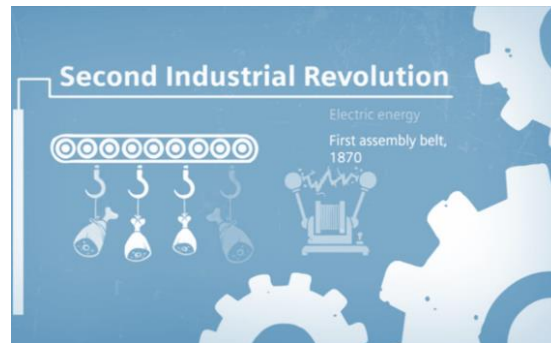
Industry Revolution



Industry 1.0

Steam engines,
Hydropower, wind, and
solar

1784



Industry 2.0

Electrical energy for mass
production

1870



Industry 3.0

Information technology
and electronics applied
to automatic production
systems

1969



Industry 4.0

Digital technology,
massive wireless &
massive data technologies
are integrated with
manufacturing activities

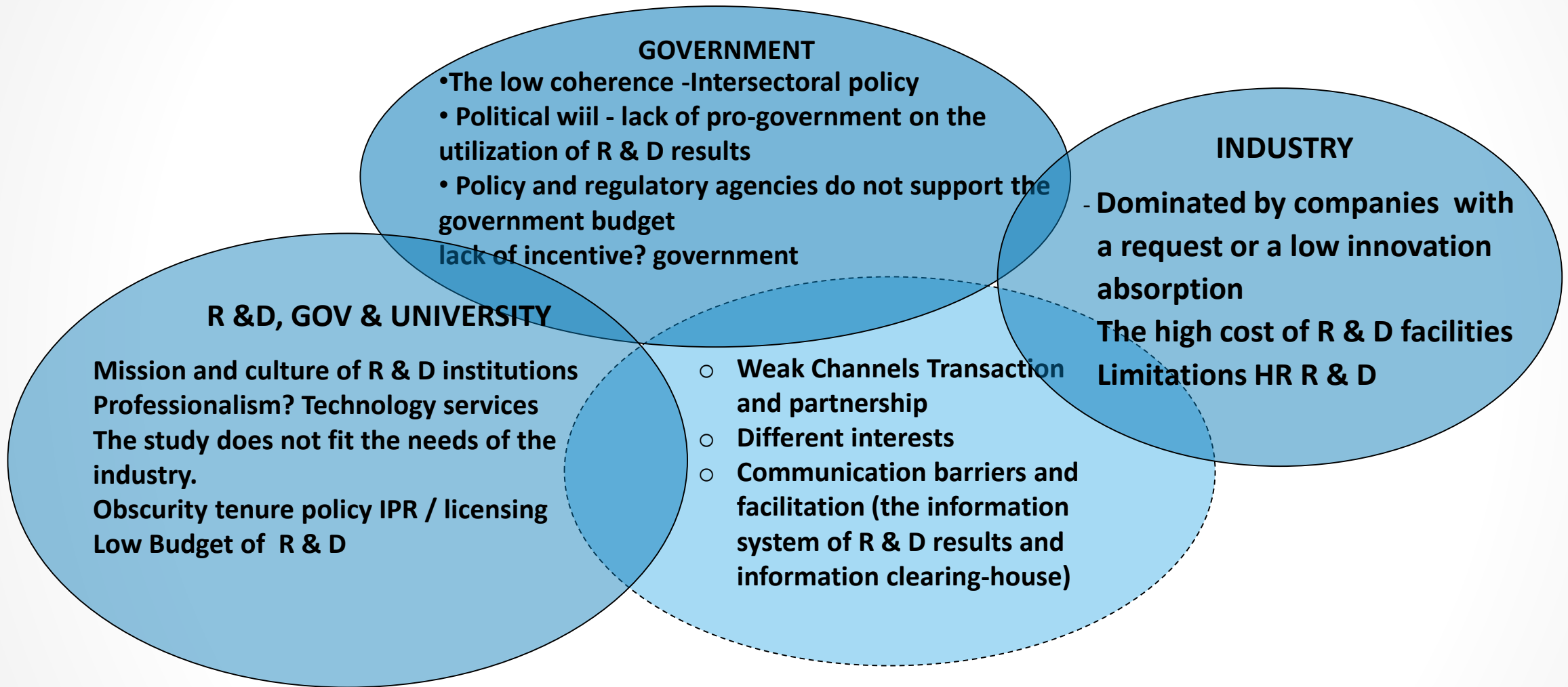
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THE CURRENT CONDITIONS OF RESEARCH INSTITUTION & UNIV

FROM PERSPECTIVE OF RESEARCH AND DEVELOPMENT WHICH DO NOT FIT TO INDUSTRIAL NEED

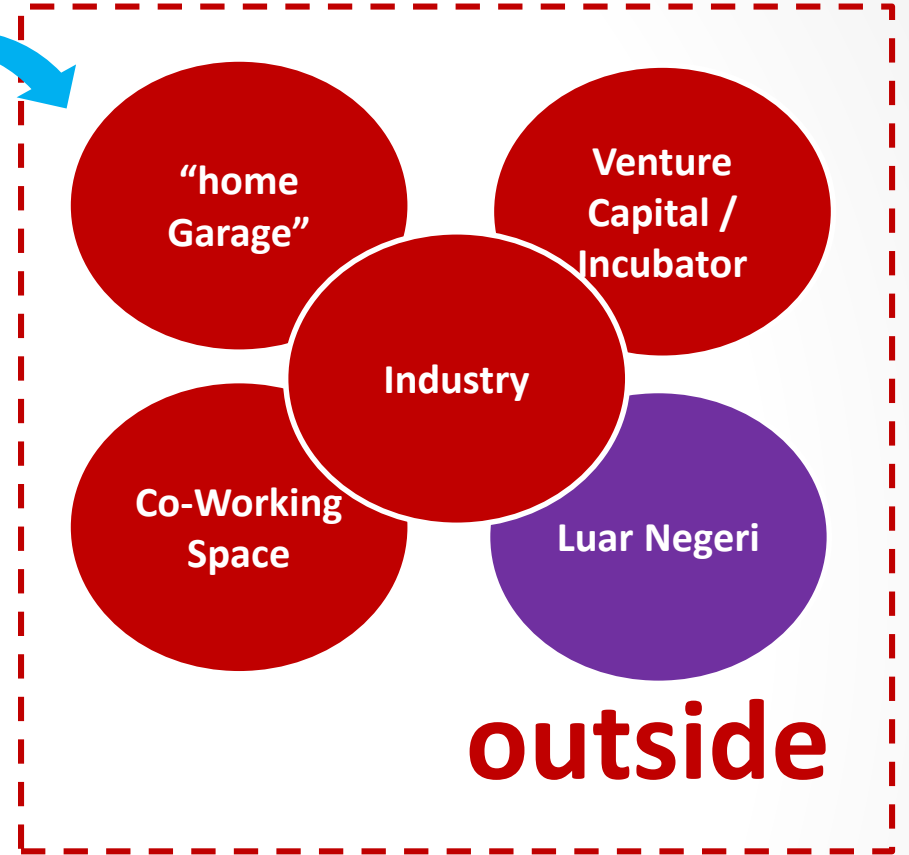
THE GAP AMONG INDUSTRY, GOVERNMENT & ACADEMICIAN (ABG)



THE ISSUES OF INNOVATION IN UNIV

More innovation takes place outside the university

Campus



Innovation “Back-to-Campus”

THE ISSUES OF RESEARCH AND INNOVATION IN UNIVERSITY

Current condition

University conducts research as an independent activity, without cooperating with industry

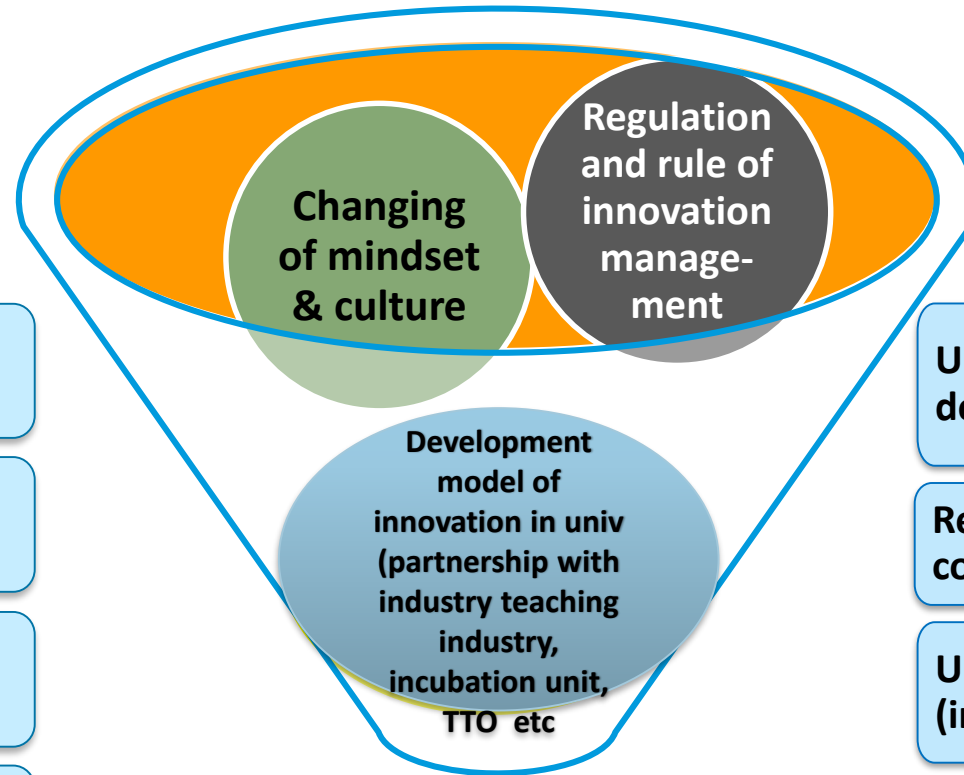
Research at university ends in the form of report and/or publication

University has no industrial partners (industry concorcium) for its innovation

University has not yet implemented innovation management function, from upstream to downstream

University produces locally innovation production on small scale as a result of a faculty or prodi experiment

Innovation in the UNIV is not tested so it is not trusted by the industry



**Institutionalize the system
Innovation Management In
University**

Source: Paulina Pannen (2016), "PPT Laporan Lembaga Kepemimpinan"

The expected conditions

University cooperates with industry in doing research to produce innovation

Research at University ends with a competitive product of innovation

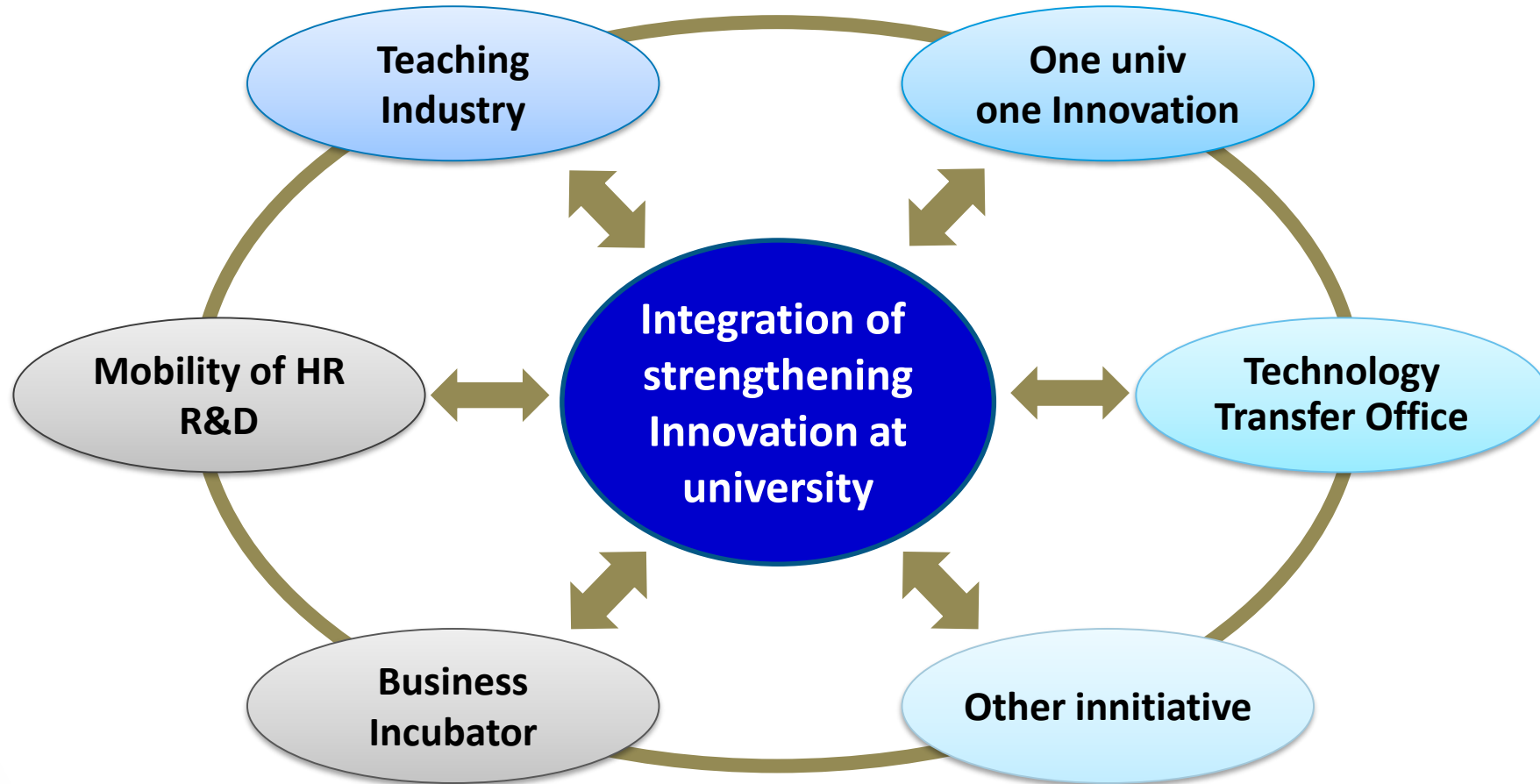
University has an industrial partner (industry consortium) for its innovation

University is able to manage innovation, from upstream to downstream through various models

University is able to produce innovations that are mass produced by industry

University produces innovative industrial competitiveness

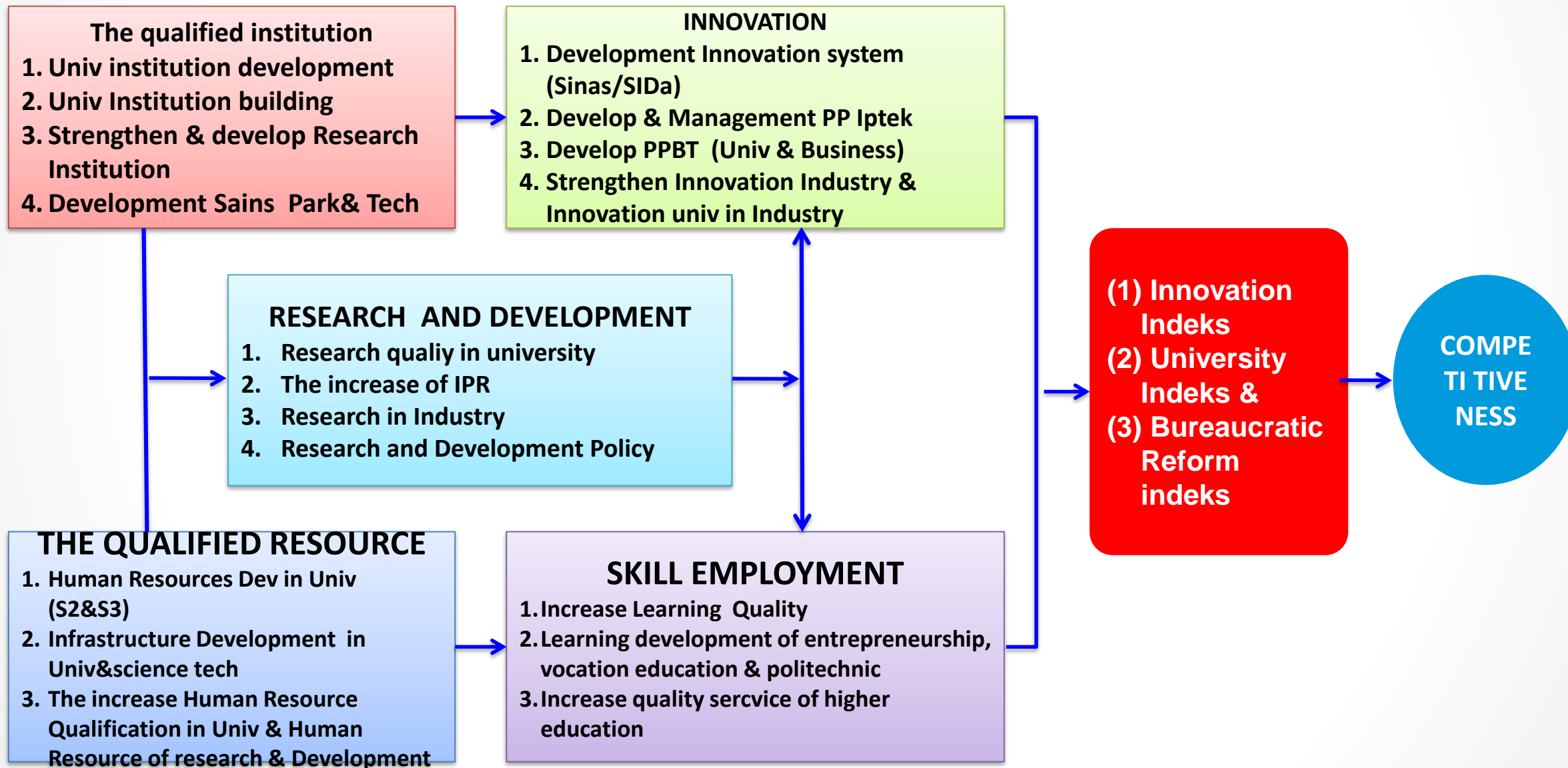
Synergy Program and Optimalyztion the resources of Strengthening innovation at University



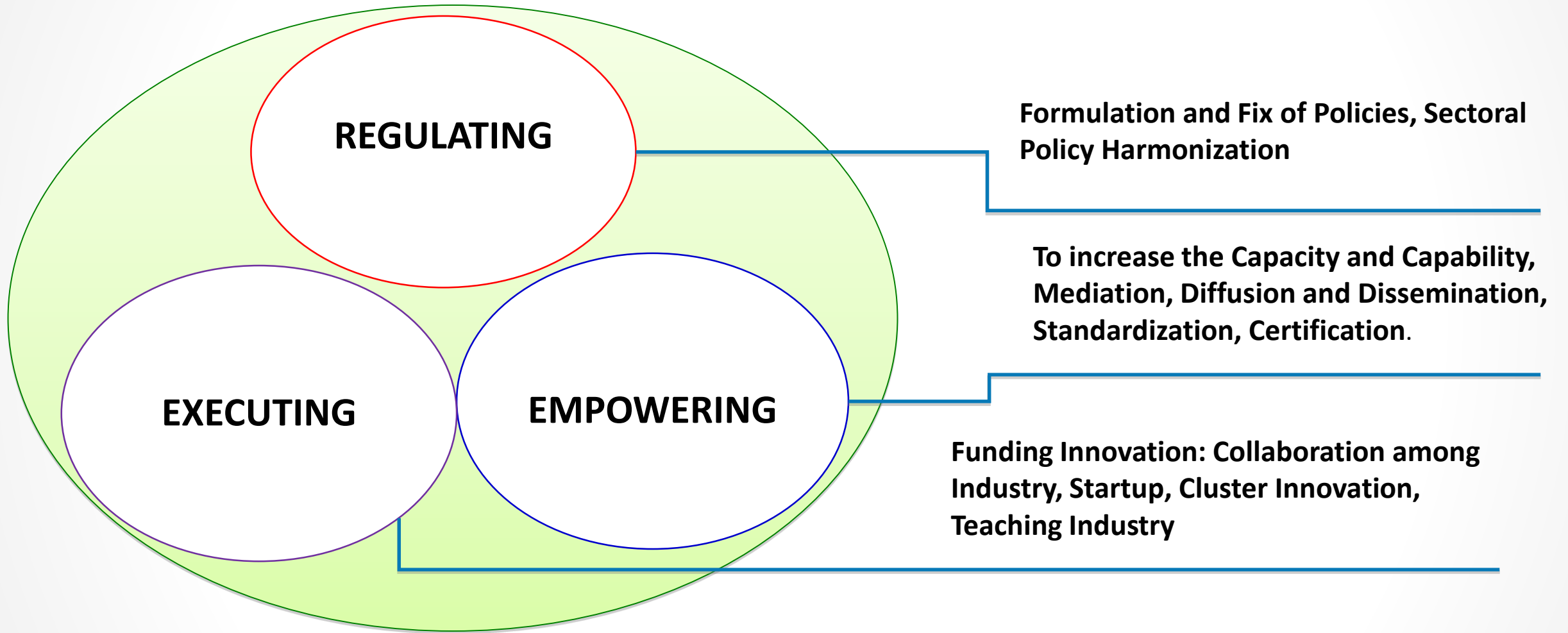


STRENGTHENING INNOVATION PROGRAM

STRATEGIC PROGRAM OF MINISTRY OF RESEARCH TECHNOLOGY AND HIGHER EDUCATION



PLATFORM OF STRENGTHENING INNOVATION

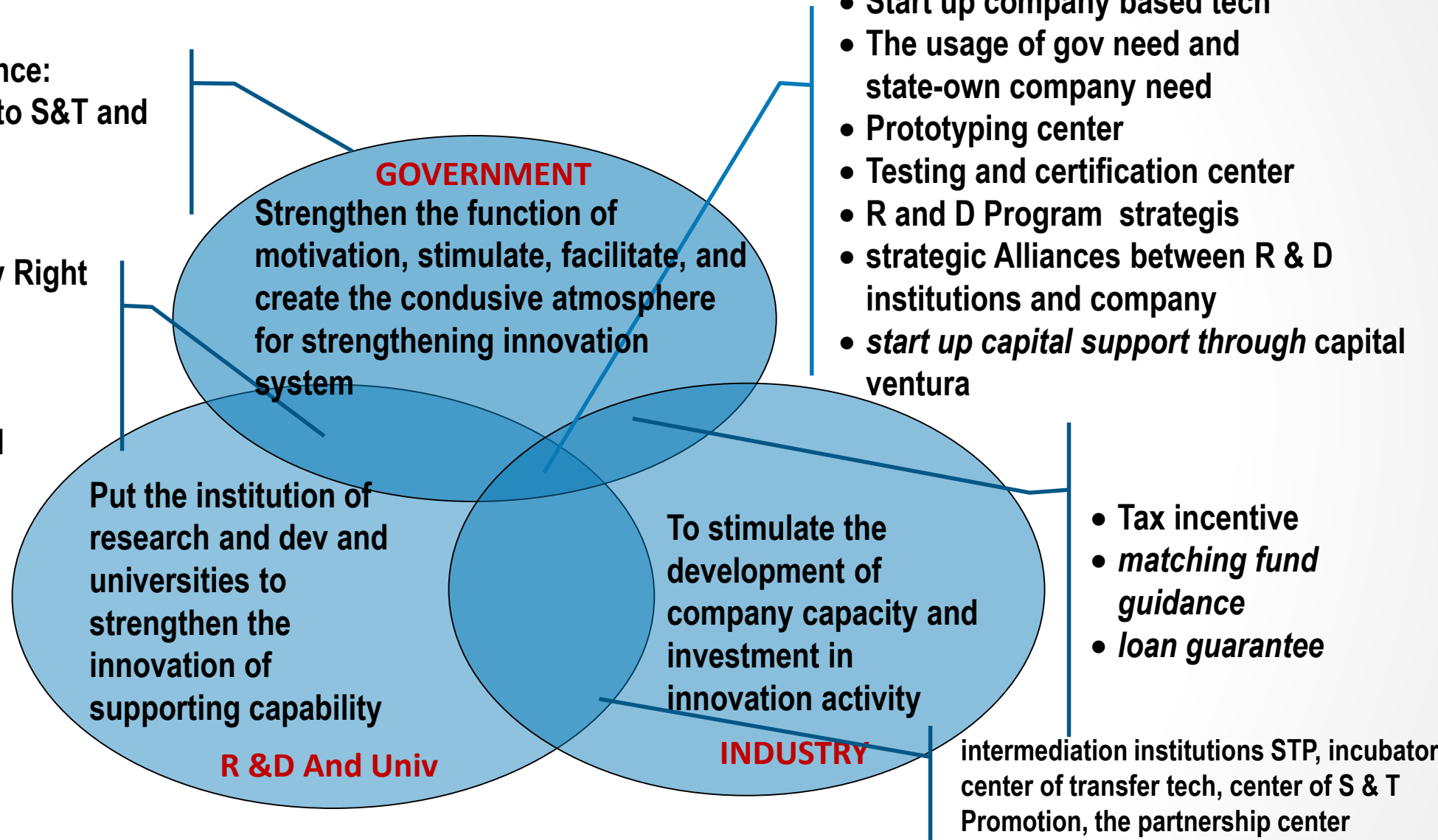


THE INNIATIVE FOR STRENGTHENING NATIONAL INNOVATION

Regulating	Executing	Empowering
<ol style="list-style-type: none"> 1. Mobility of researcher / engineer/lecturer to Industry 2. Reward for researcher/ engineer/lecturer → valuation of credit point 3. Arrangement of Royalty on domestic paten Commercialization 4. <i>Flexibility</i> research funding, development and innovation through <i>Block Grant Scheme</i> 5. Fiscal and Non Fiscal incentive 6. Government Procurement for pre-commercialize of R&D product result 7. Risk ensurance/Technologi insurance of innovation guaranty system 8. The obligation of state univ to produce the innovation product every year 9. Harmonization of sectoral policy 	<ol style="list-style-type: none"> 1. Roadmap of innovation product priority year 2025 2. Fasilitate of innovation funding <ol style="list-style-type: none"> a. To implement Technology in Industry b. Univ Innovation in Industriy c. Start up company tech based d. Innovation of start up company tech based at univ 3. Development of <i>Teaching</i> Industry 4. Development of Innovation Concorcium 5. Development of interaction area of Industriy(STP, Innovation Cluster) 	<ol style="list-style-type: none"> 1. Development/Strengthening of Intermediation Unit/ <i>Technology Transfer Office – TTO</i> 2. Development of <i>Help Desk</i> of innovation consultation small medium enterprise 3. Development of training centers 4. Strengthening the standarzization based on R&D result; strengthening the certification institution 5. Strengthening the collaboration between State own company and Industry as a innovation trigger 6. Regionalisation of Univ Innovation 7. Development of database and sistem information innovation 8. Strengthening diffusion and dissemination; exhibition and promotion, business gathering 9. Strengthening of international cooperation (G to G; B to B) 10. Strengthening of innovation balance and competitiveness

THE ALTERNATIVE INSTRUMENT OF POLICY FOR STRENGTHENING THE INNOVATION SYSTEM

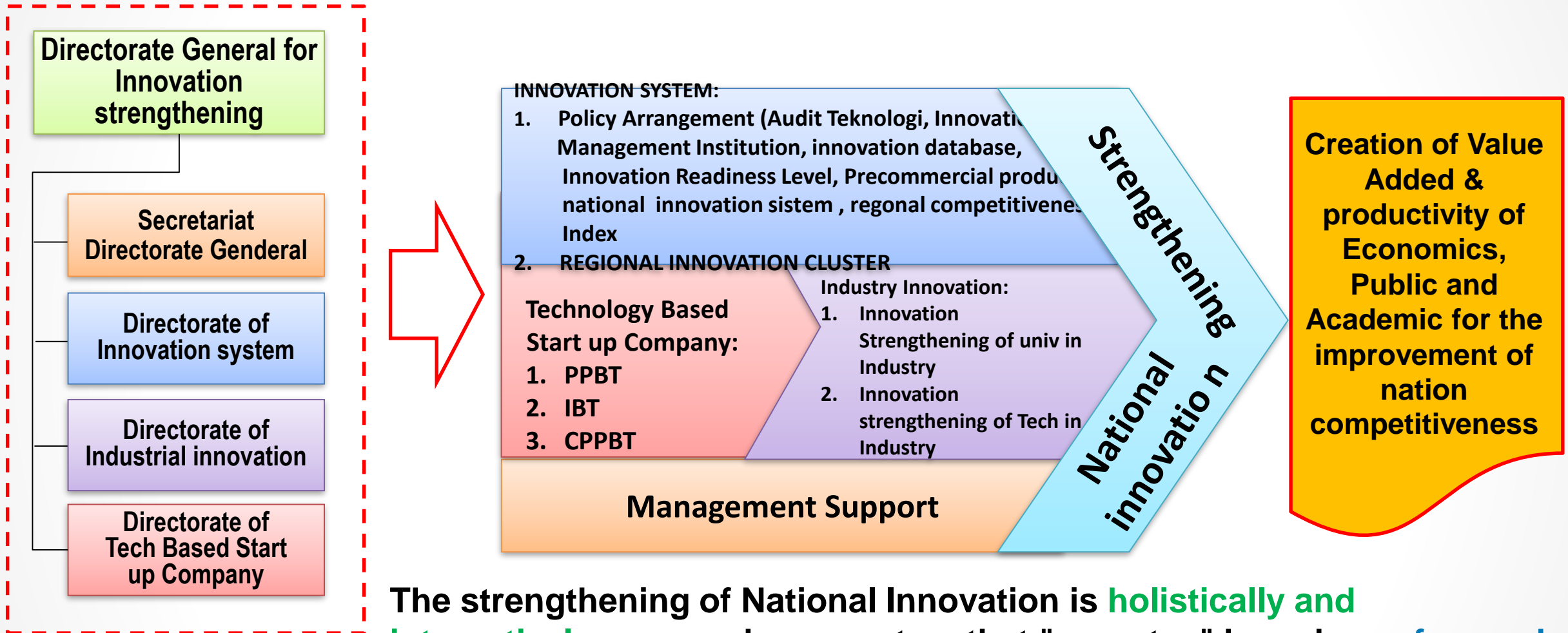
- Sinkroninze & policy coherence:
- Applied constitution related to S&T and its derivative
- The mainstream of S&T
- Policy of Transfer Tech
- Policy of Intellectual Property Right and Publication
- The consistency of job performance measurement
- Roadmap of competition and Research and Development



5

THE PROGRAM OF DG FOR INNOVATION STRENGTHENING

APPROACH OF ORGANIZING SYSTEM ON STRENGTHENING NATIONAL INNOVATION



The strengthening of National Innovation is **holistically and integratively** managed as a system that "operates" based on a **focused, consistent and sustainable development roadmap** to support the creation of added value to strengthen the nation's competitiveness and independence.

THREE MAIN COMPONENTS OF REGIONAL INNOVATION CLUSTER

1. SUBJECT

2. INSTRUMENT

3. OBJECT

REGIONAL
GOVERN
MENT

BUSINESS

UNIVER
SITY

COMMU
NITY

Business Model

Canvas Model
(Osterwalder)

SUPPLY & VALUE
CHAIN

- SCM
- VCA

PUD

Technology
Acquisition

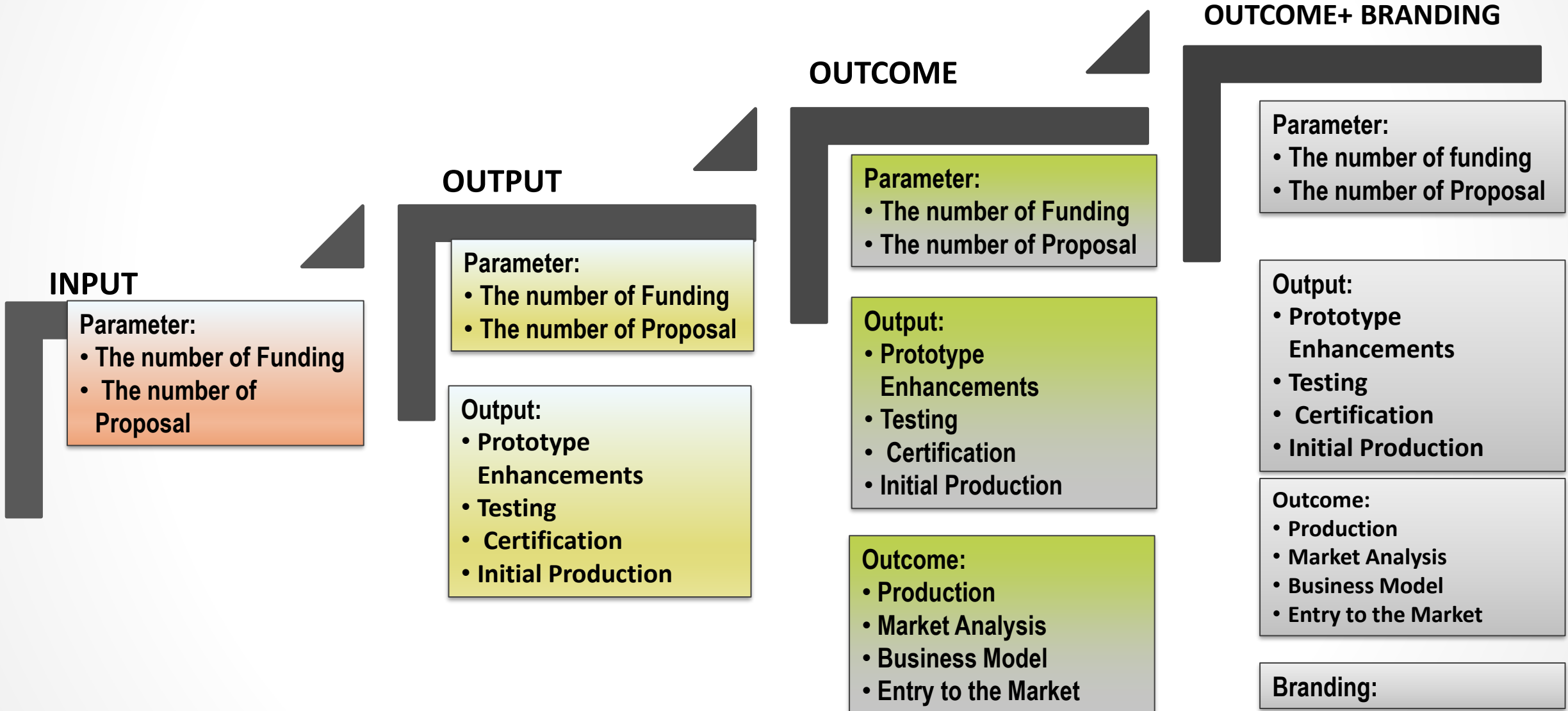
- Appropriate
- Diffusion

KATSINOV

Instrument/measur
ment tools of
innovation product

MODEL QUADRUPLE HELIX

MANAGEMENT OF INNOVATION FUNDING ARRANGEMENT



STRENGTHENING OF INNOVATION UNIVERSITY IN INDUSTRY

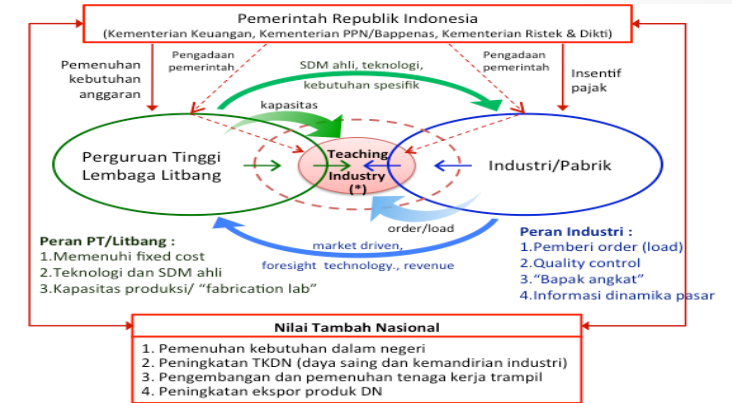
1 Purpose

Develop Industry technology based which has function as a place for learning and innovation product development

2 Focus

ICT; Defence; Food; Health; Energy; Transportation; Advanced material

3 Teaching Industry



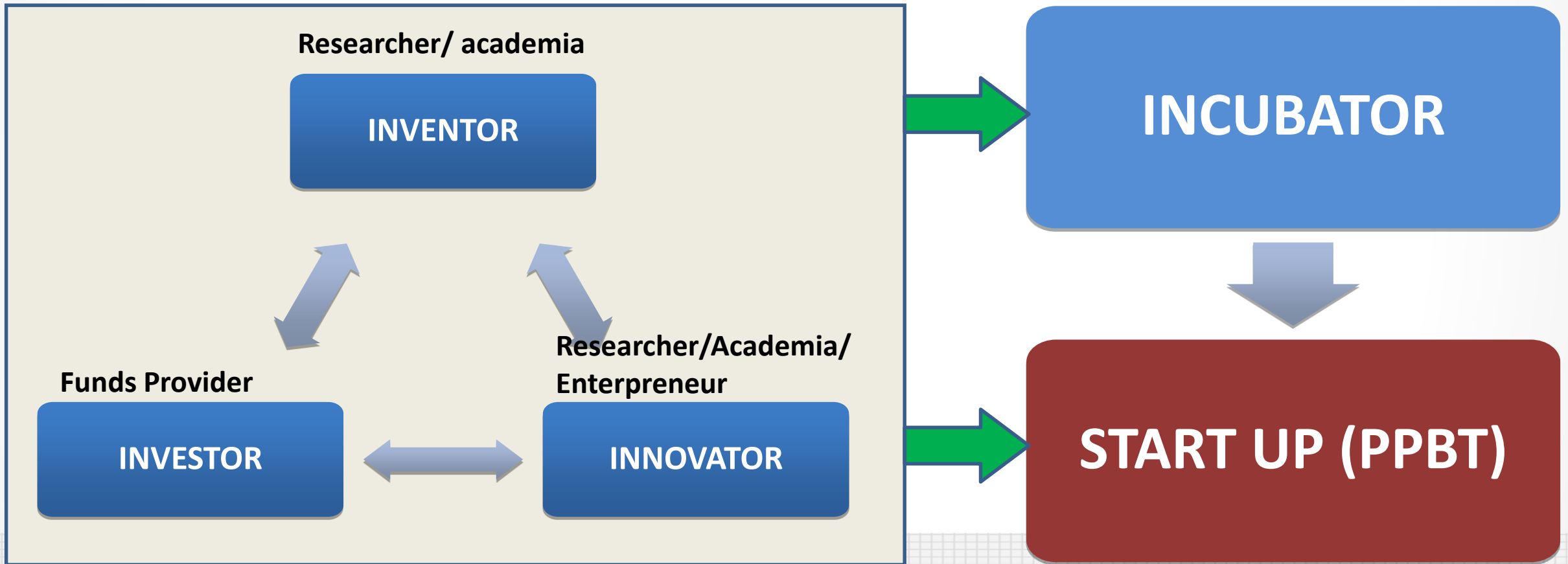
5 Output/Outcome

Learning, Industry and Innovation Product

4 Selection Criteria

The quality of learning; the quality of business (Industry); readiness and track record of researcher; output, risk and impact

START –UP COMPANY DEVELOPMENT (PPBT)



INCUBATOR FACILITATION

Infrastructure

Start-up Tenant Business Space;
Office Space;
Meeting (business) room;
Internet access;
Telecommunication facility;
Office supplies.



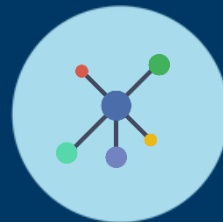
Accompaniment

Business Development
Technology Development and production process;
Business and management Consultation;
Business Plan and Feasibility Study;
Business Legal for start-up company;
Product Standardization;
Product Certification;
Intellectual Property Right Registration;
Accompany and Mentoring;
Product Testing;
Product promotion and Business;
Market Research;
Pelatihan Bisnis.



Networks and Collaboration

Regularly Business Meeting;
Research or Technology Transfer Agency;
Business Partners;
National and international forum.

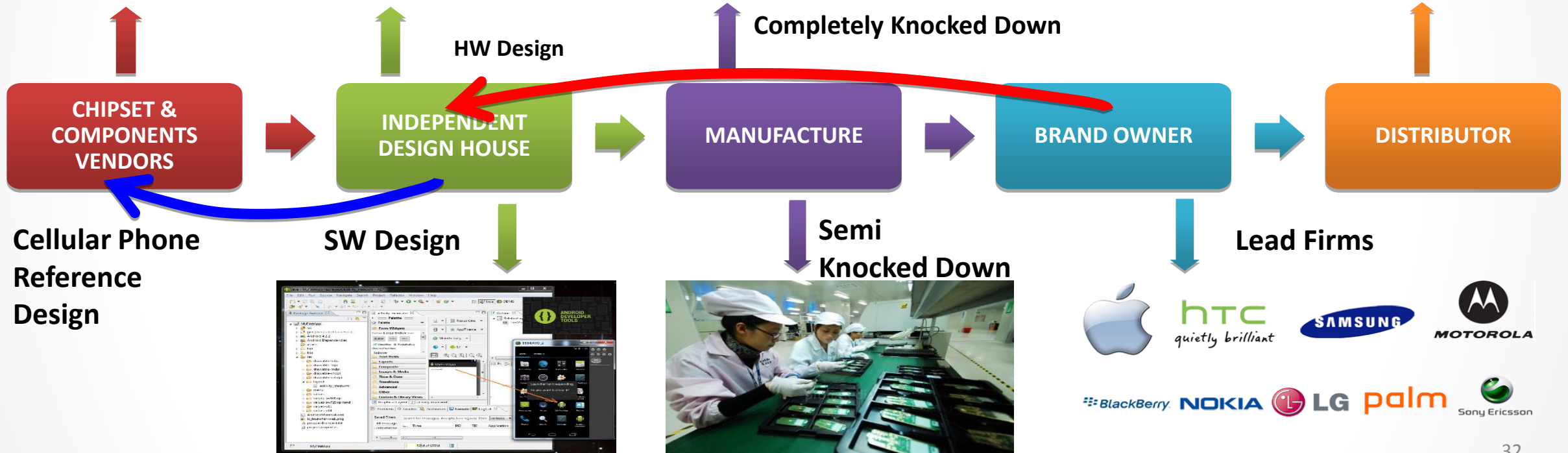
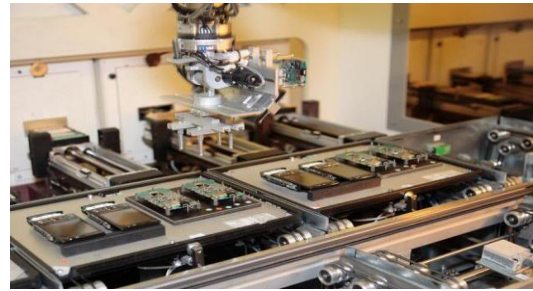
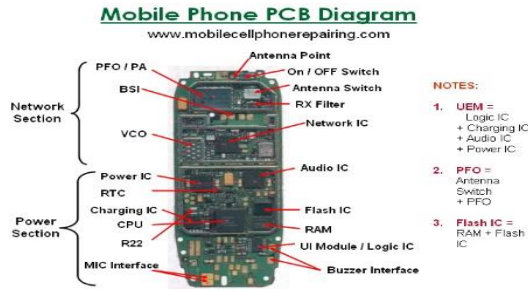


Capital Access

Capital access facilitation to banking or non-banking institutions;
Financial access to government institutions.

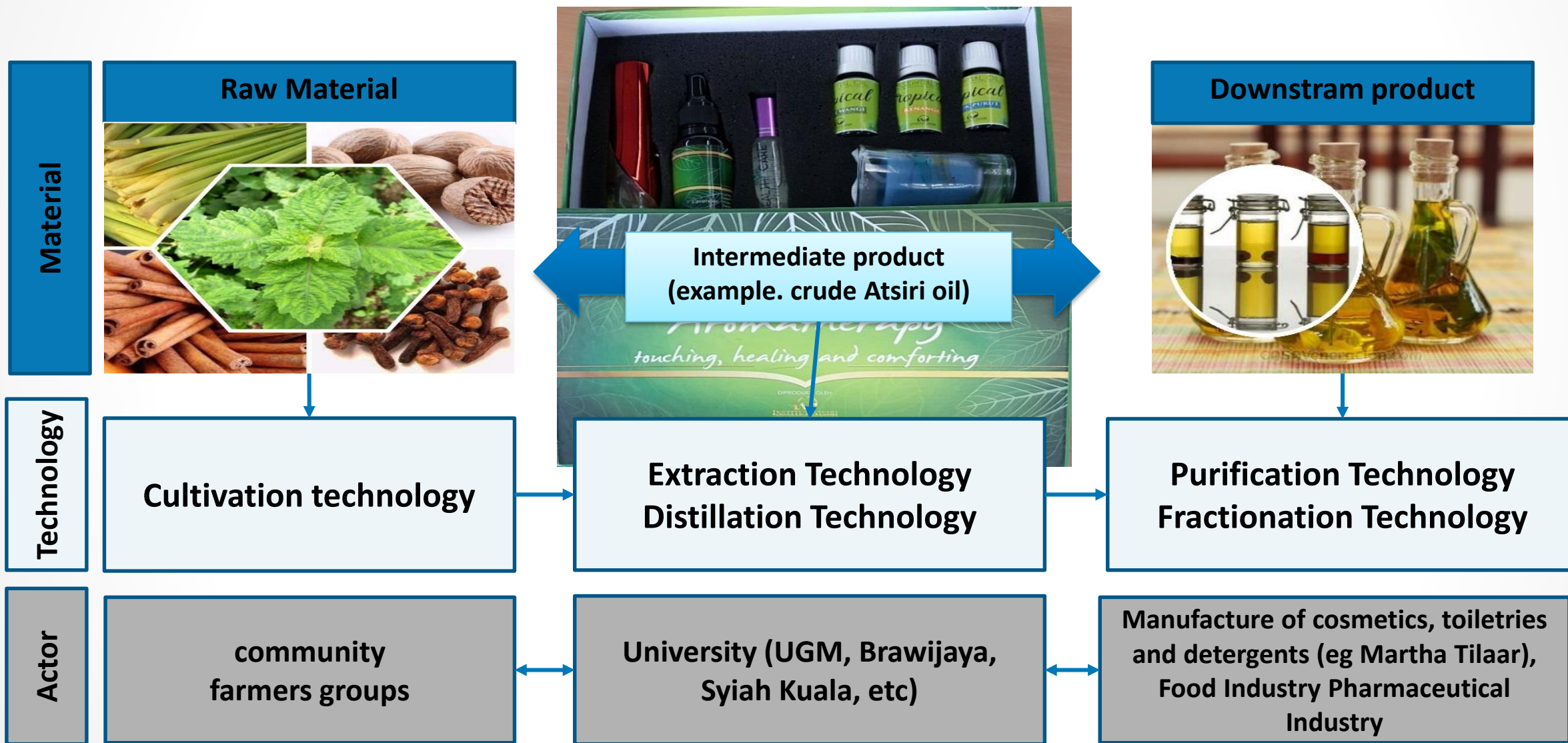


VALUE-CHAIN SMARTPHONE INDUSTRY



Case Study: Internal and External Synergy

Simple example of Atsiri supply chain



INNOVATION PRODUCT



Diving Propulsion Vehicle (DPV)
PT. Robo Marine Indonesia



Weather radar – PT. INTI



Bridge Pads
PT. Ngagel Citra Rubberindo



Purification Reactor of Patchouli Oil–
PT. Bahagia Jaya Indo



LRT – PT. INKA



Contactless Smart Card
PT. Xirka



Salt Pro Analysis
PT Karya Daya Syafarmasi



ADS-B – PT. INTI



Catalyst – PT. Pertamina
Cilacap dan Dumai



anti-radar paints



Organic Trash Processing Becomes Biogas
PT. Rancang Bangun Sejahtera



Stem Cell - UNAIR



**Village car west java
PT Tawon Banten**



**Metrokapsul
PT. TREKKA**



**Train chair
PT. INKA**



**Used Lubricant Processor to be
fuel oil - PT. BES**



**lifeboat
PT. Fiberboat Indonesia**



**panel aircraft N219
PT. Dirgantara Indonesia**



**Smart Level Crossing
Regional gov of Pekalongan**



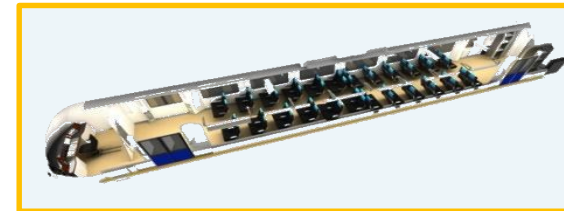
**multipurpose car ITS
PT. Smartech**



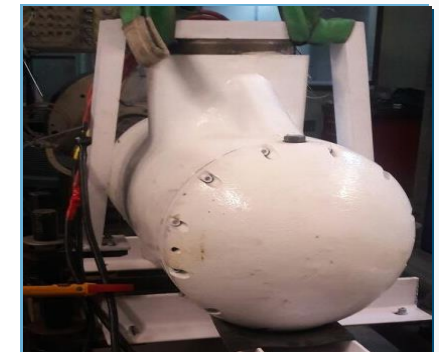
**waste processors POME to be
Biogas - PTPN V Riau**



**Rubber Airbag
PT. Samudera Luas Paramacitra**



**Train damper
PT. INKA**



**AC Induction Motor Bow Thruster
PT. RiSEA Propulsion Indonesia**



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