

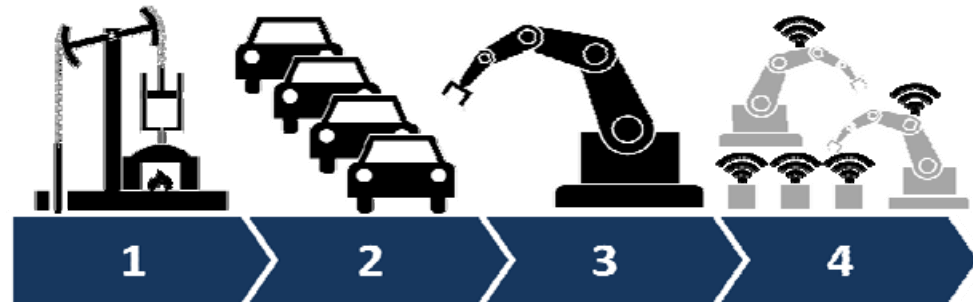
i³S

inclusive innovation industrial strategy
Transforming the Philippine Economy
in the New Digital Age

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4th Industrial Revolution: impact on industries



Mechanization via water & steam power	Mass production via assembly line & electricity	Automation through electronics & information technology	Cyber-physical systems
18 th Century	Late 19 th Century	20 th Century	2010 Onwards

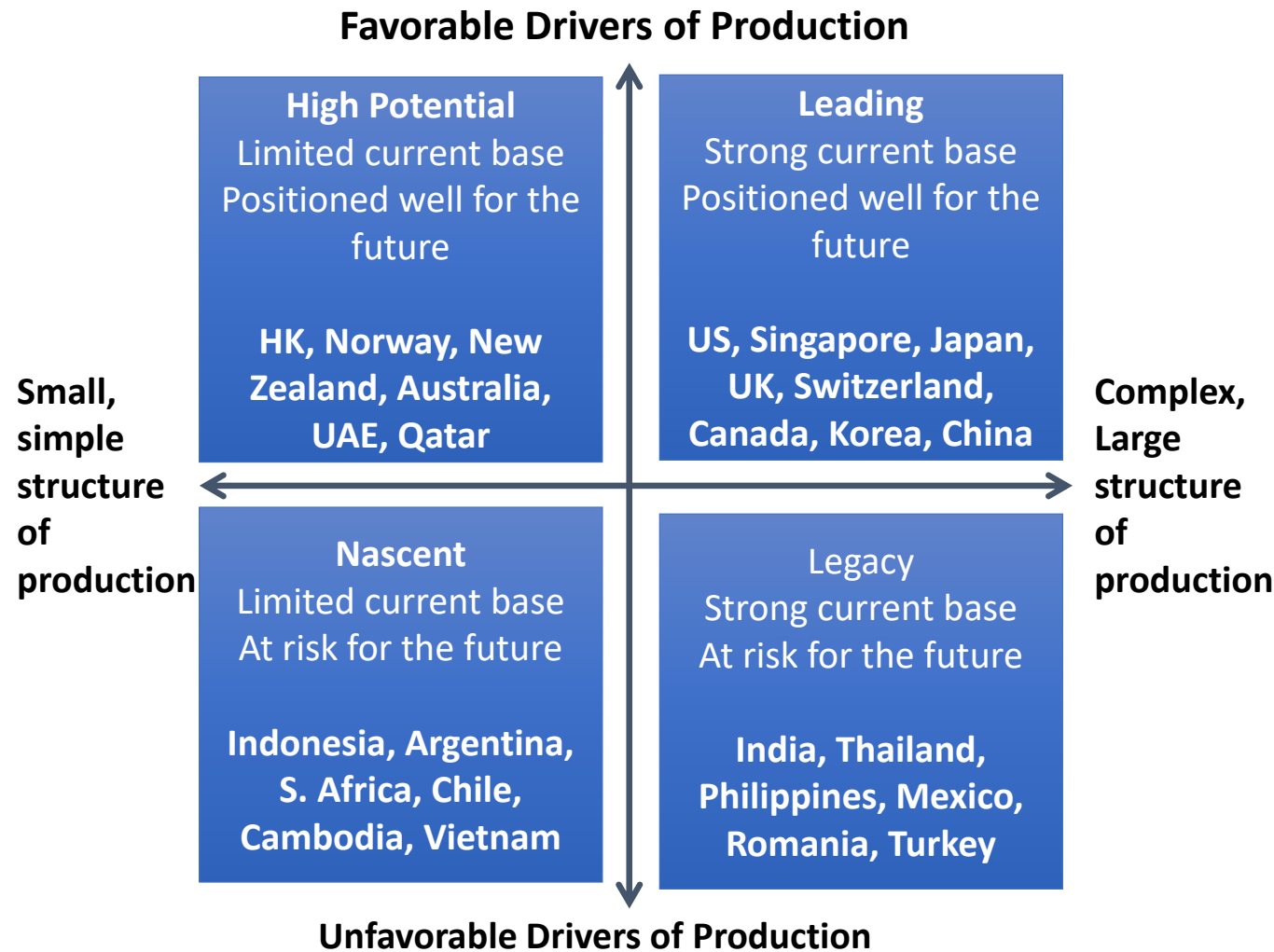


- spur development of new production techniques & business models that would transform global production systems
- drive new, more distributed & connected value chains
 - trigger selective reshoring, nearshoring & other structural changes in GVC
 - certain skills & capabilities will be required at each stage of the GVC
- add another layer of complexity to the challenging tasks of developing globally competitive industries
- put at risk the viability of low cost manufacturing & services exports as source of growth & development

Are we ready for Industry 4.0?

- **In general, many industries in the Philippines are still in Industry 3.0 with some transitioning from Industry 2.0 to 3.0**
- **IT-BPM: strong in voice, to move up the value chain, non-voice (engineering services) and high value knowledge process outsourcing are being promoted**
- **Auto industry: overall activity still in completely-knocked-down (CKD) assembly and parts manufacturing (large plastic and metal body parts, strategic parts) is currently being developed**
- **Electronics: mainly semi conductor manufacturing services (which comprises the bulk of Philippine exports) particularly in labor-intensive, back-end assembly process & test; to upgrade, efforts are focused on integrated circuit design, Big Data storage devices, 3d printers, wearables, smart home devices, & the like**
- **Agriculture still in mechanization phase**
- **McKinsey Global Institute: 48% of activities (18.2M jobs) could be automated, agriculture – 6M jobs, retail – 3.4M jobs, manufacturing – 2.4M**

Readiness for the Future of Production Assessment



- The World Economic Forum (2018) assessed the readiness of 100 countries for future production & harness full potential of Industry 4.0
- There are 4 country classifications (high potential, leading, nascent, & legacy) based on 59 indicators across drivers of production (vertical axis) & structure of production (horizontal)
- Legacy (where PH belongs): have a solid production base but countries need to reskill/upskill, upgrade technology platform, innovation, good governance

New Industrial Strategy

GLOBAL & DOMESTIC CONTEXT



Overall Goal

- ◆ Build innovation & entrepreneurship ecosystem
-> upgrade & develop new industries
- ◆ Remove obstacles to growth
-> attract investments, create jobs
- ◆ Strengthen domestic supply chains & participation in global/regional value chains
-> link manufacturing with agriculture & services

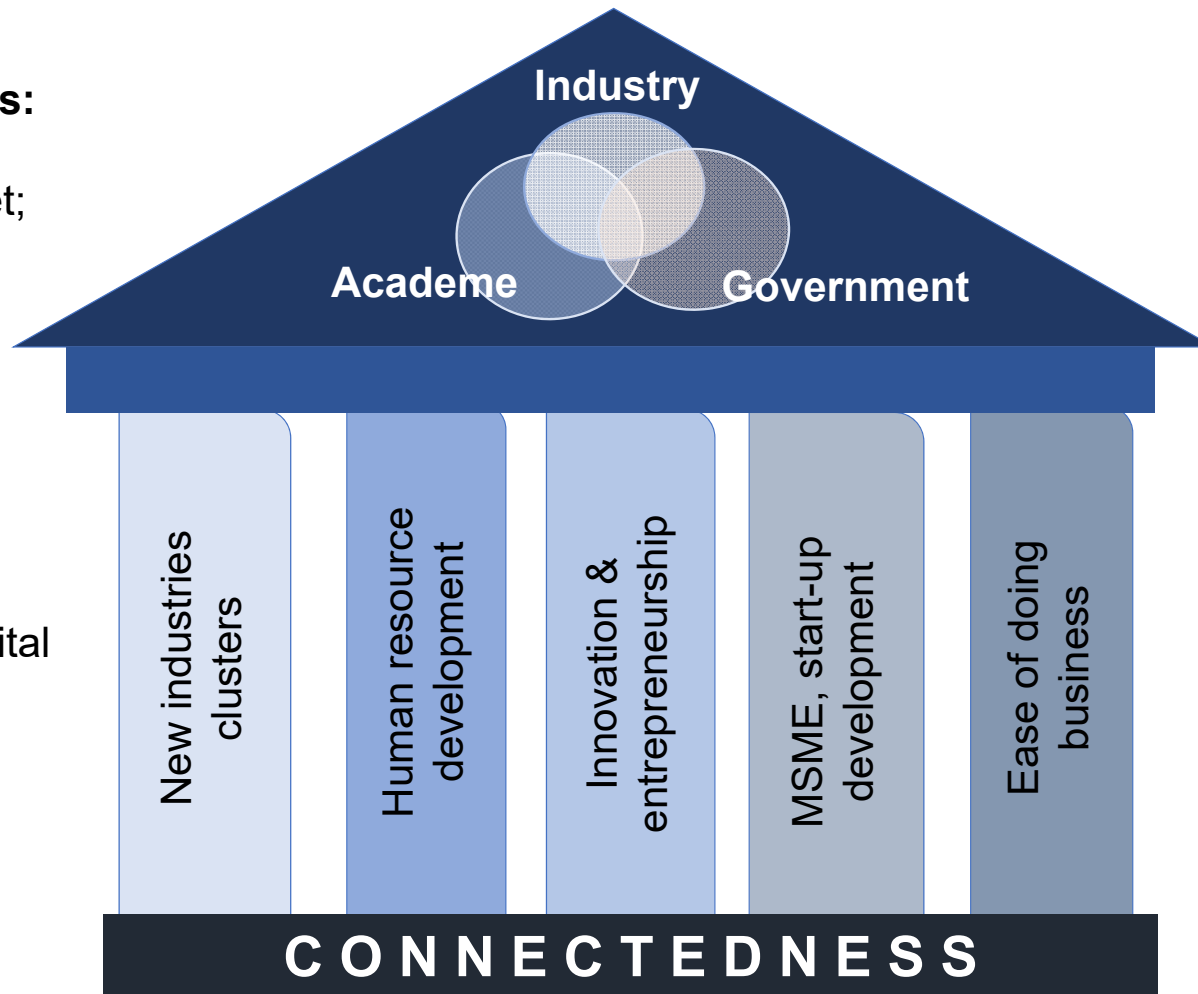


Role of Government: address coordination & market failures;
create proper environment for private sector growth

New Industries, clusters:
supply/value chain gaps;
domestic & export market;
trade & investment
promotion; incentives

**Human Resource
Development**
upgrading education
curricula, skills training
programs, improving digital
skills

MSMEs: access to
finance, markets, skilled
labor, technology
7Ms: mindset, mastery,
mentoring, money,
machine, market,
models



Strong government-academe-industry collaboration

i³S Five Major Pillars

Innovation & Entrepreneurship:
government-academe-industry
linkage, market-oriented
research; R&D centers,
innovation incentives;
shared facilities & support
for startups, regional
inclusive innovation hubs

Ease of Doing Business:
simplification of
processes, automation;
power, logistics,
infrastructure

Top 12 Priorities for Both Domestic & Export Markets



Electrical & Electronics



IT BPM, E-Commerce



Agri-business



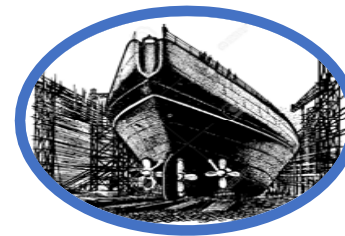
**Transport, Logistics,
Construction, Tourism**



Auto & Auto Parts



Tool & Die, Iron & Steel



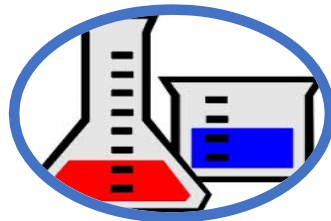
Shipbuilding, RORO



Innovation, R&D



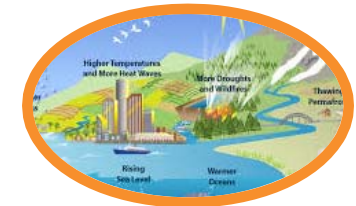
Aerospace Parts



Chemicals



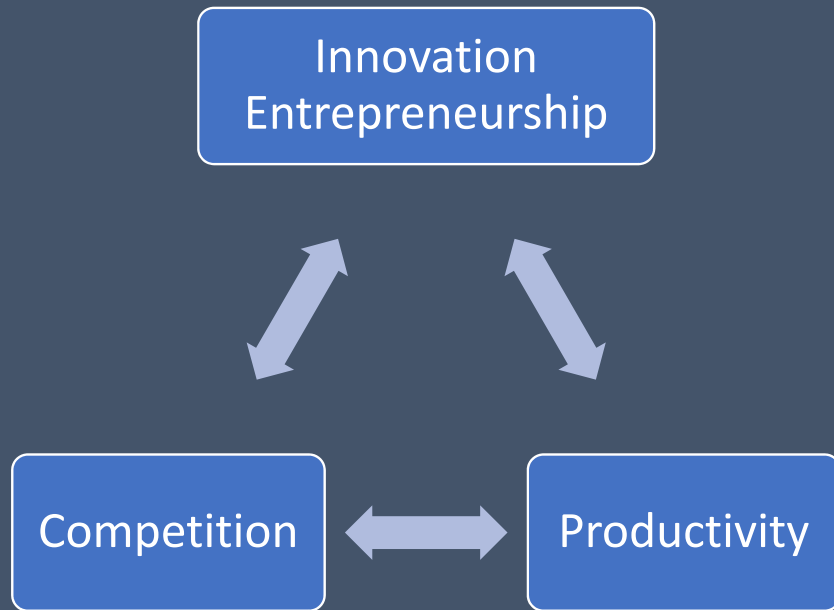
**Furniture, Garments,
Creative**



**Inclusive Business,
Climate Change**

Hi-technology, innovation/R&D, infrastructure, regional imbalance, labor-intensity, sustainability, spill-over/multiplier effects, value/supply chain linkage

Innovation is at the front & center of our new industrial policy



Underlying Framework of PH industrial strategy
COMPETITION- INNOVATION-PRODUCTIVITY NEXUS



Global Innovation Index 2018

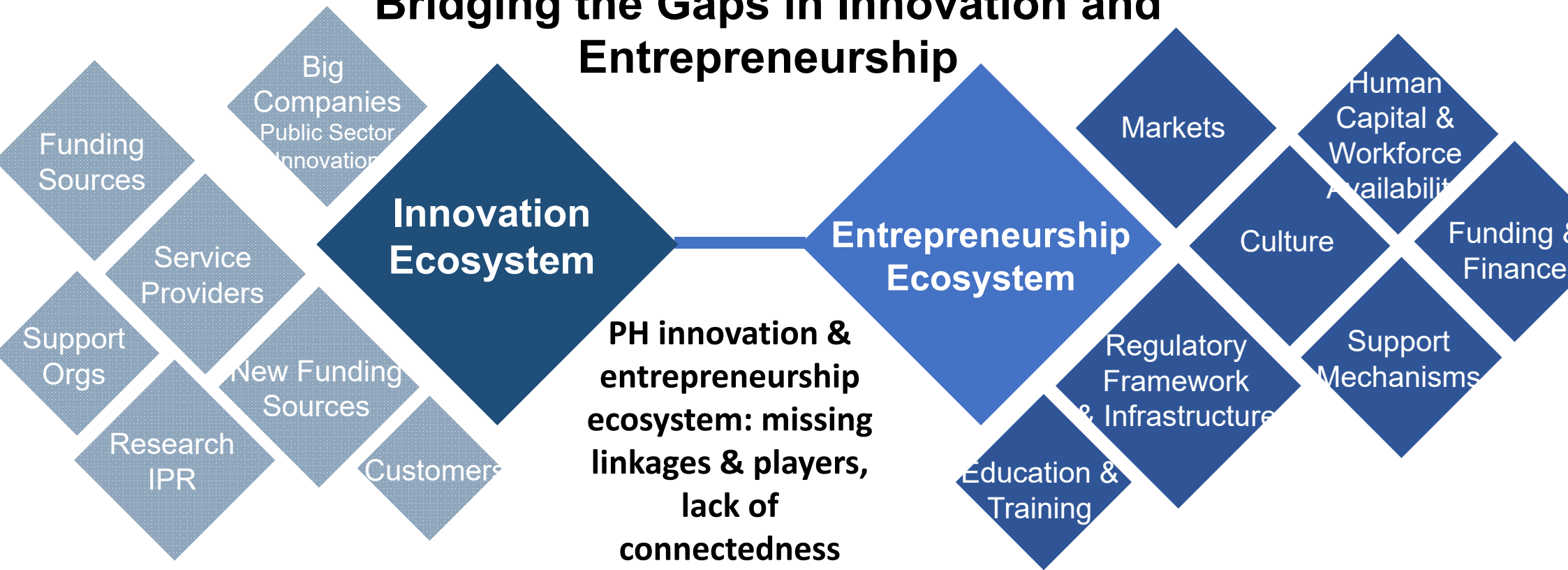
ASEAN

5. Singapore
35. Malaysia
45. Viet Nam
44. Thailand
57. India
- 73. Philippines**
85. Indonesia

PH scored lowest

- **Creative outputs:** intangible assets, creative goods & services
- **Human capital:** education, R&D spend
- **Market sophistication:** ease of getting credit, ease of protecting minority investors, venture capital deals
- **Innovation linkages, ICT infrastructure**

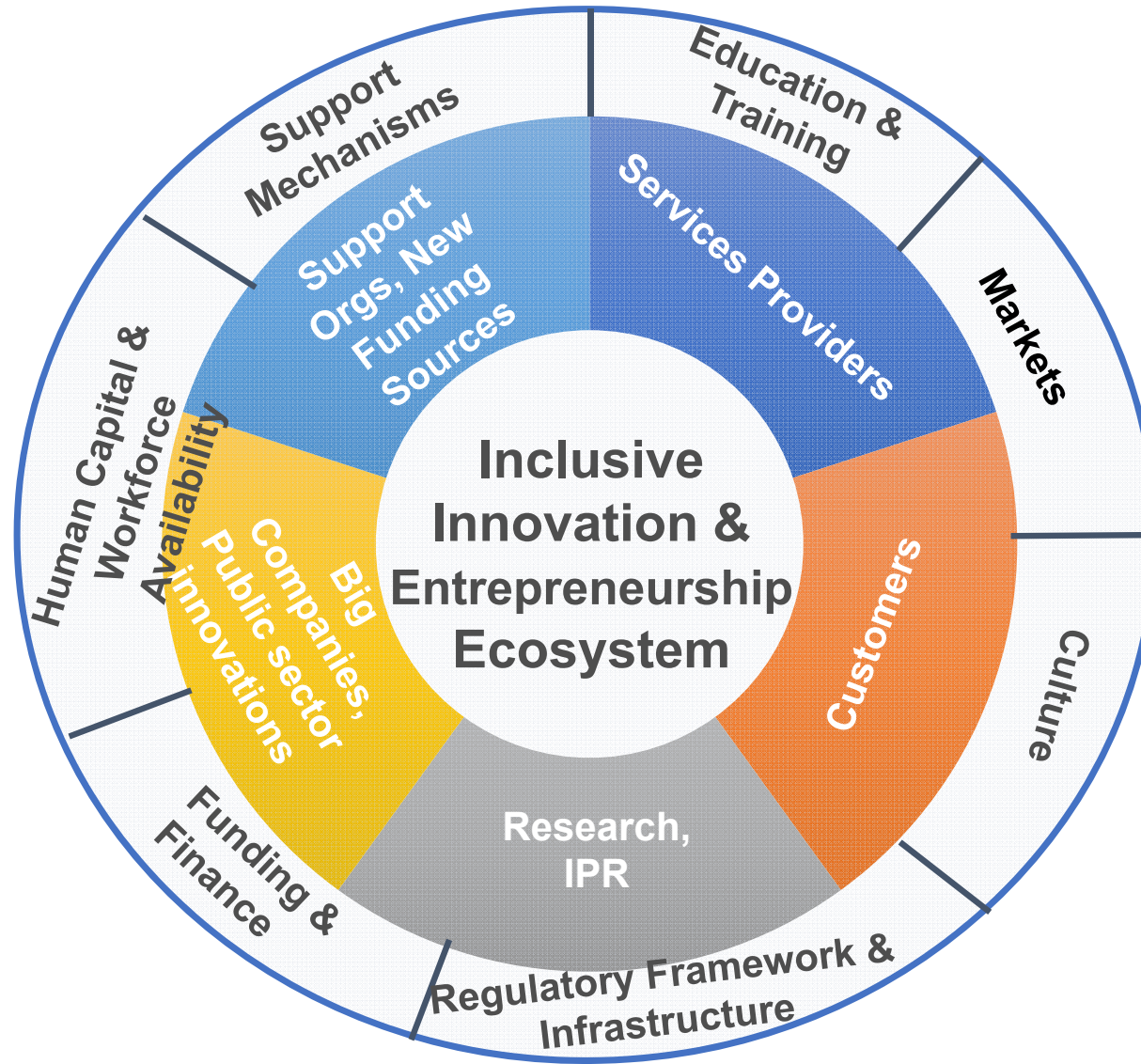
Bridging the Gaps in Innovation and Entrepreneurship



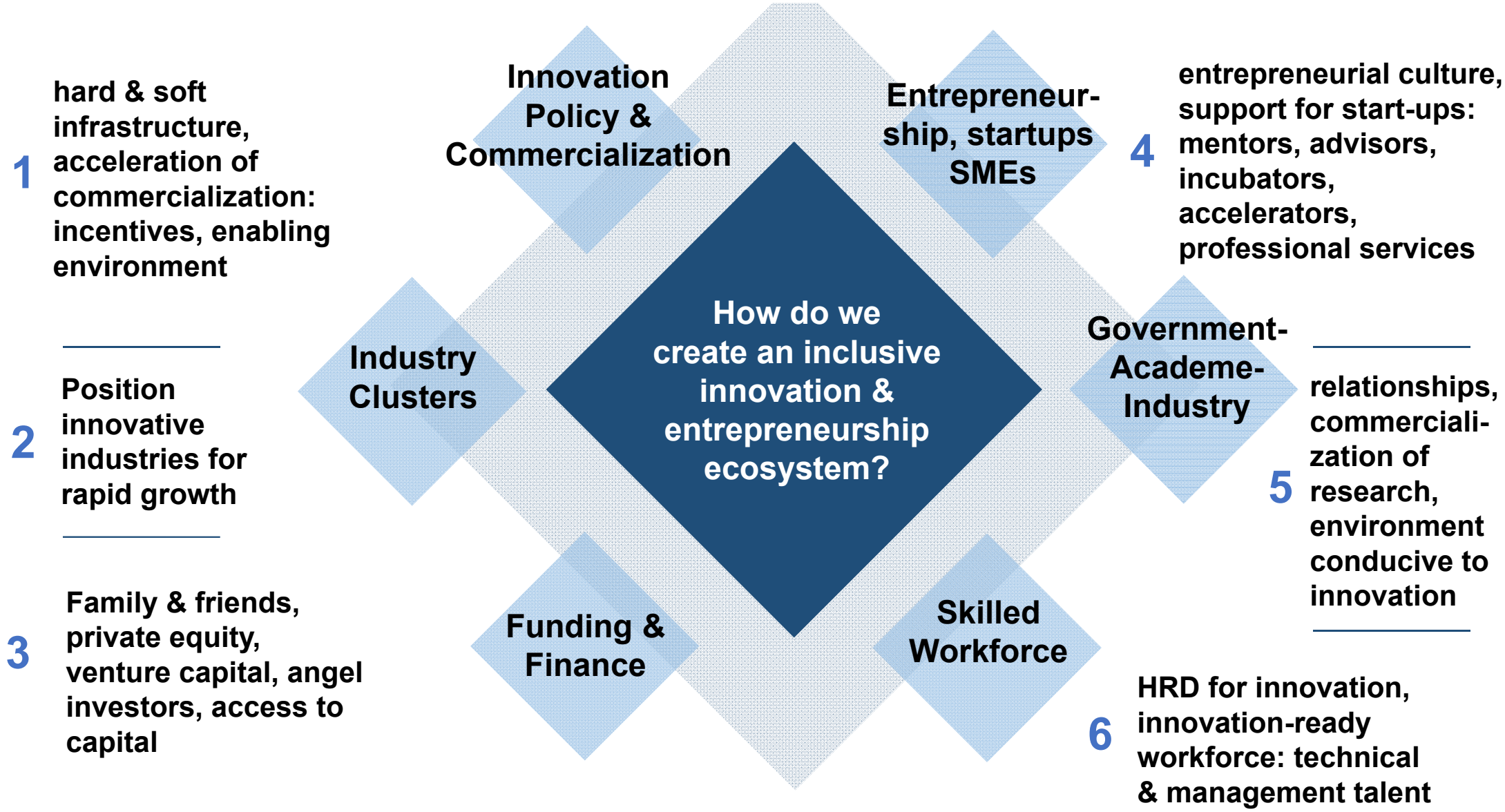
- ◆ **Strong collaboration among government, academe, industry** → **connected country**
 - ◆ **Strong business & policy environment** → **sustainable growth**
 - ◆ **Creative talent pool: critical mass**
- } **poverty reduction**

Vision: Inclusive Innovation & Entrepreneurship Ecosystem

- Strong collaboration: connected country
- Strong business & policy environment: innovation, jobs, investment
- Creative talent pool



- Incubation of innovation
- Academic industry partnerships to conduct basic, applied, market oriented research
- Support by government & funders
- Involve researchers & experts & industries across the country



Innovation Policy & Commercialization

Entrepreneurship, startups SMEs

Government-Academe-Industry

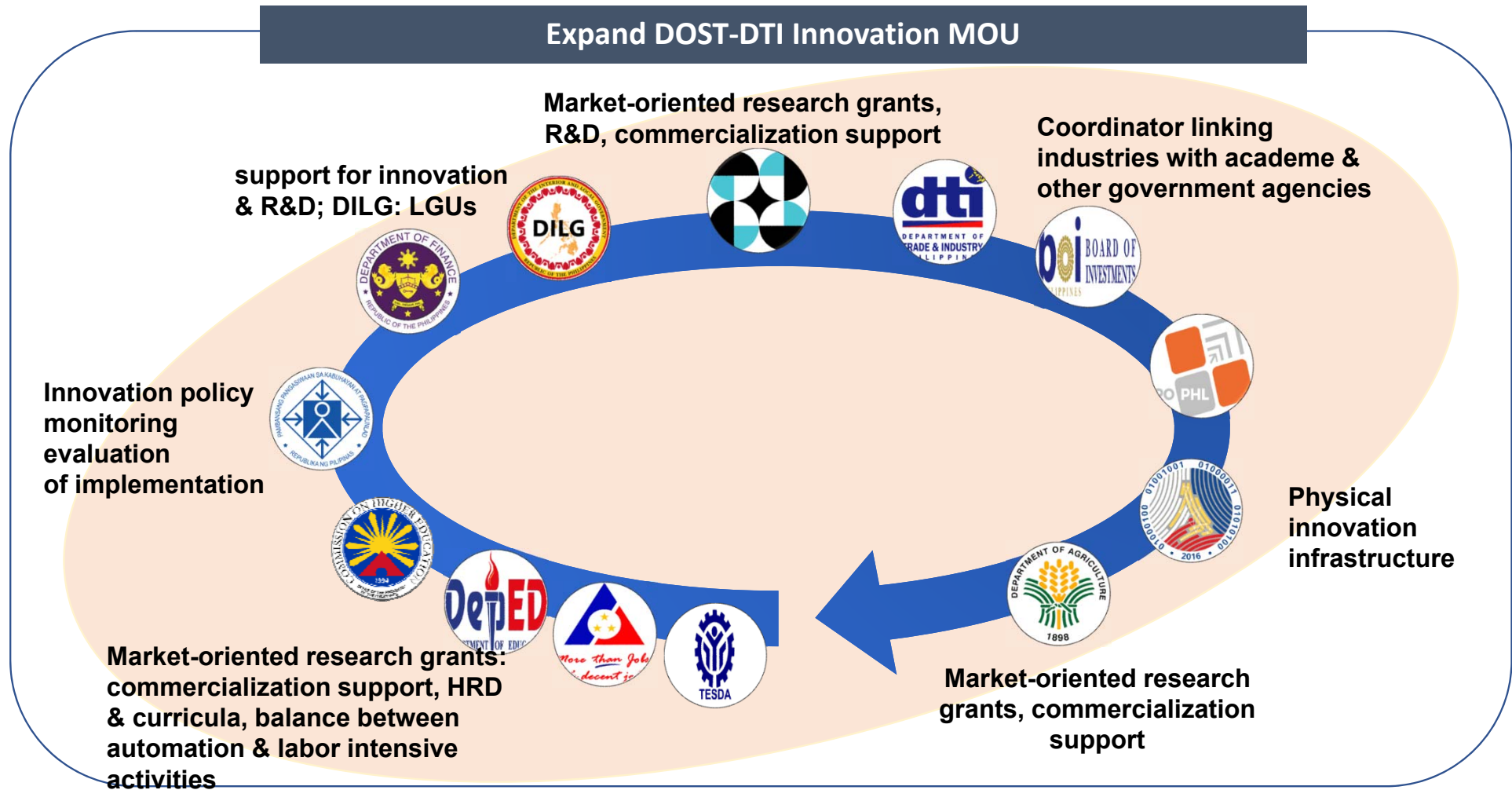
Industry Clusters

Funding & Finance

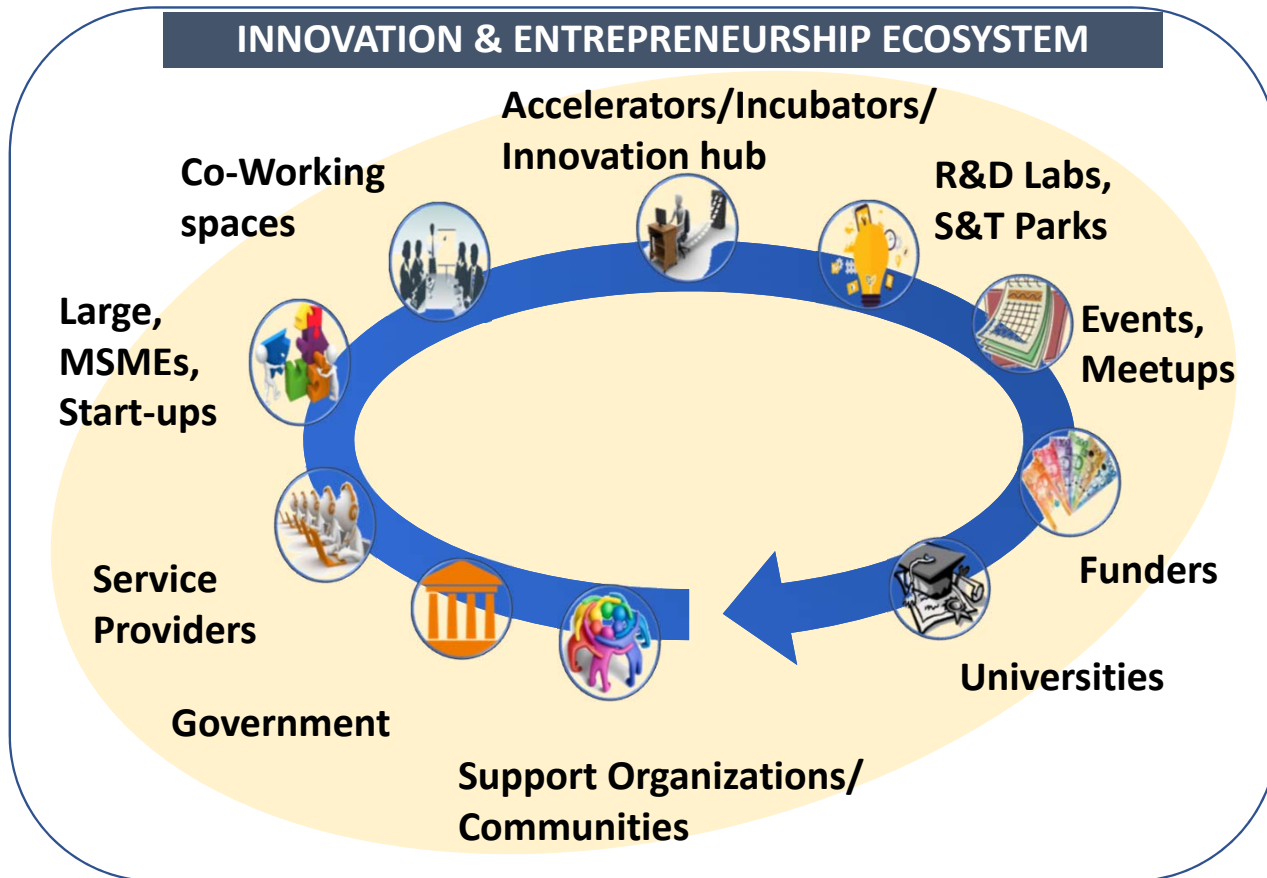
Skilled Workforce

How do we create an inclusive innovation & entrepreneurship ecosystem?

To promote collaboration & closer coordination within government



Regional Inclusive Innovation Hubs/Centers



- Regional & local inclusive innovation hubs: cornerstone of i3S, lie at the heart of our economic transformation
 - Bridge gap between industries & academe
 - Create regional ecosystem: **virtual & physical** made up of universities, R&D labs, S&T parks, incubators, fab labs, co-working spaces, investors, & LGUs, start-ups, SMEs, LEs
 - DOST & other agencies, industry, & academe
- Innovation focus on electronics, auto, aerospace, chemicals, IT-BPM, agribusiness

Upgrading Trajectories for Selected Industries

Electronics & electrical	R&D, IC design, facilities for advanced products & technologies (IoT, robotics, drones, AR, cognitive cloud, 3D printing), auto electronics (GPS, infotainment, wireless communication modules, telematics, autonomous vehicle sensors, VR systems, onboard computers, microprocessors), aerospace electronics, batteries, consumer electronics
Automotive	Auto electronics, ADAS components, engineering services outsourcing, electric motor powertrains like battery, EV
Aerospace parts & MRO	Flight control actuation systems, servo actuators, servo valves, galley inserts, structures & equipment, seat parts, lavatories, interior fit-out, panel assembly, electronics, airframes & sub-assemblies; MRO: base & line maintenance
IT-BPM & E-commerce	Engineering services outsourcing, data analytics, legal process outsourcing, health information management (preventive health, remote), animation & game development (3D, AR/VR), IT services, global-in-house, services embedded in manufacturing (R&D, design)
Agribusiness	mangoes, bananas, nuts, coffee, cacao, coconut, & other high value crops

Can we leapfrog to Industry 4.0?

- **PH new industrial policy i³S is innovation-focused**
 - **Innovation strategy: creative, connected communities**
 - **Government-academe-industry collaboration: basic & applied research providing solutions to societal issues & industry needs**
- **Regional inclusive innovation centers: at the heart of economic transformation, bridge gap between innovation & entrepreneurship**
 - **No one size fits all approach: regional/local conditions**
 - **Industry clusters to harness Industry 4.0 opportunities, strong business environment: investments, jobs, eliminate poverty**
- **Linking Manufacturing with Agriculture & Services: create more high-quality, high paying jobs**
 - **inclusive & sustainable growth: industries must be productive**
 - **Innovation is crucial to maintain high productivity level**

guided by i³S & with strong collaboration between government, academe, & industry; PH will be in a better position to leapfrog to Industry 4.0, transform economy in the new digital age, & uplift the lives of Filipino people