

***STIPI Working Paper***

**ASEAN Platform for Open Innovation and Entrepreneurship Development (APOED):  
Concept, Business Model and Programs**

**Abstract**

This report articulates platform concept and details platform strategies and programs by which grand challenges in the ASEAN region such as health, energy, food and water can be efficiently and effectively addressed through collective partnership mechanism of local, national and global stakeholders.

1. Definition and Concept
2. Platform Strategy
3. Platform Business Model
4. Platform Programs
5. Platform Governance
6. Milestone and Expectations

*Disclaimer*

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ASEAN region is exposed to various grand challenges such as poverty, health, water and energy. These challenges can be viewed as not only threats but also opportunities. Nonetheless, each individual ASEAN Member State (AMS) is facing common settings where their domestic market affordability is relatively low and supply capacity is not fully cultivated. To overcome these challenges, rather than individually competing for foreign direct investment, AMSs need to collectively develop innovation strategies and regional competencies as a whole.

Until now both bilateral and multilaterals assistance programs from international donors addressing these ASEAN-wide challenges are in nature fragmented, intermittent and not sustainable. Donors commonly introduce innovative practices and technologies either to directly alleviate the problem or indirectly make a practical contribution to building the capacity of recipients. Either of these is slow to be aligned with recipient country's policy and implemented at scale. Constrained by grant size and period of aid programs, continued financial aid is the only driver for successful scale-up and outreach to broader beneficiaries.

To ensure scale-up implementation, it is critical to design and implement the platform that efficiently and effectively address market creation and core capacity development. ASEAN Platform for Open Innovation and Entrepreneurship Development (APOED) can be defined as a stepping stone to build critical mass to achieve above-mentioned collective competencies. The platform will work as a collective mechanism to engage and coordinate diverse regional and international stakeholders, as well as to promote new entrepreneurs and technology development for future and challenge markets. Comprehensive public intervention and political commitment from AMSs are necessary to secure the feasibility of future challenge markets.

The platform is considered as an ASEAN and extended version of European Technology Platform (ETP), whereby off-line workshops and forums will be systemically organized. Off-line activities and on-line platform are designed and implemented to facilitate the development of platform eco-system in terms of fund raising and partnership planning. Due to the advancement of internet technologies, the efficiencies in social networking and demand aggregation can help networks expand. As a result, the best approach is neither to choose offline or online but to synergize both approaches by leveraging strong point of one approach to compensate weak point of another approach. Meanwhile, the platform will accommodate another initiative on ASEAN extension of Thailand talent mobility program to train young engineers/technicians for this future challenge industry. After the whole planning process, the on-line platform will be functioning as a permanent project and business development platform.

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## 1. Definition and Concept

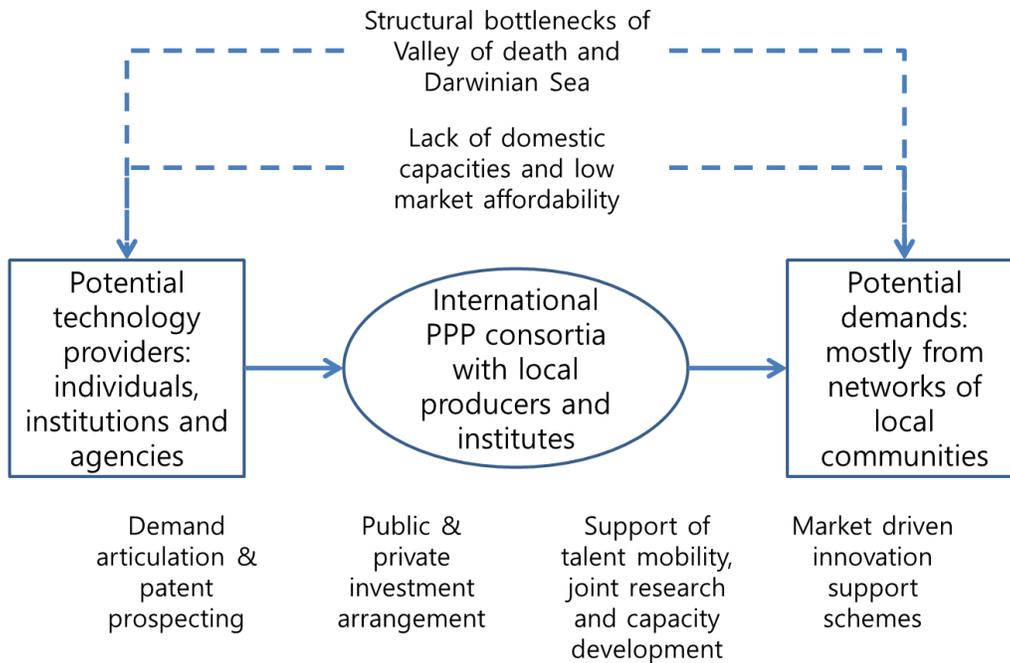
### Platform definition

ASEAN region is exposed to various grand challenges such as poverty, health, water and energy. These challenges can be viewed as not only threats but also opportunities. Through appropriate policy interventions, many challenges can be converted to new market opportunity. The concept of open innovation (Chesbrough, 2003) also provides the feasibility that the global technology will be outsourced and localized among ASEAN Member States (AMSs) if appropriate global technology localization partnership is arranged. New business opportunities together with technology transfer will encourage local entrepreneurship on a grand scale, leading to technological diversification and technological deepening in local industries. At present, each individual AMS is facing common settings where their domestic market affordability is relatively low and supply capacity is not fully cultivated. To overcome these challenges, AMSs need to collectively develop innovation strategies and regional competencies as a whole.

Platform architecture will then be designed to accommodate various stakeholders for coordinated implementation. Platform is proposed as a collective mechanism to overcome uncertainty and complexity in innovation for development. Conceptually, the goal of platform is to effectively and efficiently induce producers and consumers to interact and share their ideas and resources (Parker et al, 2016). Platform participants basically reap benefits from the ease to find things e.g. information, products, services, vendors or customers for which they are looking from the platform. To accommodate market and industry creation, ASEAN Platform for Open Innovation and Entrepreneurship Development (APOED) will enable technology providers to discover potential demands for their technology as well as opportunities to create new business partnership. Meanwhile, it allows local communities to feed in their demand for products/services to improve their future well-being.

**Platform concept**

ASEAN countries faces double structural bottlenecks for their industrial transformation and capacity upgrading. On one hand, AMSs face structural bottlenecks of Valley of Death and Darwinian Sea<sup>1</sup> that other industrialized countries have commonly experienced. ASEAN countries, on the other hand, suffers from their lack of domestic capacities and low market affordability. Consequently, platform will work as a stepping stone to bridge gaps between technology providers and consumer demand to accommodate market and industry creation.



<sup>1</sup> There are two major barriers between research outcome and commercial exploitation ( Auerswald and Branscomb, 2003). “Valley of Death” is the first barrier taking places during transition from basic research to innovation and new business. Even the best of research outcomes can die before becoming a commercial product because of the lack of proper support, including funding and marketing capabilities. “Darwinian Sea” is the second barrier that separates commercialization (product development and marketing) and industrialization (market expansion). When the company or product undergoes natural selection, only the fittest will survive.

Focusing on business model development and technology localization to address ASEAN challenges, platform mechanisms need to incorporate demand articulation and patent prospecting of which potential markets has yet fully realized. The international public-private partnership consortia is also required to coordinate local stakeholders between government, industry and academia to facilitate technology transfer and technology localization. At the same time, the support of talent mobility, joint research and capacity development programs will be efficiently and effectively coordinated and aligned. At last, market driven innovation support schemes such as government procurement will be provided to ensure the sustainability of new business development.

### **Platform value creation**

To overcome ASEAN challenges, AMSs need to rethink the ways in which multi stakeholders interact in offering products and services at affordable price to local communities as well as fostering technological localization. Conceptually, platform value creation arises from its ability to facilitate interactions between external producers and consumers. Platforms strategy then aims to attract the desired participants and enable the right interactions. Platform participants will gain benefits from the accessibility to the pool of information, products, services, vendors or customers joining in the network. Broadly speaking, the value of the service increases with the number of users. The larger network enables better matches between supply and demand and provides richer data that can be used to find matches. Greater scale generates more value, which attracts more participants. The scale economies will attract potential stakeholders to participate, contribute their resources and innovate in the platform (Choudary, 2015; Eisenmann et al, 2006).

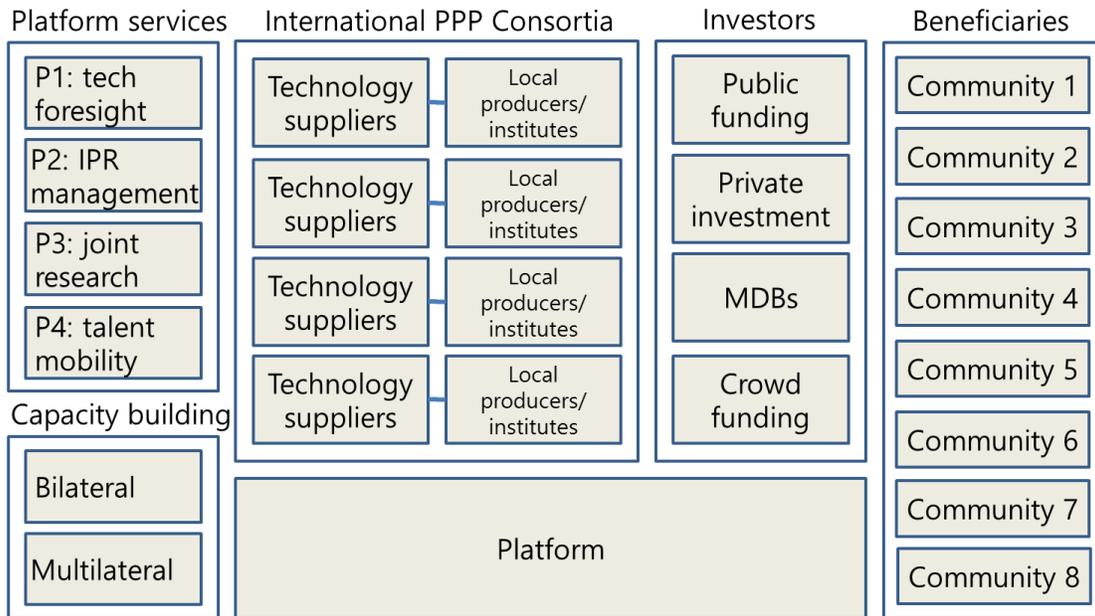
Constrained by low absorptive capacity and low market affordability, ASEAN platform is proposed as a mechanism to check market feasibility and induce critical mass of relevant stakeholders, especially when market is yet realized. As a result, the value creation of ASEAN platform, on the consumer side, will come from its ability to respond to local communities' expectation to solve their problems of energy, health, water, agricultural productivities and others. Meanwhile, the ability to facilitate

technology providers and local producers to access to potential demand is crucial on the producer side. In addition, platforms normally provide additional services to enhance the volume and quality of interactions. To accommodate future industry and affordable market creation, the ASEAN platform will provide access to services (i.e. technology foresight, Intellectual Property Right (IPR) management, joint research development and talent mobility program) and capacity development programs from bi- and multi-lateral agencies. At the same time, to maximize positive network effects, the platform needs to provide access to curation mechanisms that enhance the quality of interactions i.e. whom to let onto the platform and what participants are allowed to do.

### **Platform architecture**

Platform provides the infrastructure and rules for a marketplace that bring together producers and consumers. The goal of platform is to induce producers and consumers to interact and share their ideas and resources. Effective governance will inspire outsiders to bring valuable intellectual property to the platform (Van Alstyne et al, 2016). An open architecture allows players to access platform resources and create new sources of value. Meanwhile, open governance allows players other than the owner to shape the rules of trade and reward sharing on the platform. The players in the platform ecosystem comprise four types of players; platform owners, producers, beneficiaries and service providers.

The owners of platforms control their intellectual property and governance. On-line and off-line activities serves as the interfaces between multi-stakeholders. International PPP consortia (i.e. foreign technology providers, local producers and local research institutes) will work as producers; meanwhile local communities will be the beneficiaries. However, to facilitate the business development and partnership planning, platform eco-system offers additional services required for sustaining business growth including platform services, capacity building and fund raising. The ASEAN platform is considered as an ASEAN and extended version of European Technology Platform (ETP).

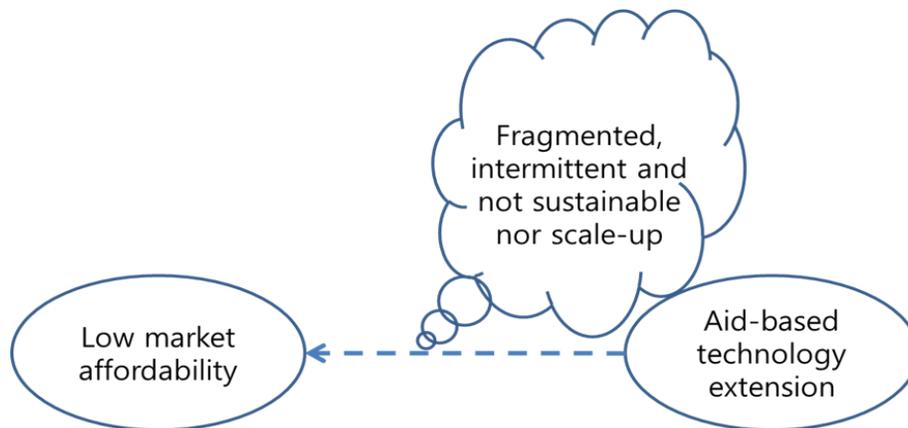


## 2. Platform Strategy

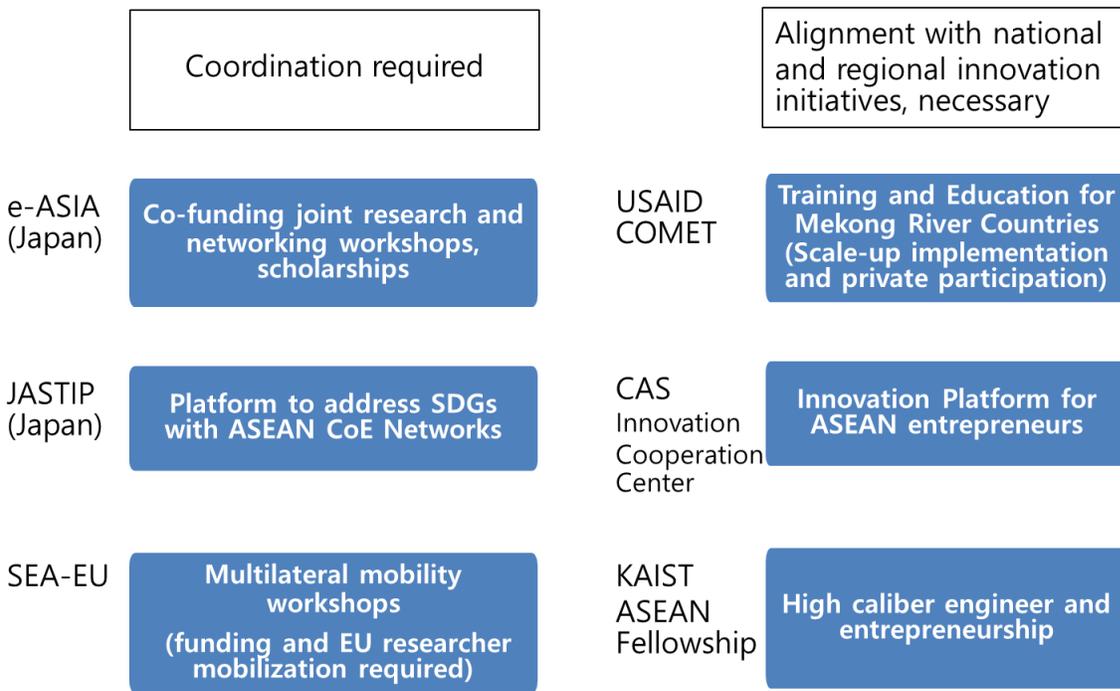
### Capacity development partnership: limitations and requirements

Until now both bilateral and multilateral assistance programs from international donors addressing these ASEAN-wide challenges are in nature fragmented, intermittent and not sustainable. In terms of aid-based technology extension, donors commonly introduce innovative practices and technologies either to directly alleviate the problem or indirectly make a practical contribution to building the capacity of recipients. Either of these is slow to be aligned with recipient country's policy and implemented at scale. Constrained by grant size and period of aid programs, continued financial aid is the only driver for successful scale-up and outreach to broader beneficiaries.

To ensure scale-up implementation, it is critical to design and implement the platform that efficiently and effectively address market creation and core capacity development. The ASEAN Platform for Open Innovation and Entrepreneurship Development will work as a collective mechanism to engage and coordinate diverse regional and international stakeholders, as well as to promote new entrepreneurs and technology development for future and challenge markets. Constrained by ASEAN-wide low market affordability, comprehensive public intervention and political commitment from AMSs are necessary to secure the feasibility of future challenge markets.

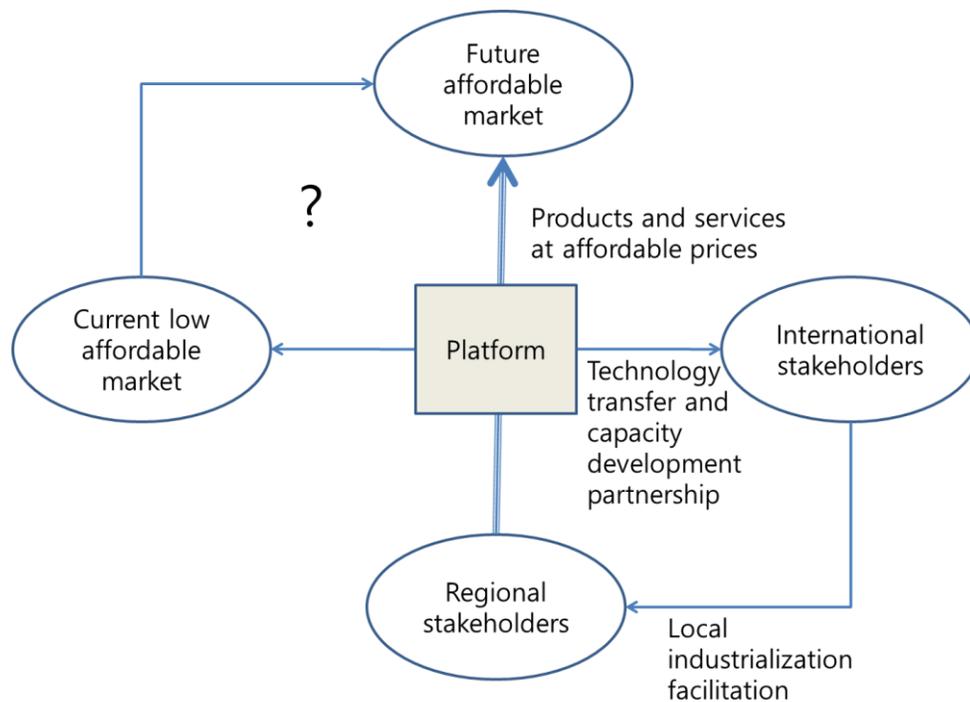


There are many bi-lateral and multi-laterals assistance programs for capacity development programs available for ASEAN region. The scope of those assistance programs covers the wide range of talent mobility, joint research program and capacity development. Nevertheless, it is found that those initiatives fail to create critical mass and provide only partial and fragmented solutions for beneficiary countries. To take advantage from strong concentration of competences, the platform owner should take a lead role to coordinate and align those capacity development partnerships with national and regional innovation initiatives.



**Future affordable market creation and Public Private Partnership (PPP)**

Even though the local communities are now facing low market affordability, it is expected that the productivity increase will enhance affordability in those remote communities in the future. As a result, policy interventions in public sectors may be used to facilitate the market creation from the perspective of future market<sup>2</sup>. To ensure that technology localization together with the industrial diversification and deepening process are met, tentatively international public private partnership (PPP) covering wider groups of local stakeholders (i.e. government, industry and academia) should be proposed as target beneficiaries for the market creation supports.



<sup>2</sup> For instance, long-term payback guarantees, strategic procurement and others can be used to facilitate the process. Likewise, Thailand has experienced this process when the country attempted to create automotive market and utilize tax deduction scheme to induce foreign direct investment. At that time, even though beneficiaries were limited to a few multinational automotive assemblers and generated little impact on indigenous capacity development, Thailand could build up the automotive production base and create pickup trucks as the national product champion (Abdulsomad, 2003).

### 3. Platform Business Model

Platform is an ecosystem which focuses on the interaction among participants for creating value with open boundary. In order to establish Public-Private Partnership (PPP) consortia which is the main implementation mechanism of ASEAN Platform, there are five important components and activities of platform business model to be concerned.

PPP quality management		Revenue structure	
Tech providers	Three phase Ex Ante evaluation	User participation	Demand articulation through networks of local communities
Local producers	Minimum Ex Ante evaluation then Ex Post evaluation with capacity building assistance	Revenue share	Yes or No, If yes, direct (service charge) or in-direct (equity participation)
Local universities		Money side	1 <sup>st</sup> : Public entities 2 <sup>nd</sup> : PPP consortia 3 <sup>rd</sup> : Communities

Platform Investment	Platform management	Platform marketing
<ul style="list-style-type: none"> <li>Public funding: subsidies, grants, etc</li> <li>Indirect: Tax incentives etc</li> </ul>	<ul style="list-style-type: none"> <li>Planning, management and M&amp;E</li> <li>Policy alignment with AMSs, ASEAN and bi/multi-lateral agencies</li> <li>Activities: On-line and off-line (flagship programs and contest)</li> </ul>	<ul style="list-style-type: none"> <li>Voucher &amp; Procurement</li> <li>Long-term payback guarantee</li> <li>End product &amp; service marketing</li> </ul>
Private funding venture, PF, etc	Platform services: centralized (project based) vs. distributed (general)	

#### 1) PPP quality management

Gaining the reliability of participants is necessary for managing the quality of the platform and securing its continued growth (Boudreau and Hagiu, 2009; Kim, 2016). Merely increasing the number of participants might cause an increase in the number of unwanted participants or in opportunistic behaviors, which in turn worsen the quality of the platform and causing desirable participants to leave. Platform regulation should take certain forms of screening before or after participants enter the platforms – ‘ex ante’ or ‘ex post’ respectively. To attract the potential participants to join in the consortia, the criteria for screening and monitoring foreign technology providers, local producers and local universities varies. Foreign technology providers faces three phase evaluation to ensure the

tech transfer will be met. However, to promote the tech localization and specialization, both local producers and local universities will face minimum evaluation. Even they fail to perform accordingly; capacity development program will be later provided to support them to take part in the process.

## **2) Platform investment**

The Public-Private Partnership (PPP) consortia form a new type of organizations and an eco-system in which the various actors play a certain role in solving societal problems. Governments face a situation where budgets are reduced, but their roles to bring public services to end users are necessary. Accordingly, fundamental changes are taking place on how government operates and the choices that are made related to which stakeholders are involved or invited to participate in the processes. (Janssen and Estevez, 2013; Walravens and Ballon, 2013). To establish PPP consortia, investment fund comes from two sources. The first source is public funding which might either directly come from government subsidies and grants or indirectly subsidized in a form of tax incentive. The second source is private funding through venture, project financing and others.

## **3) User participation and revenue structure**

Platform owner must consider how to select participants for platform business ecosystems, how to promote their activities, and how to create a revenue structure to make both the platform and the participants grow together (Eisenmann et al., 2006; Kim, 2016). The platform will fail if participants do not continuously support it, even if the market has already been established. A win-win business ecosystem for all participants should be maintained by appropriate revenue structures. The participants who pay for the service, so called money side, can be sub-divided into three categories. As the platform addresses unaffordable challenge markets, the first to sponsor the platform are the public entities such as AMS government and multilateral agencies. The second is the supply side: the PPP consortia comprising of foreign technology suppliers, local producers and local universities. At last, the local communities can be the last money side. Once their income increase, the local communities will buy the products and services from the PPP consortia.

#### **4) Platform marketing assistance**

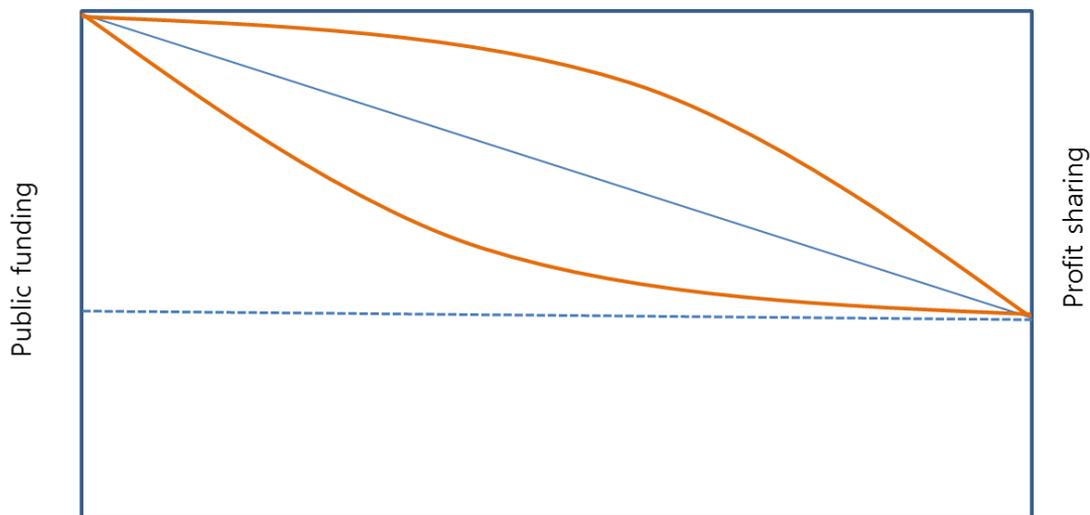
Platform should be valued from a public point of view, as the products and services offering for local communities will contribute to the increase of social welfare. Since the ASEAN market suffers from relatively low purchasing power, governments should play an important role in supporting the platform ecosystem development. To encourage more sustainable innovation, the platform needs to create the market conditions in which winners could emerge and attract sufficient investment from industry and skeptical capital markets. Demand-pull innovation policies will be used to incentivize foreign technology suppliers and local producers to invest, localize supply chain and innovate in the secured market opportunities (Edler, 2007; Aschhoff and Sofka, 2008; OECD, 2010). Examples of platform marketing assistance schemes for products/services - which deliver a societal good but have weak consumer and market pull - include voucher and public procurement, long-term payback guarantee, end product and service marketing.

#### **5) Platform management**

Platforms provide a space in which stakeholders can share and discuss their interests. The platform is meant to support the joint identification of options to balance the various interests that may exist; long-term and short-term, local up to global, public, private and civic. To sustain the growth of platform ecosystem towards achieving solutions to the societal grand challenges, a set of planning, monitoring and assessment measures and procedures will be developed to help confirm or adapt the criteria for the ASEAN platform status and progress. Policy alignment amongst AMSs, ASEAN and bi/multi-lateral agencies is crucial to create a synergetic impact that will enable the AMSs to address the region challenges. To attain the shared goal and action plan, the platform owners will design various activities which will be detailed later; for example, on-line platform and off-line flagship program, off-line contest program. In addition, platform services provided to platform participants can either be distributed as general services to individual need or be coordinately centralized and managed for a specific off-line project.

**6) Platform management business model**

With appropriate policy interventions to overcome a lack of finance or regional agreements, a benefit of the ASEAN platform is that it not only brings products/services to the unaffordable challenge market but also creates a work-share between public and private sectors. Without clear expectations of return, private business hesitates to participate in the platform and invests in demonstration consortia projects. It is, therefore, a crucial role of policy intervention to create the potential lead market and to investment in managing and coordinating the platform activities. However, as the value networks of platform participant and revenue stream of PPP consortia continue to grow, profit sharing from private sectors can contribute back to the platform in forms of service charge and equity participation. In turn, public funding in platform management and activities will decrease. However, as the platform focuses on products/services which deliver a societal good but lack of market demand, the complete transition of AESAN platform from a cost center to a profit center is not recommended. To a certain point, the platform should remain functioning as a public service provider. Three transition paths to a partial profit center can be also conceived: profit sharing driven path, public funding driven path and in-between path.



#### 4. Platform Programs

##### Platform launch strategies: synergy of on-line platform and off-line programs

The key objective of the ASEAN Platform is to unite stakeholders around a common vision and approach for the development of the technologies concerned, with the focus of well-being betterment and local industrial advancement in the region. Success of the Platform depends on how to engage relevant stakeholders from surrounding sides to enhance interactions among participants. Eight significant platform launch strategies are articulated in order to avoid chicken and egg dilemma (Parker et al, 2016) and the strategies for ASEAN platform are conceived accordingly.

Strategies	Definition	ASEAN Platform
The-follow-the-rabbit strategy	Non-platform demonstration projects to model success	Contest
The piggyback strategy	Connection with an existing user base	MI DB and others
The seeding strategy	Value unit creation relevant to at least one set of potential users	Rural development projects
The marquee strategy	Incentives to attract key users	Flagship programs
The single-side strategy	Business creation around products or services for a single set of users	Capacity development programs
The producer evangelism strategy	Platform design to attract producers	Platform services
The big-bang adoption strategy	One or more traditional push marketing to attract a high volume of interests	ASEAN Summit
The micromarket strategy	Targeting a tiny market of members already engaging in interactions	Khon Khaen

The eight ASEAN platform launch strategies are integrated into one online platform and two offline programs. Offline programs and online platform are designed and implemented to facilitate the development of platform eco-system in terms of fund raising and partnership planning. Due to the advancement of internet technologies, the efficiencies in social networking and demand aggregation can help networks expand. As a result, the best approach is neither to choose offline or online but to synergize both approaches by leveraging strong point of one approach to compensate weak point of another approach.

Apart from such limelight online and offline programs, other strategies should be incorporated to foster the ASEAN platform ecosystem development. Additional strategies should focus on building collective partnership and motivating relevant stakeholders at the local, national and global levels to join forces and bundle resources. For instance, Mekong Institute's Database and others' serve as a good start to connect existing industrial stakeholders to the Platform. ASEAN Summit could be an effective channel to gain political commitment, raise international public awareness and promote the Platform. Meanwhile, Khon Kean Province provides a playing field for the micromarket strategy. Some local business enterprises and public agencies have proactively shown a great effort in bottom-up initiatives for industrial transformation in the Northeastern Thailand.

### **Platform program 1: on-line platform for ecosystem development**

Online platforms rely on information and communications technologies to reach their users, instantly and effortlessly. Due to efficiency gains from access to information, online platforms offer the potential to enhance citizens' participation across borders and increase consumer choice, thereby contributing to improved competitiveness of industry and enhancing consumer welfare. Presently, online platforms available for the collaborative economy come in various shapes and sizes and continue to evolve.

The first generation online platform is 'Database Model'. For instance, through its ICT-based networks and platforms, the APCTT promotes technology transfer and advisory services in the Asia-Pacific region. The database provides information on the technologies available for transfer (technology offers, technologies needed (technology requests) as well as the opportunities for business cooperation.

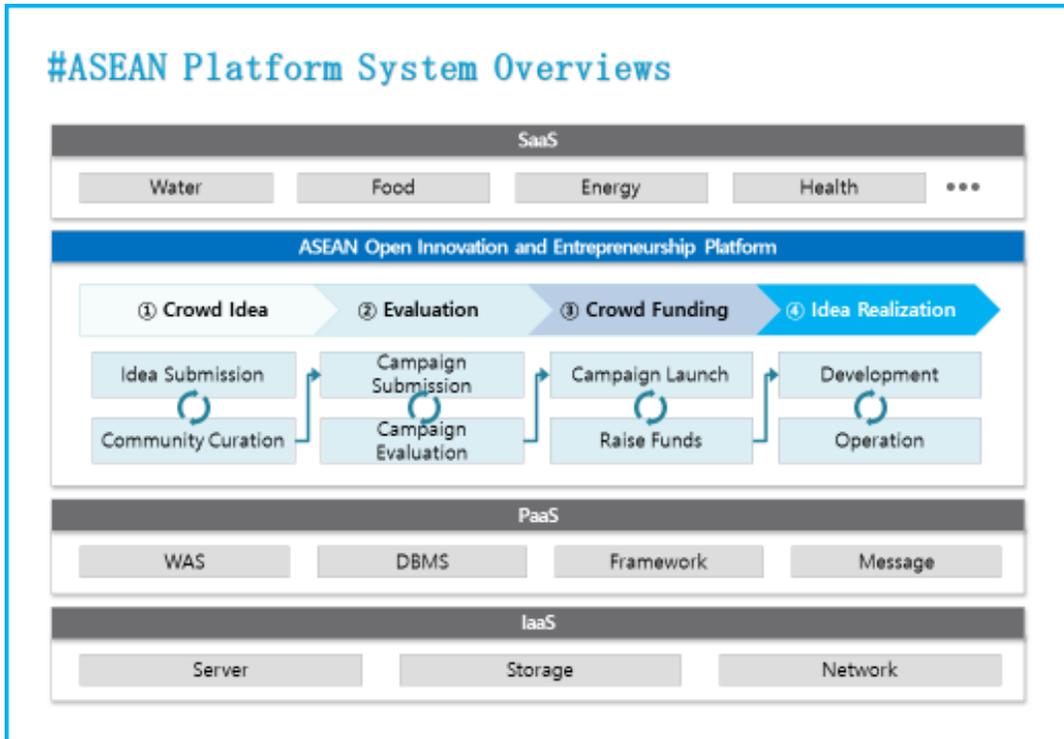
The second generation platform is called 'Interactive Model' that facilitates interactive communications between their users. The European Technology Platforms (ETPs), industry-led stakeholder fora, hold online activities through a Web-based seminar where the participants gain ability to interact with the panel and the ongoing debate in real-time. Efforts are being made on to mobilize industry and other stakeholders within the EU to work in partnership and provide a coherent business-focused analysis of research and innovation bottlenecks, alongside opportunities related to societal challenges and industrial leadership (European Commission, 2010).

The third generation online platform comes in a form of 'Serendipitous Discovery centered Ecosystem Development Model' (Parker et al, 2016), that linked with a few local Database. Serendipity is defined as unexplored and unplanned discoveries and fortunate incidents in the process of exploring something else. The RecordFarm is the example of this generation, as it covers a wide-ranging set of activities including online advertising platforms, marketplaces, social media, communications services and payment systems.

Due to the ability to organize new forms of participation or conduct business based on collecting, processing and editing large amounts of data, online platforms have challenged conventional offline activities that facilitate new business ventures and partnership. However, to create a level playing field suitable for the ASEAN context, ASEAN platform may need to be simplified and lightened for user-friendly interface.

ASEAN online platform provides serendipitous discovery proponents a set of tools and services for business development in deep learning based interactive process. After qualification and business development process, new participants are introduced automatically to other platform stakeholders including investors, researchers and producers which are linked to a few databases which provide useful information regarding fund raising and partnership planning. If participants are seeking crowd funding, the requests can be linked to relevant platforms such as Kickstarter, Indiegogo and others. Then platform stakeholders are to be requested to interact with the proponents when they like the proposals. For demand articulation, user-friendly interface is designed to effectively and efficiently collect demands from local communities. Simultaneous translation and voice recognition in partnership with such as google are a few of them. These features of ASEAN online platforms will bring benefits to wider groups of society.

Currently the ASEAN online platform is designed in partnership with the Crossent, a Korean cloud platform company, by which potential technology proponents can be provided a cloud environment to develop their businesses with the technical supports of the company later. After the whole planning process, the on-line platform will be functioning as a permanent project and business development platform.



**K PaaS-TA**

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Apps (3)  
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Services (1)  
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100%  
 paasxpert-app  
 http://paasxpert-app.paasta.koscom.co.kr

Instances: 4 (10)  
 Memory Limit: 128 (2048MB)  
 Disk Limit: 256 (2048MB)  
 Auto Scaling: 2 (Auto)

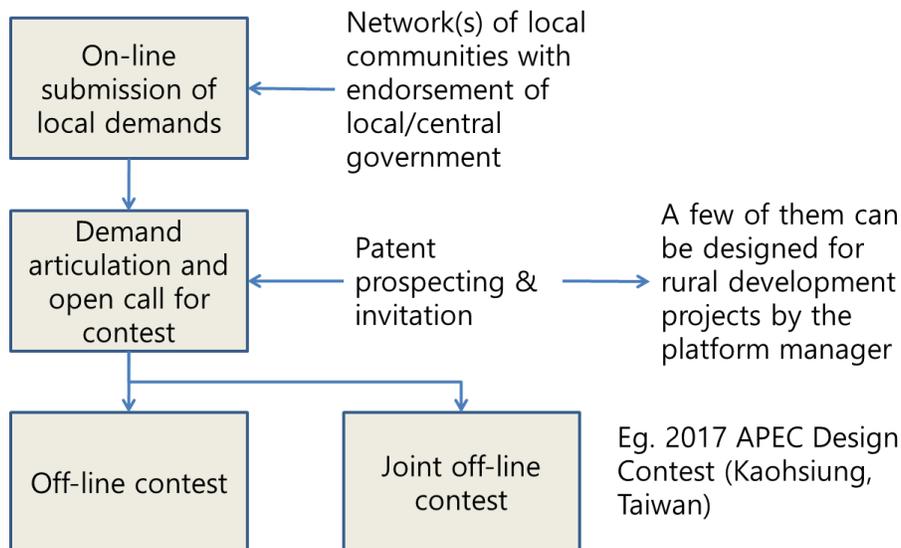
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3	RUNNING	0.02	8	14	10days 8hours 3minutes
4	RUNNING	0.02	10	14	21days 3hours 2minutes

**Platform program 2: off-line contest**

Online submission of local demand may help ASEAN countries to understand various regions’ market demands for future products/ services addressing the ASEAN challenges, which are helpful in initiating ASEAN-wide policies. Under the ASEAN platform, the offline contest represents the more ‘user driven’ types of innovation in product/service. The activities can be held in two stages: first, online-submission of local demands and second, demand articulation and open call for contest.

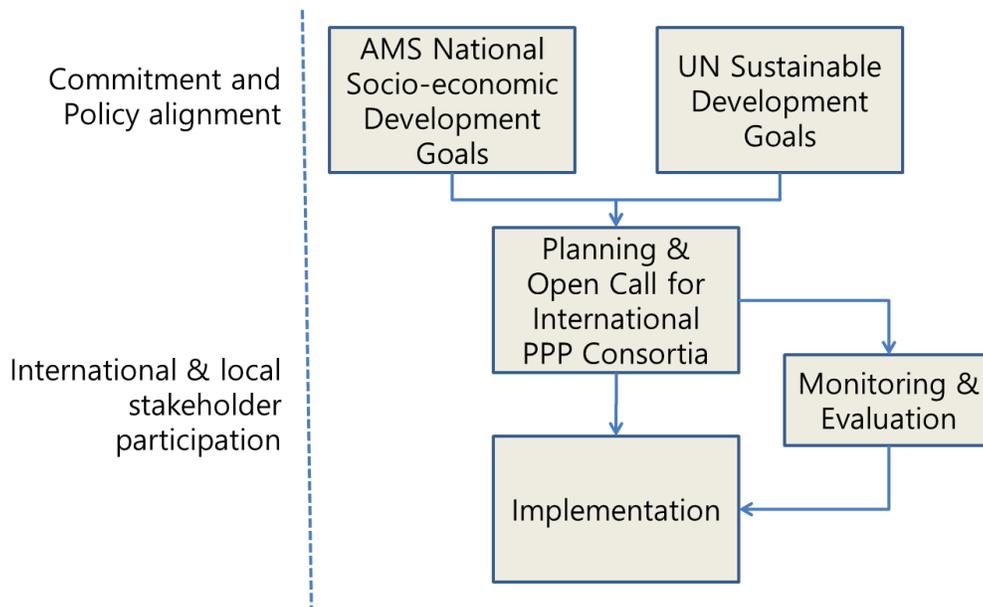
To ensure sufficient critical mass for scale-up, demands are mainly collected from networks of local communities that have official endorsement from local/central government. Once the demand is articulated and the patent prospecting is evaluated, the open call for contest will be held to select technologies suitable for future industries. New business models will take an important role in ensuring that new technology is adopted by the citizen.

For successful demonstration, the platform manager may select a few of potential demands to be designed and implemented as rural development projects. And a joint offline contest with relevant programs is also recommended. The 2017 APEC Design Contest is a good example since it focuses on green growth and value chain integration mechanism to open the innovation platform.



**Platform program 3: off-line flagship (and rural development) programs**

The key objective of platform is to achieve transformative results under AMS National Socio-economic Development Goals and UN Sustainable Development goals. The ASEAN community, therefore, needs a strong commitment and policy alignment with specific focus on the definition of ASEAN challenges and the mobilization of the necessary critical mass of research and innovation effort. Addressing ASEAN-wide grand challenge, off-line flagship programs can be used to deepen its international and local efforts to foster effective public-private partnerships involving appropriate public research, industry, financial institutions, users, regulatory authorities and policy-makers. Built on the top-down approach, AMS needs to agree on a governance model/code of conduct to monitor and evaluate on the progress of flagship program.



## 5. Platform Governance

### Platform governance considerations

As platform boundary is open, a platform governance should be considered as rules for stakeholders to do their roles accordingly. Norms, architecture and market are important considerations for the governance (Parker et al, 2016). Norms, cultures and expectations are the greatest assets of a platform and it is significant to ensure that all stakeholders should be on the same viewpoint in the same boundary definition. Hence, all stakeholders could contribute to shaping the rules as they participate in a platform system. Therefore, platform members could influence on every single step of platform management process for resource appropriation, behaviors and activities monitoring. Participants could also influence on other behaviors by graduate sanctions. Platforms are inclined to evolve as an open network architecture and governance with decentralized authority by which their territories can continue to expand and participants can cooperate to create new value effectively.

The benefit could be shared among stakeholder with the social currency that means all participant could collect the benefit in real value not only in financial currency but also the compensation (Parker et al, 2016). On the other hand, all participants should share the risk pooling and try to guarantee the business insurance together (Parker et al, 2016). Hence, Self-governance principles such as internal transparency or just and fair governance are also implemented to create the good governance. Norms and rules could be established with transparency for ASEAN Platform; reward with good performance and elimination with severe violations. With this the Platform could evolve to engage more stakeholders with their autonomous governance mechanism. A few specific issues could be further specified as follows.

### **1) Relevant plans and ASEAN Platform position**

As ASEAN becomes one community, AMSs will enjoy a greater pool of not only goods, services and investment but also capital and skilled labor. Enhanced internal connectivity by strengthening transport networks shall benefit AMS in reducing the transaction cost of products in and out of the country. At the same time, the establishment of ASEAN Economic Community intends to enhance the manufacturing sector and facilitate technology transfer by making ASEAN as hub for Free Trade Area networks in the region (Lee et al, 2015). To reap benefits from technology transfer and talent mobility across the region, ASEAN platform is proposed as a driving mechanism of the ASEAN Plan of Action for Science, Technology and Innovation (APASTI) and ASEAN Talent Mobility.

The ASEAN Plan of Action for S&T (APAST) served as the policy institution that governed collaborative S&T activities and programs of ASEAN. Nevertheless, the recent shift to add 'Innovation' to its title, APASTI, indicates the emphasis on innovation activities. The new initiative of APASTI promotes active participation of private sectors and coordinated implementation by AMS scientist and engineers to address ASEAN Challenges. ASEAN platform is, therefore, positioned as an experimentation to align with sub-committees led by ASEAN Business Advisory Council (BAC).

For further consideration, to overcome shortcoming of the execution of ASEAN STI program in terms of policy coherence, overdependence on external source of technology and budget fragmentation, an inter-committee program steered by the COST may be necessary to leverage existing programs including talent mobility, joint research, and capacity development. The ASEAN platform is not limited to only be the facilitator of Thailand 4.0 and other Thai initiatives. However, the prominent feature of the ASEAN Platform is to bridge for scale-up implementation of United Nations' Sustainable Development Goals with means of implementation (UN, 2015) and also act as a guidelines for enhanced STI coherence for individual AMS. To achieve such goals, the role of the Committee on Science and Technology (COST) and AMS member need to be changed.

## **2) Proposed planning partnership and management**

ASEAN Platform is open for member states' active participation depending on their expertise. Malaysia may take responsibility for technology foresight, Singapore for technology transfer and intellectual property management, the Philippines for leadership agenda setting and joint research, and Thailand for talent mobility. Additionally, bi/multi-lateral capacity development partners, such as USAID, JASTIP, KAIST and others, are necessary to join as value creation partners. For Thailand side who proposed and design the Platform, various innovation and science related stakeholders such as NSTDA, TCELS, NIA, Mekong Institute and others can be partnered and STIPI and KX of KMUTT can take responsibility on Platform management.

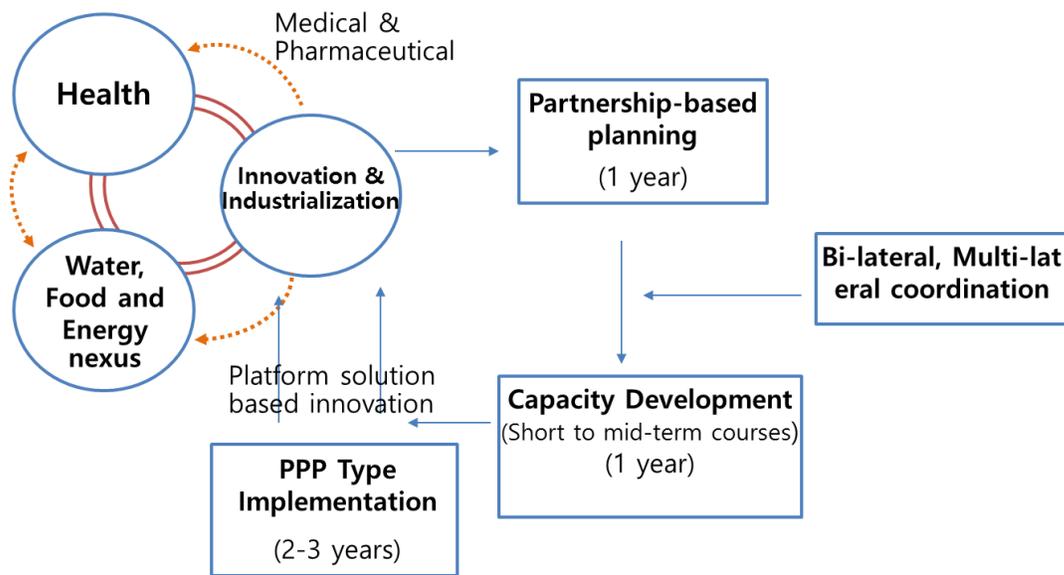
## **3) Platform policy alignment**

As mentioned above, platform is established by the value network among participants with its own norms and regulations. However, individual national policy and regulation are still one of the concerned issues. For instance, government interventions might cause the inertia in platform and prevent innovation (Parker et al, 2016). Platform creates a two-sided market thus it could create the fair pricing model. However, government policy should involve in property standard issue to control fair trade. Additionally, government should establish regulations related to data privacy and security including personal data usage (data ownership and data broker business). Besides, national control of information assets is also one of the significantly concerned issues, since confidentiality laws could lead to data nationalism and the hodgepodge of local data processing centers. Also, tax policy should be included in concerned issues, as tax collection is varied depending on AMS regulations. Lastly, labor regulation should be established in response to platform workers and also labor allocation in ASEAN countries which have the different occupational standard. However, there still some untold issues which are not referred in this paper and it is necessary to analyze in cases by cases, for example, the biological issue about stem cell on health challenge or the chemical control regulation on drug dilemma.

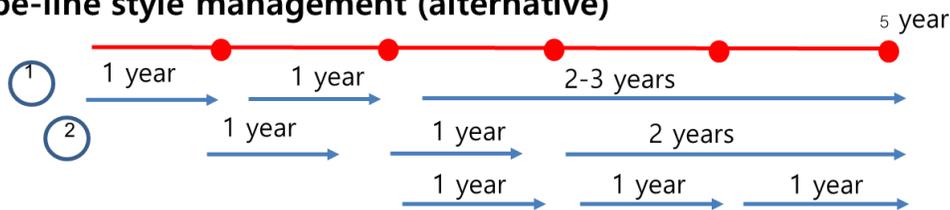
## 6. Milestone and Expectations

### Proposed milestone for offline flagship programs, priorities and 2017 milestone

The ASEAN Platform incorporates solution-based innovation of five-year framework through partnership-based planning in the first year, capacity development by conducting bi/multi-lateral coordination in the second year, and PPP implementation in the following years. Relevant projects can be successively managed in the form of pipeline style management.

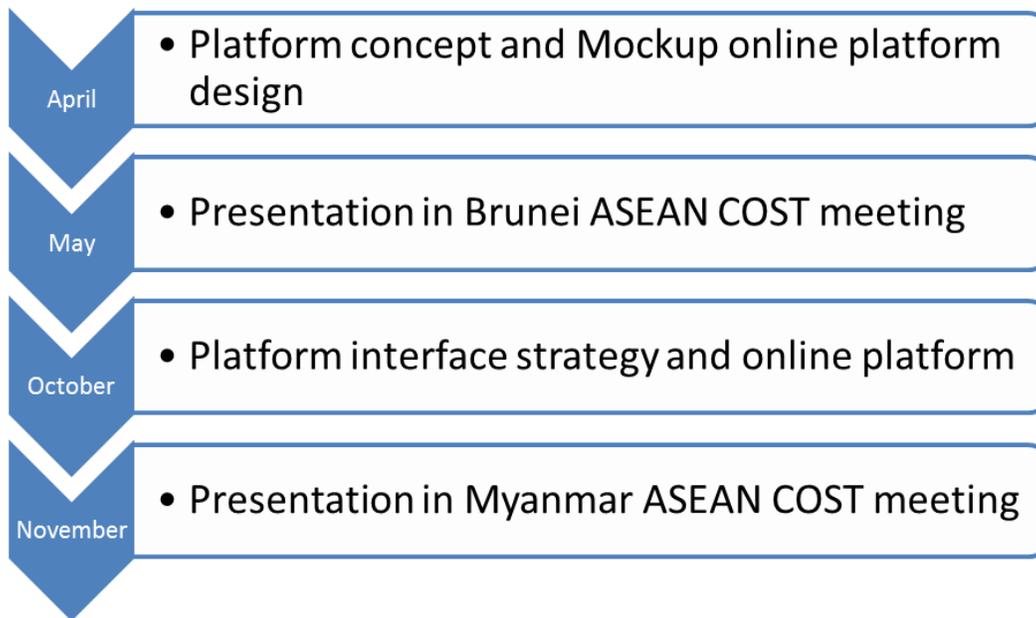


### Pipe-line style management (alternative)



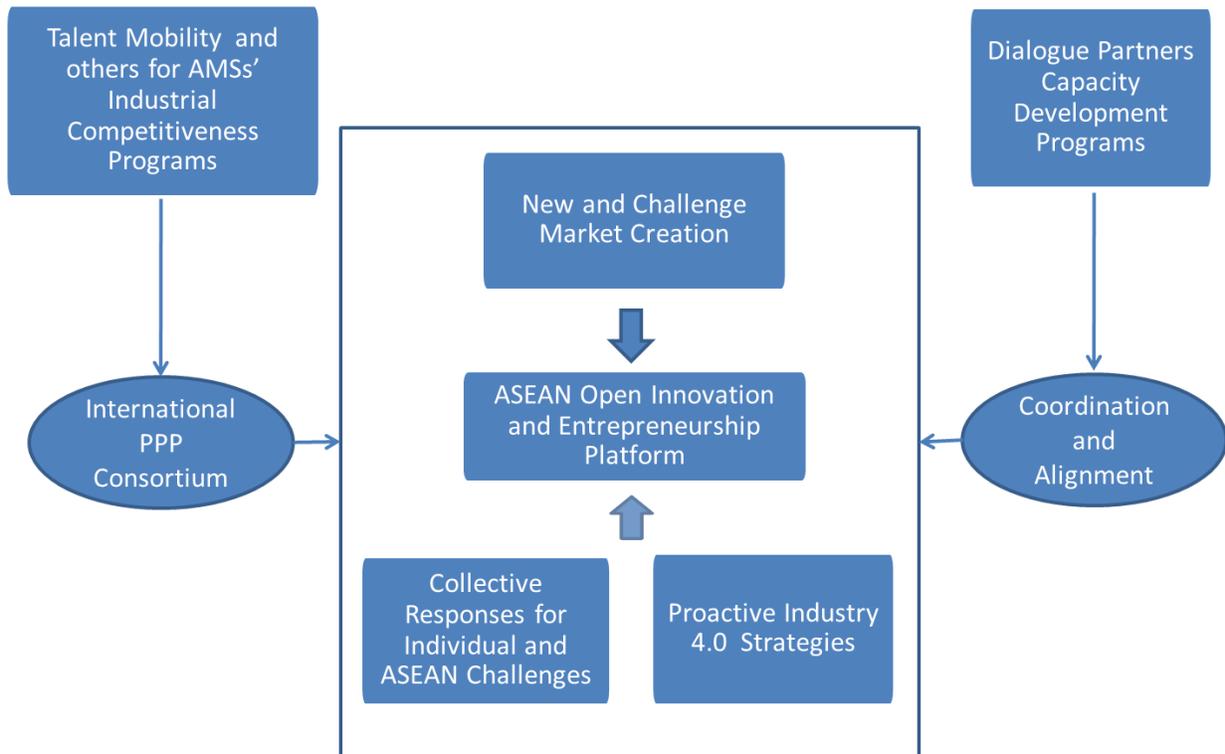
Since the ASEAN Platform focuses on ASEAN challenge issues related to a quality of life, the proposed milestone will scope on three sectors which are health, water food and energy nexus, and innovation and industrialization. The criteria to choose flagship projects are small and manageable scale implementation to facilitate demonstration successes in the beginning.

During the first year of 2017, the ASEAN platform concept will be drafted in April and then will be presented during the Brunei ASEAN COST meeting with online mockup version in May. After having consensus, the Platform interface strategy and online platform will be developed and will be presented in Myanmar ASEAN COST meeting in November. Consultative meetings are periodically arranged to design platform concept and strategies.



**Platform expectation**

With the ASEAN Platform, ASEAN could build a collective system to address the individual and regional challenges through market creation and proactive responses toward industry 4.0. While AMSs are competing each other over talents for their competitiveness and dialogue partners' contribution are fragmented, the ASEAN Platform provides a collective system development mechanism by international PPP consortia and program coordination and alignment.



### Proposed metrics

To measure platform performances and to investigate the success of platform, the actionable, accessible and auditable metrics are introduced as a tool for platform improvement by three phases, considering the business growth (Parker et al, 2016).

**Startup phase:** For start-up phase, there are three concerned factors; liquidity, matching quality and trust. Number of linked database in both quality and quantity aspects is considered for liquidity while number of local demand articulated for matching quality and number of technology proponent for trust in ASEAN platform.

**Growth phase:** In the growth phase, user size and variety change over time. Number of PPP will be considered as the quality to present value connections among participants.

**Mature phase:** In this phase, platform provides continuous innovation. Thus, ASEAN Platform can be measured by the ratio of profit sharing which arises from innovation.

		Definition		ASEAN Platform
		Status/definition	measurement	
Startup phase	Liquidity	A minimum number of producers and consumers and high percentage of successful interactions	The percentage of listings that lead to interaction within a given time period	# of linked DBs with quality and quality
	Matching quality	The search algorithm accuracy and the navigation tools intuitiveness	Sales conversion rate as the percentage of searches that lead to interactions	# of local demands articulated
	Trust	User comfortability with the level of risk associated with engaging in platform interactions		# of tech proponents
Growth phase		Change in size of the user base over time	Producer-to-consumer ratio, lifetime value of producers and consumers	# of PPP
Mature phase		Continuous platform innovation		Ratio of profit share

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