



Asia-Pacific
Economic Cooperation

Advancing Free Trade
for Asia-Pacific **Prosperity**

APEC Connectivity Blueprint





**Asia-Pacific
Economic Cooperation**

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APEC Connectivity Blueprint for 2015-2025



[Source: 2014 Leaders' Declaration, Beijing, China, 11 November 2014]

APEC CONNECTIVITY BLUEPRINT FOR 2015-2025

Background

1. In the APEC Leaders' 2013 Declaration, we shared our aspiration to reach a seamlessly and comprehensively connected and integrated Asia-Pacific through the pillars of Physical Connectivity, Institutional Connectivity and People-to-People Connectivity.
2. Connectivity represents an ambitious target for a diverse regional organization such as APEC, but it is precisely that ambition that will drive strong and tangible achievement.
3. Connectivity will be important not only for governments and business, but also for APEC as a community. By connecting APEC's developed and emerging growth centers, the region's quality of growth will improve, contributing to the Asia-Pacific's economic prosperity and resilience.
4. In this regard, we note with appreciation that significant work has already been done by various APEC fora and working groups in advancing connectivity in the region. APEC economies have also undertaken substantial amounts of work to improve connectivity, both at the domestic and regional levels.
5. However, despite the many achievements and successes of APEC in promoting connectivity in previous years, many challenges still remain. On physical connectivity, there is still a disparity in access to and quality of physical and Information and Communications Technology (ICT) infrastructure throughout the region.
6. On institutional connectivity, there is also a significant gap in the ability of existing institutions to promote connectivity due to various regulatory constraints or lack of capacity.
7. On people-to-people connectivity, much work needs to be done to ease existing barriers to interaction and mobility, and to develop joint endeavors that will support seamless flows of people.
8. We have therefore developed this Blueprint as a strategic guide for current and future initiatives that will bring the APEC region closer together, and as a high-level framework towards which many APEC work streams will focus their efforts.

The Vision of APEC Connectivity in 2025

9. Through the Blueprint, we commit to strengthen physical, institutional, and people-to-people connectivity by taking agreed actions and meeting agreed targets by 2025, with the objective of achieving a seamless and comprehensively connected and integrated Asia Pacific.

10. In order to attain this overarching goal, APEC member economies will undertake specific tangible actions at the physical, institutional, and people-to-people pillar levels.
11. This Blueprint contains existing connectivity-related initiatives; encourages reviving those initiatives that require further progress; and, proposes future initiatives for more efficient flows of goods, services, capital and people to drive APEC progress. It is also broad in scope and adaptable to the ever-changing conditions in the Asia-Pacific.
12. We envision this Blueprint accelerating and encouraging balanced, secure, sustainable and inclusive growth, as well as connecting growth poles in the region and bringing APEC closer together as a community.

Physical Connectivity

13. Under Physical Connectivity, with regard to cross-sectoral issues, we will focus on improving the investment climate, enhancing infrastructure financing through public private partnerships (PPP) and other means in APEC economies; adopting comprehensive assessment methods that consider key quality elements in evaluation of infrastructure project proposals; and, enhancing the application of good practices and people-centered investment for planning and implementing infrastructure projects.
14. We welcome the substantial work that has been done under the Finance Ministers' Process (FMP) to promote knowledge sharing and capacity building in the area of infrastructure PPPs.
15. We are pleased to note that the APEC PPP Experts Advisory Panel has launched work under the FMP, which supports, on a voluntary basis, a Pilot PPP Center based in Indonesia. We note with appreciation the role of the Panel in helping APEC economies tap into private sector sources of funding for infrastructure development, particularly through promoting PPPs, by acting as a repository of skills that will bring to life good practices in the APEC region and that will help channel technical assistance to developing economies seeking such assistance.
16. We commit to further establish dedicated PPP centers in APEC economies, with a view to developing a regional network of PPP centers to share good practices. In the longer term, these centers can play an important role in supporting the establishment of an APEC-wide market for infrastructure financing. We also welcome the Implementation Roadmap to Develop Successful Infrastructure PPP Projects in the APEC Region and the Action Agenda on Promoting Infrastructure Investment through PPP.
17. We will develop, maintain and renew quality infrastructure, including energy, ICT and transport infrastructure and seek to increase the quality and sustainability of APEC transport networks; increase broadband internet access; promote sustainable energy security; and build resiliency into the energy infrastructure.
18. We will help facilitate the efficient and effective operation of maritime transportation and shipments, especially considering that a majority of maritime infrastructure

development projects happen on a unilateral basis. We take note of several pathfinder initiatives where future cooperation could produce tangible results.

19. We will strengthen air transportation cooperation to boost robust trade and people-to-people connections, share experiences and good practices to promote efficiency and security of air connectivity
20. We note that ICT development has been a focus of APEC's work since its inception in 1989, as increased information sharing and improved communication technology allow for faster and reliable connections between people and organizations throughout the Asia-Pacific, facilitating trade and economic growth. We resolve to continue our efforts jointly in enhancing the access to ICT resources by using available technologies to reduce digital divide and increase greater connectivity in the region.
21. We resolve to tap into APEC's considerable potential in fostering future energy cooperation initiatives, especially in the areas of energy-related trade and environmental sustainability. APEC represents an ideal forum to explore this concept of expanded cross-border energy trade and renewable energy in a non-binding manner. We will further aspire to ensure quality electricity supply for all member economies.

Institutional Connectivity

22. Under Institutional Connectivity, we will strive to make progress in jointly addressing issues of trade facilitation, structural and regulatory reforms as well as transport and logistics facilitation, which are of critical importance to APEC as a regional forum.
23. We aim to modernize customs and border agencies and enable a whole-of-government approach in the development of regulations, including coordination across regulatory, standards, and trade agencies.
24. We support APEC's work to encourage each member economy to develop its own Single Window system by 2020 and we encourage efforts to promote international interoperability between Single Window systems and paperless trading.
25. We will further strengthen the initiatives under the APEC Supply-Chain Connectivity Framework Action Plan (SCFAP) by systematically improving supply chain performance through implementing a capacity building plan to assist economies in overcoming specific obstacles within the eight chokepoints of the SCFAP.
26. On regulatory coherence, we will implement initiatives that focus on regulatory cooperation through the sharing of best practices on regulatory issues. We note that industry dialogues are already well advanced in this process. The internet is a good and effective tool to help economies strengthen their implementation of good regulatory practices (e.g. ensuring internal coordination of regulatory work, assessing the impact of regulations, and conducting public consultations). Economies will further explore using internet-based tools to strengthen the implementation of good regulatory practices, including through the initiative on new actions APEC economies could take to

strengthen the conduct of public consultations on proposed regulations in the Internet era.

27. Under structural reform, the APEC Ease of Doing Business (EoDB) Multi-Year Project (MYP) facilitates tailored capacity building activities to support economies in achieving the aspirational target of making it 25% cheaper, faster, and easier to do business. We aim to achieve these goals by harmonizing local policies with existing international agreements, and agree to consider the continuation of our work on the EoDB until 2020.
28. We commit to fostering transparency, safety, competition and better functioning markets, including e-commerce, in the Asia Pacific and aim to expand the application of secure and trusted ICT and e-commerce environment by 2025.
29. APEC needs to build a strategy to tackle the policy challenges raised by the Middle-Income Trap (MIT). Improving an economy's competitiveness, productivity levels and its regulatory environment for the ease of doing business can contribute to overcoming some of the issues that underpin the MIT.

People-to-people Connectivity

30. Under People-to-people Connectivity, we will strive to facilitate the movement of people across borders, and to facilitate the exchange of innovative ideas. As such, issues of business travel mobility, cross-border education, tourism facilitation, and skilled labor mobility will be addressed under this pillar.
31. We commit to continue expanding the number of holders of the APEC Business Travel Card (ABTC) and to improve the efficiency and effectiveness of ABTC scheme.
32. We undertake to improve cross-border education (CBE) cooperation, in recognition that student, academic and provider mobility helps to strengthen regional ties, facilitate people-to-people exchanges and promote economic development through knowledge and skills transfer. We resolve to achieve one million intra-APEC student exchanges per year by 2020, and to increase the number of student exchanges to developing economies.
33. Tourism is an important part of APEC economic growth strategies, and this is reflected in the many tourism facilitation and promotion initiatives that have been implemented within the APEC region. In this regard, we welcome domestic efforts by several economies to implement measures to ease visa restrictions for tourists as well as initiate programs to facilitate immigration processing.
34. We will make efforts to achieve 800 million APEC tourist arrivals by 2025, and commit to establishing an APEC-wide Code of Conduct for Travel Providers in order to reduce travelers' costs and uncertainties relating to tourism.
35. We will intensify cooperation within APEC in promoting cultural exchanges, by aiming to hold at least one cultural awareness event by each APEC economy in every other APEC economy per year by 2017.

36. We resolve to advance work on cross-border science, technology, and innovation exchanges. We note with appreciation the annual APEC Science Prize for Innovation, Research and Education (ASPIRE) which recognizes young scientists who have demonstrated cooperation with scientists from other APEC member economies, as well as a commitment to excellence in scientific research.
37. On professional and skilled labor mobility, we welcome initiatives to benchmark qualifications in the transport and logistics industry, allowing businesses within the region to have more certainty over the skill sets of workers from other economies. There are various bilateral Mutual Recognition Agreements (MRAs), and going forward, APEC can undertake work to help expand the number of bilateral and multilateral MRAs in the region. Mutual recognition of skills and credentials can play an important role in facilitating skilled labor mobility. Timely and accurate information on skills gaps and labor market imbalances will also need to be gathered and analyzed to ensure responsive policymaking in this area.
38. We commit to strengthen people-to-people connectivity through human resources development and welcome the APEC Action Plan for Promoting Quality Employment and Strengthening People-to-People Connectivity through Human Resources Development.

Strategies for Implementation: Capacity Building and Private Sector Cooperation

39. Economic and technical cooperation (ECOTECH) is one of the key pillars of APEC, focusing on narrowing the gap between developed and developing APEC economies. To help implement the connectivity agenda, we direct ECOTECH activities at upgrading skills and institutions by providing relevant capacity building activities for APEC economies and adhering to key ECOTECH objectives. In this regard, ECOTECH is an important tool for implementing the Blueprint.
40. The development and implementation of connectivity initiatives will require a significant amount of information on economies' needs, expectations, gaps, and on market direction and imbalances. Information on what infrastructure projects are needed, what gaps exist in institutional frameworks, and where skills imbalances lay in the labor market will be crucial to support economies in achieving connectivity targets.
41. To gather this information, economies should work with the private sector. In this regard, the APEC Business Advisory Council (ABAC) and APEC's policy partnerships and industry dialogues can contribute significantly by providing private sector feedback or insight on market needs, trends and expectations.
42. We urge the private sector, with coordination from ABAC, to provide direct support for many of the more bankable connectivity initiatives being undertaken in the region. In addition to PPP for infrastructure projects, the private sector could help support capacity building programs as well as educational and cultural exchanges. The private sector could also help in proposing and producing connectivity-enhancing innovations in the region.

43. International organizations have taken initiatives and launched projects on physical, institutional and people-to-people connectivity in the Asia-Pacific. These efforts could help advance the implementation of this Blueprint, and where possible and appropriate APEC should look to coordinate and collaborate with these organizations to ensure we avoid duplication of efforts.

Monitoring, Evaluation and Review

44. In order to reach the overarching goal of strengthening physical, institutional, and people-to-people connectivity by taking agreed actions and meeting agreed targets by 2025, with the objective of achieving a seamless and comprehensively connected and integrated Asia Pacific, we instruct Ministers and Senior Officials to oversee the implementation of the Blueprint on a yearly basis, particularly in reviewing the targets and objectives.
45. We direct Ministers and Senior Officials to develop a dedicated arrangement to monitor, review and evaluate the implementation of the Blueprint, and to conduct a mid-term review of the Blueprint in 2020. We further direct Ministers and Senior Officials to work with APEC fora to develop additional ambitious and measurable actions and targets under each of the connectivity pillars. These actions and targets need to be forward-looking and directed towards the vision of APEC Connectivity in 2025.

Report to Implement the APEC Connectivity Blueprint



[Source: Report to Implement the APEC Connectivity Blueprint, November 2014]

REPORT TO IMPLEMENT THE APEC CONNECTIVITY BLUEPRINT

A. BACKGROUND AND RATIONALE

Since their inception in 1994, the Bogor Goals have been the key driver of the Asia-Pacific Economic Cooperation (APEC) agenda, aiming for free and open trade and investment in the Asia-Pacific. As tariff levels fall and next generation issues such as non-tariff measures take center stage in APEC's search for Asia-Pacific prosperity, APEC Leaders have sought to look to the future of regional economic integration. As part of the work to achieve the Bogor Goals by 2020 and the 2010 Yokohama Vision¹ of 'Bogor and Beyond', Leaders aspire to achieve a seamlessly and comprehensively integrated Asia-Pacific through improved connectivity.

Initiated in 2013 by host economy Indonesia and endorsed by APEC Leaders, creating and implementing a forward-looking Connectivity Blueprint has been advanced by China as a key outcome for 2014. This overarching connectivity framework attempts to bring people and economies closer together through better regional transportation networks and lower trade costs, among others.

Connectivity is the high-level framework toward which many APEC work streams will focus their efforts. The Blueprint is a strategic guide for current and future initiatives that will bring the APEC region closer together to strengthen economic integration. Connectivity is an ambitious target for a diverse regional organization such as APEC, but it is precisely that ambition that will drive strong and tangible achievements. Connectivity will be important not only for governments and businesses, but also for the APEC community as a whole. By connecting APEC's developed and emerging growth centers, the region's quality of growth will improve, contributing to the Asia-Pacific's economic prosperity and resilience.

The Blueprint contains existing connectivity-related initiatives, encourages reviving those initiatives that require further progress, and proposes creating future initiatives to lead APEC progress. The Blueprint is also broad in scope and adaptable to the ever-changing conditions in the Asia-Pacific.

Trade statistics show that intra-APEC trade accounts for around two-thirds of APEC's total merchandise trade (exports and imports). Ferro et. al. (2014), using data on trade in value-added of goods and services, found that the degree of interconnectedness among APEC economies is even stronger than what traditional trade statistics show finding that '90.7% of valued-added embodied in APEC's total exports was supplied by APEC members. This strong interconnectedness occurs as a result of the growing number of global supply chains, expanding and deepening supply chain networks, and the prevalence of global outsourcing and offshoring. Trade and investment no longer flow in a linear fashion, instead functioning more in network or hub-and-spoke arrangements. In this new trade environment, smooth

¹ The Yokohama Vision aspires to 'develop an APEC Community, whereby trade and investment are freer and more open; supply-chains are better connected; doing business is cheaper, faster, and easier; growth is more balanced, inclusive, sustainable, innovative, and secure; and where the economies within the region are better able to cope with threats to human security and economic activity'.

flows of goods, inputs (that is, parts and components), investments, services, and people are crucial to sustaining competitive and efficient business operations.

Trade and investment policy then should not only focus on ‘at-the-border’ barriers and chokepoints, but also toward behind- and across-the-border issues. As APEC economies are being connected through various global supply chain networks, flaws at any point along the chain can lead to costly interruptions for downstream firms, causing a decline in competitiveness for the region. This highlights the importance for APEC to focus on narrowing the divide among developed and developing member economies.

The potential gains from improving connectivity are large and significant. The World Economic Forum (WEF 2013) estimates show that global gross domestic product (GDP) could increase by USD 2.6 trillion if all economies manage to reduce border administration procedures and improve relevant infrastructure halfway to global best practice levels. Based on the Organisation for Economic Co-operation and Development (OECD) Trade Facilitation Indicators, a comprehensive implementation of measures currently being negotiated under the World Trade Organization’s (WTO) Doha Development Round could reduce total trade costs by 10% in developed economies and by 13–15.5 % in developing ones (OECD 2013).

There is a need for better cooperation among economies if they are to navigate this complex business and trade environment together. International regulatory cooperation in its many forms has a valuable part to play in helping to achieve this. APEC, as a regional cooperation forum, should provide strong leadership for both businesses and societies to adapt and remain competitive.

B. GOALS AND OBJECTIVES OF APEC’S CONNECTIVITY AGENDA

The 2013 Leaders’ Declaration gave the Connectivity Blueprint the following objective:

‘...we aspire to achieve a seamlessly and comprehensively connected and integrated Asia-Pacific. We envision a blueprint that will accelerate and encourage balanced, secure and inclusive growth, as well as connect growth poles in the region, through means such as strengthening regional quality transportation networks, reducing transaction costs, and making our region more competitive and cohesive.’

To meet this broad objective, Leaders defined connectivity under three distinct pillars together with its relevant elements (Table 1):

- **Physical Connectivity** improves supply chain performance by connecting and integrating logistics, transport, energy, and telecommunications infrastructure in the APEC region.
- **Institutional Connectivity** advances regulatory and procedural cooperation and coherence among economies.
- **People-to-people Connectivity** enhances interaction, mobility, and joint endeavors.

Table 1. Elements of Connectivity

PHYSICAL CONNECTIVITY
Expand trade routes and corridors and strengthen regional quality transportation networks
Advance cross-border energy networks and interconnections
Achieve universal and high-speed broadband access
Develop and improve well-designed, sustainable, and resilient infrastructure by implementing, at the outset, a multi-year plan on infrastructure development and investment
INSTITUTIONAL CONNECTIVITY
Advance logistics and transport facilitation
Enhance regulatory coherence and cooperation and strengthen the implementation of good regulatory practices
Advance APEC's agenda on structural reforms
Modernize trade-related as well as customs and border agencies, including by progressing the development of Single Windows
Promote cross-border financial cooperation
Expand the application of a safe and trusted ICT and e-commerce environment, especially in the area of electronic documents exchange including electronic means of authentication and improved security methods
PEOPLE-TO-PEOPLE CONNECTIVITY
Advance work on cross-border education, science, technology and innovation, and services
Expand the facilitation of movement of tourists, business people, professionals and workers, women and youth

ICT = Information and communications technology

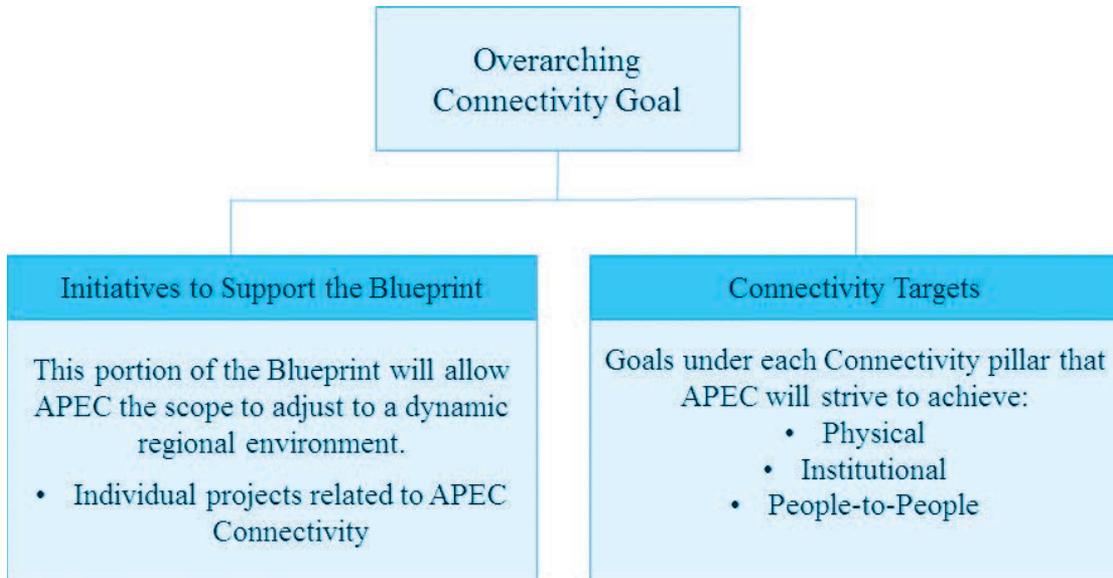
Source: APEC Leaders' Declaration, 2013.

The three pillars involve interrelated initiatives to support regional integration. International regulatory cooperation has an important role to play in supporting the achievement of the goals and elements of connectivity across all three pillars.

To bring these broad aims and pillar-based structure into a coherent effort to advance APEC's regional economic integration agenda, a dynamic Blueprint with a forward-looking timeframe and a set of aspirational pillar-specific targets is set to help achieve the overarching goal.

The overarching connectivity goal is to strengthen physical, institutional, and people-to-people connectivity by taking agreed actions and meeting agreed targets by 2025, with the objective of achieving a seamless and comprehensively connected and integrated Asia-Pacific. This is an achievable target within the 10-year timeframe and ambitious enough to encourage reform while allowing member economies and APEC fora the opportunity to adapt the targets to their own specific capacity.

Figure 1. Monitoring Framework for APEC Connectivity



Source: Authors.

In order to monitor progress toward achieving connectivity in the region, APEC will focus on attaining the overarching goal through the implementation of pillar-specific initiatives that improve connectivity, taking into account individual economies’ circumstances (Figure 1). To measure progress toward this ambitious goal, the APEC Connectivity Blueprint will pursue a dual monitoring track over the 10-year timeframe.

The Initiatives to Support the Blueprint are a dynamic approach to connectivity, giving member economies and related APEC fora the scope to implement new initiatives and broaden the range of activities considered under the Blueprint. The Blueprint will create a platform within APEC for forward-looking, crosscutting initiatives that currently exist only within a single committee or working group and that can be brought to a higher level of implementation.

The submissions from APEC economies and fora are provided in **Annex A**. Below are examples of APEC initiatives from these submissions that are currently ongoing that also support the connectivity goal and targets.

- Economic Committee: under the initiative on ‘Good Regulatory Practices: Conducting Public Consultations on Proposed Regulations in the Internet Era’, EC is considering a set of aspirational actions that helps regulators conduct public consultations on proposed regulations in the internet era for endorsement by APEC.
- Sub-Committee on Customs Procedures: the goal of encouraging each member economy to develop its own Single Window system by 2020.
- Electronic Commerce Steering Group: to establish a comprehensive paperless trading environment across the APEC region by 2020.
- Transportation Working Group: to develop a transportation connectivity map that will visualize APEC’s ideal of physical and institutional integration to be reached by the year 2020.

- Life Sciences Innovation Forum: The forum's Regulatory Convergence on Medical Products initiative targets the convergence of regulatory procedures for medical products, including clinical trials and review processes, by 2020.

The connectivity targets are specific to each pillar, providing a specific, measurable outcome for APEC to achieve. As each pillar requires a unique focus and differing requirements as implementation unfolds, the specific targets will provide a long-term goal to help steer work streams over the Blueprint's lifetime. The list of initial targets is provided in **Annex B**.

The combination of ambitious targets with concrete initiatives to meet them will provide a broad-based and dynamic approach to help member economies meet long-term regional connectivity goals and strengthen regional cooperation in connectivity.

C. ACHIEVEMENTS AND CHALLENGES TO CONNECTIVITY

▪ Physical Connectivity

Transport, information and communications technology (ICT), and energy infrastructure is critical for connectivity, as infrastructure directly supports the flow of goods, information, and people. Infrastructure and services enable access to markets and inputs, and are important to firms when developing their business strategies. With the increasing degree of global outsourcing and offshoring, the role of physical infrastructure is becoming more important as it will affect location decisions for firms and investors.

▪ Cross-sectoral Issues

There are three cross-sectoral aspects of infrastructure that are important for business and trade. First is infrastructure financing through public-private partnerships (PPP). Second is quality of infrastructure. Lastly, are other important principles of infrastructure development. **Annex C** gives details on these three cross-sectoral aspects.

Transport (Land, Maritime, and Air)

The efficient and safe transportation of goods and people is a key component of APEC's goal of free and open trade in the Asia-Pacific region. Reliable infrastructure is also associated with stronger rates of economic growth. According to the OECD, economic infrastructure drives competitiveness and supports economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production and creating jobs (OECD 2012).

While APEC consists of economies with vast geographical spread, land transport could still support better connectivity. A PSU (2013) study highlighted 10 pairs of APEC economies that share land borders. Expanding these connections could support a more expansive regional hub-and-spoke network in land transport connections.

The utilization of rail transport for cargo and passengers varies in individual economies throughout the APEC region. The United States is well connected with Canada and Mexico through extensive rail networks, while China has exerted extensive efforts toward regional connectivity through the development of cross-border road and rail links (PSU 2011). Two-thirds of total global rail freight is transported in developing economies, with over 75%

transported in China, India, and Russia. While state railways transport 61% of the global volume of rail freight, private rail freight providers carry the remaining 39% (World Bank 2009).

While road and rail are considered domestic transport infrastructure, the availability and quality of the infrastructure also determines trade costs – particularly inland transportation costs (Rodrigue 2007) – and business competitiveness that will lead to access to international markets. For instance, integration of rail with ports could improve ports efficiency and the quality of transport service and logistics (Matamala and Salas, 2012). Additionally, APEC economies that are geographically connected will find the domestic infrastructure relevant to support connectivity in a trade corridor setting. WTO (2013: 190) noted that while ‘...the most important modes of transport used for international trade are sea and air transportation...rail and road transport are of particular importance for trade with neighboring economies or within regional clusters...’

The expansion of maritime transport through containerization has been crucial in supporting the exponential growth of global trade. Most globally traded goods are carried by maritime transport; over 80% of total global trade by weight, according to the WTO (2013). Given their proximity to major shipping lanes, APEC economies are doing well in developing their maritime transport infrastructure. According to the United Nations Conference on Trade and Development’s (UNCTAD) Liner Shipping Connectivity Index (LSCI), an indicator that measures how well an economy is connected to global shipping networks, six APEC economies – China; Hong Kong, China; Singapore; Korea; Malaysia; and the United States – occupied the top six positions in the global LSCI rankings in 2012 and 2013. Other APEC economies also showed good progress in connecting to global shipping networks. For example, the LSCI scores for Russia and Viet Nam have more than doubled in 2013 relative to their initial scores in 2004.

For air transport, APEC economies are also expected to contribute significantly to global passenger and freight traffic flows as their economies grow. According to the International Air Transport Association, there were 647 million air passengers across the region in 2009, and the number of passengers is expected to increase to one billion by 2014. Globally, the number of air travelers is projected to increase from 2.4 billion in 2010 to 16 billion by 2050 – with the Asia-Pacific region providing much of the growth (IATA).

Improving multimodal or intermodal connectivity offers further opportunities for improving the efficiency and quality of transportation networks particularly in transit times and logistics services. Better connectivity across modes of transport will also help to decongest crowded mode(s) while utilizing more of the others – maintaining an efficient level of use across the different modes of transport. Improving multimodal connectivity requires addressing physical barriers (such as the development of multimodal terminals or logistics parks) and administrative barriers (customs and transportation regulations and procedures) that connect different modes of transport (such as rail–sea intermodal transportation) (APEC TPTWG and CTI 2012).

Information and Communications Technology Infrastructure Development

ICT development has been a focus of APEC work since its inception in 1989, as increased information sharing and improved communication technology allow for faster connections between people throughout the Asia-Pacific, facilitating trade and economic growth

throughout the APEC region. The United Nation's International Telecommunication Union reports that a 10% increase in broadband internet access is associated with a growth in per capita GDP of 0.2%, demonstrating real results for personal economic development (ITU 2014). APEC Leaders have thus called for APEC to 'achieve universal and high-speed broadband access' throughout the region, a challenge that will require substantial efforts to achieve.

Based on the APEC Digital Prosperity Checklist Survey, economies were consistently implementing the checklist recommendations in infrastructure, intellectual capital, investment, and innovation. The survey results indicated that the ICT-related policies varied more in the areas of information flows and integration, suggesting more potential for future cooperation and coordination in these areas. There was less convergence in the key area of information flows, nevertheless all responding economies indicated that they had facilitated the adoption and deployment of digital signature technology. The survey results suggested integration was the area where economies had been least consistent in implementing the checklist recommendations (2010 CTI Annual Report to Ministers).

In 2010, the 8th APEC Ministerial Meeting on Telecommunications and Information endorsed the Strategic Plan for 2010–2015, with the following priority areas:

- develop ICT to promote new growth;
- enhance socio-economic activities through the use of ICT;
- promote a safe and trusted ICT environment;
- promote regional economic integration; and
- strengthen cooperation in the ICT sector.

Energy Infrastructure Development

Energy infrastructure is important to support energy market integration, particularly as it provides services such as network construction, construction of shared infrastructure, and maintenance of network integrity, security, and access.

The APEC region is a net energy importer and accounts for around 60% of the world energy demand. As the global energy demand is estimated to increase by 40% between 2007 and 2030, both the economic and environmental issues of energy are important for APEC in order to sustain global growth and trade. For Asia-Pacific economies, the use of fossil fuels is predominant; with oil accounting for 30% to 40% of the energy needs, whilst coal constitutes more than 20% (with the exception of China that sources almost 70% of its energy from coal). Particularly for Asia, its oil needs – around 94.3% – are met by imports (Doshi and Zahur 2012).

On the supply side, the APEC region contains some of the world's largest energy producers. In 2010, APEC's oil production was equivalent to three-quarters of primary oil demand. Estimates show that China, Russia, and the United States will represent more than two-thirds of APEC's primary energy supply by 2035 (APEREC 2013).

▪ Institutional Connectivity

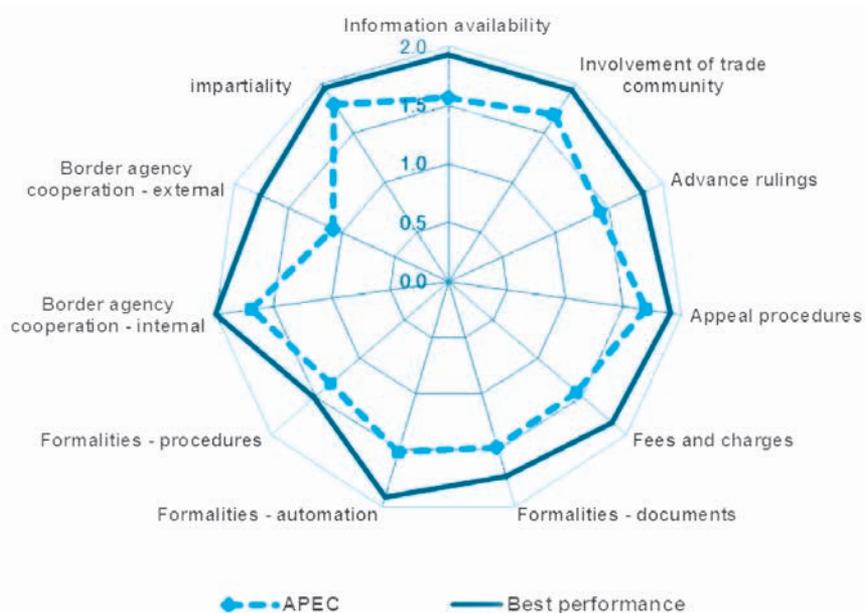
Institutional connectivity addresses trade facilitation issues and improves the coherence and interoperability of its institutions, mechanisms, and processes. Also known as 'soft

infrastructure’, this area covers trade and investment policies and agreements as well as institutional links to support greater coherence of regulations and regional cooperation.

WTO’s definition on trade facilitation focuses more on at-the-border issues, such as customs clearance, certification, export and import fees, and regulations. OECD, using WTO’s definition of trade facilitation, has developed the following Trade Facilitation Indicators to assess trade facilitation policies: Advance Rulings, Appeal Procedures, Cooperation, Fees and Charges, Formalities, Governance and Impartiality, Information Availability, and Involvement of the Trade Community.

Figure 2 shows APEC’s scores in comparison with the best performer in each of the facilitation indicators. Areas with gaps include border agency cooperation (external), formalities (automation), fees and charges, and information availability.

Figure 2. APEC Scores on Trade Facilitation Indicators



Source: OECD.

The discussion paper on connectivity framework (2013/SOM2/SYM/003) defines institutional connectivity to also include behind-the-border issues that cover structural and regulatory reforms. More recent agenda items include transport and logistics facilitation.

Customs and Border Administration

As the key agency handling the movement of goods at the border, customs administrations plays a critical role in the cross-border movement of goods. The Single Window² concept has been one of the important initiatives in APEC to improve trade facilitation as well as to reduce trade transaction costs. In many economies, governments that provide funding for Single Window initiatives designate customs administrations as the responsible entity for implementation.

² A Single Window system enables importers and exporters to submit regulatory documents to a single entity and/or location, resulting in time and cost savings for traders (APEC PSU 2011) and governments.

An APEC Sub-Committee on Customs Procedures report (2010, p. 2) highlighted the following difficulties in the development of Single Window systems:

- There is a low volume of permit transactions and the complexity of some permit requirements needs a relatively high development cost, which exceeds the benefit obtained.
- There is no political decision and support, no leading agency, and no coordination among trade-related government agencies for the development of the Single Window. Single Window systems may not be a priority for some trade-related government agencies.
- There is a varied level of IT awareness and IT readiness among trade-related government agencies.
- It is difficult to harmonize or coordinate systems, procedures, and data elements among trade-related government agencies, including Customs, to develop the Single Window.
- There is insufficient funding and human resources for developing the Single Window.
- The laws and regulations needed to implement the Single Window or other computerized systems for trade-related government agencies have not been implemented, or lengthy periods of time are required for such changes.

Additionally, the World Customs Organization (WCO 2012) supports three pillars of connectivity that are important for customs modernization and improvement: (i) people connectivity that includes customs-business partnerships (C2B) covering authorized economic operator (AEO) or trusted trader programs, harmonized system nomenclature and the Revised Kyoto Convention that serve as a common language for customs and traders; (ii) institutional connectivity covering customs-to-customs connectivity (C2C) that includes, among others, mutual recognition of AEOs and coordinated border management at the international level; and (iii) information connectivity that includes issues such as globally networked customs (GNC) and electronic Single Window environment. Allowing a single goods declaration for exports and imports as suggested by WCO under the Revised Kyoto Convention could also be useful.

Supply Chain Connectivity

Supply chain connectivity is crucial to the economic success of the Asia-Pacific region. Goods, particularly manufactured goods and components, frequently cross borders multiple times during their production and delivery process, as component parts from all over the region are brought together for final assembly in different locations and exported around the region and the world.

Research by the World Bank shows that logistics performance matters more for parts and components trade – the type of goods that circulate within supply chains – than for trade in final goods, with parts and components trade nearly 50% more sensitive to improvements in logistics performance than trade in final goods (Saslavsky and Shepherd 2012).

The APEC Supply Chain Connectivity Framework agenda endorsed by APEC Ministers in 2009 covers a wider range of issues with a stronger emphasis on logistics and transport facilitation issues. The Supply Chain Connectivity Framework Action Plan (SCFAP) identified eight chokepoints in regional supply chains where public and private sector actions

can be combined to help traders ensure that supply chains operate more quickly, efficiently, and reliably.

Financial Integration

Financial market development is an important precondition for better financial market connectivity in the region. The path to better integration could be achieved by strengthening domestic financial markets, coordinated government assistance, regulatory convergence, capital account liberalization, and financial cooperation (Asia-Pacific Financial Market Development Symposium 2013).

As APEC economies are at different stages of development, as well as having different regulations and capacities, the task of integrating all 21 economies financially is not easy. Some economies may opt to develop their financial market internally, while others have started to focus on reaching global markets in order to expand. Ideally, these two strategies can be made to complement each other, by focusing on improving institutional settings for enhancing transparency, security, standards and legal frameworks, in addition to reducing cross-border financial transaction costs.

Regulatory Coherence and Cooperation and Good Regulatory Practices

APEC Leaders in 2011 agreed to undertake a series of actions by November 2013 to strengthen the implementation of Good Regulatory Practices across APEC economies. Their three priority areas are:

- Develop, use, or strengthen processes, mechanisms, or bodies to enable a whole-of-government approach in the development of regulations, including coordination across regulatory standards and trade agencies.
- Develop, use, or strengthen mechanisms for assessing the impact of regulations, which involves effective and consistent use of the tools and best practices for developing new regulations and reviewing existing regulations.
- Implement the principles related to public consultation in the regulatory policy section of the 2005 APEC–OECD Integrated Checklist on Regulatory Reform and the 2004 Leaders’ Statement to Implement the APEC Transparency Standards.

In terms of improving connectivity, it is important for APEC to ensure through international regulatory cooperation that relevant regulatory requirements for safety, health, and environmental protection are aligned to the extent consistent with the protection of human health and the environment so as to avoid unnecessary duplication that could burden exporters with additional costs and delays. For example, the APEC mutual recognition arrangement on conformity assessment of electrical and electronic equipment could support increased regulatory convergence.

Structural Reforms

A sustained effort to enhance good regulatory practices and efficient structural reform will bring tangible benefits to sectors and infrastructure important for connectivity such as transport and telecommunications. To meet these goals, APEC members have undertaken two structural reform agendas:

- Leaders' Agenda to Implement Structural Reform in 2004 that identified five priority areas for cooperation and development: regulatory reform, strengthening economic and legal infrastructure, competition policy, corporate governance, and public sector management.
- APEC New Strategy for Structural Reform in 2010 that aims to promote balanced and sustainable growth by fostering transparency, competition, and better functioning (financial) markets in the Asia-Pacific.

Services regulatory reform will also boost competitiveness of firms and economies, in addition to expanding trade and investment in services. For services sector liberalization, Hoekman and Mattoo (2011) noted that adequate domestic regulation and international regulatory cooperation would often be necessary.

▪ **People-to-people Connectivity**

People-to-people connectivity is distinct from physical and institutional connectivity in that it not only aims to facilitate the movement of people across borders, but it also facilitates the exchange of innovative ideas. Hence, APEC Leaders have committed to 'advance our work on cross-border education, science, technology and innovation, services, as well as to expand the facilitation of movement of our people, which may include tourists, business people, professionals and workers, women and youth.' People-to-people connectivity endeavors to bridge thoughts and knowledge, eventually building a sense of affinity among the peoples of the APEC region.

Business Mobility

Business travel facilitation is an important aspect of people-to-people connectivity as it reduces the costs and uncertainty of doing business. While business and investment decisions are ultimately made in the context of economic fundamentals – for example, macroeconomic stability, business climate and profitability, and ease of doing business – business travel facilitation makes it possible to add the human dimension that can make the difference between a successful and unsuccessful business partnership. Moreover, despite the ease of communication afforded by modern technology, many aspects of cross-border business still require travel to other economies, such as meetings with business partners and inspection of goods or factory sites.

The APEC Business Travel Card (ABTC) was developed by the Business Mobility Group (BMG) to make it easier for business people to travel across APEC economies to explore and maintain business opportunities. With this travel facilitation it is envisioned that new business opportunities could be developed, cross-border investments could be strengthened, and stronger entrepreneurship within the region could emerge.

Cross-border Education Cooperation

Education is a fundamental component of economic activity and a key form of people-to-people connectivity in APEC. Cooperation in the education sectors of APEC economies fosters innovative growth as students, researchers and education providers build scientific, technological and linguistic communities. Increasing cross-border student flows will build people-to-people exchanges, strengthen regional ties and promote economic development

through knowledge and skills transfer. High quality cross-border education equips students with the competencies that they need in a globally connected and knowledge-based society.

The 20th APEC Leaders' Declaration on promoting cross-border education and cooperation encourages further development of cooperation and facilitation of exchange in education services within APEC to enhance the mobility of students, scholars, researchers and education providers, as well as to enhance the existing network of bilateral and multilateral agreements.

Cross-border education cooperation and cultural exchanges also promote people-to-people connectivity through improved understanding between people and creating trust and affinity between citizens of different economies in the region. While promoting goodwill between people may be seen as an end in itself, cultural affinity and the exchange of ideas can improve cross-border trade, investment, and tourism. It has been repeatedly observed that economies with a high degree of affinity or cultural familiarity – due to linguistic similarity, history, or migration – trade more, invest more, and generate more travel across their borders. This is because the exchange of knowledge and ideas through education and cultural exchange, not only improves familiarity and understanding, but also promotes the desire to visit the other economy, spurs demand for its products, and increases entrepreneurs' propensity to do business across borders.

Tourism Facilitation

In the context of people-to-people connectivity, tourism facilitation refers to the development of policies and institutions that reduce the non-logistical costs and uncertainties associated with tourism. For example, visa restrictions in some economies are a major source of cost and uncertainty for tourists, and thus can deter tourism to those economies despite efforts to reduce travel costs (Table 2). Likewise, uncertainty about consumer protection regulations for travelers (for example, travelers' rights for contingencies such as overbooking or lost luggage) in destination economies can lead to travel uncertainties. Thus, promoting tourism for people-to-people connectivity involves reducing or eliminating these uncertainties related to travel and tourism.

Table 2. Visa Restrictions in APEC Economies

		Destination																				
		AUS	BD	CDA	CHL	PRC	HKC	INA	JPN	ROK	MAS	MEX	NZ	PNG	PE	PHL	RUS	SIN	CT	THA	USA	VN
Origin	AUS		o	o	o	x	o	o	o	o	o	o	o	x	o	o	x	o	o	o	o	x
	BD	o		o	x	o	o	o	o	o	o	x	o	o	o	o	x	o	o	o	o	o
	CDA	o	o		o	x	o	o	o	o	o	o	o	o	o	o	x	o	o	o	o	x
	CHL	x	x	x		x	o	o	o	o	o	o	o	o	o	o	o	o	x	o	o	x
	PRC	x	o	x	x		x	o	x	x	x	x	x	x	x	x	x	x	x	o	x	x
	HKC	o	o	o	o	x		o	o	o	o	o	o	o	o	o	o	o	o	o	x	x
	INA	x	o	x	o	x	o		x	x	o	x	x	o	o	o	x	o	x	o	x	o
	JPN	o	o	o	o	o	o	o		o	o	o	o	o	o	o	x	o	o	o	o	o
	ROK	o	o	o	o	x	o	o	o		o	o	o	o	o	o	o	o	o	o	o	o
	MAS	o	o	x	o	x	o	o	o	o		o	o	o	o	o	x	o	o	o	x	o
	MEX	x	x	x	o	x	o	o	o	o	o		o	o	o	o	x	o	x	x	x	x
	NZ	o	o	o	o	x	o	o	o	o	o	o		o	o	o	x	o	o	o	o	x
	PNG	x	x	o	x	x	o	x	x	x	o	x	x		o	o	x	o	x	x	x	x
	PE	x	o	x	o	x	o	o	x	o	o	o	x	o		o	o	o	x	o	x	x
	PHL	x	o	x	x	x	o	o	x	x	o	x	x	o	o		x	o	x	o	x	o
	RUS	x	x	x	o	o	o	o	x	o	o	x	x	x	o	o		x	x	o	x	o
	SIN	x	o	o	o	o	o	o	o	o	o	o	o	o	o	o	x		o	o	o	o
	CT	o	o	o	x	x	o	o	o	o	o	x	o	o	o	x	x	o		o	o	x
	THA	x	o	x	o	x	o	o	o	o	o	x	x	o	o	o	o	o	x		x	o
	USA	o	o	o	o	x	o	o	o	o	o	o	o	o	o	o	x	o	o	o		x
	VN	x	o	x	x	x	x	o	x	x	o	x	x	x	x	o	x	o	x	o	x	

AUS = Australia; BD = Brunei Darussalam; CDA = Canada; CHL = Chile; PRC = People’s Republic of China; HKC = Hong Kong, China; INA = Indonesia; JPN = Japan; ROK = Republic of Korea; MAS = Malaysia; MEX = Mexico; NZ = New Zealand; PNG = Papua New Guinea; PE = Peru; PHL = Philippines; RUS = Russia; SIN = Singapore; CT = Chinese Taipei; THA = Thailand; USA = United States; VN = Viet Nam.

Note: Rows indicate the origin of the traveler as indicated in his/her travel document and columns indicate the destination. An O means there are no visa restrictions and an X means visa restrictions exist. For the purposes of this table, visa restrictions are defined as a requirement of ordinary travelers (that is, travelers who are not asylum seekers or holders of official and diplomatic passports, APEC Business Travel Card, or visas to third party economies) to obtain a visa or other documentary equivalent from an embassy, consulate, or agency to visit an economy prior to arrival. Hence, visas on arrival or online electronic visas are not considered a form of visa restriction.

Source: Compiled by APEC Policy Support Unit from various sources.

The APEC Travel Facilitation Initiative aims to expedite the flow of increasing numbers of passengers in the APEC region and promote improvements in passenger security screening on departure, as well as immigration and customs processing on arrival. It also aims to foster regional adoption of best practices and pursue ‘next generation’ approaches to make the travel process faster, easier, and more secure for travelers (White House 2011).

Currently, all APEC economies impose visa requirements on travelers from at least one other APEC economy. A study by the World Travel and Tourism Council (WTTC 2013) shows that visa facilitation in APEC economies could lead up to an additional 57 million tourist arrivals by 2016, generating up to USD 89 billion additional tourist receipts and creating 1.4 million new jobs.

Professional and Labor Mobility

Human capital, as with physical and financial capital, is an important ingredient for the production of goods and services. However, unlike physical and financial capital, human

capital is more difficult to move around borders, preventing the transfer of skilled workers from economies with excess supply of skilled labor to those with unmet demand. Hence, an important aspect of people-to-people connectivity is the facilitation of labor and skills mobility across the region.

Several models could be followed to facilitate skilled labor mobility throughout the APEC region, including:

- The existing APEC Engineers Register recognizes the credentials of a professional engineer (deemed one who has satisfied requirements under the Institute of Engineers Singapore Monitoring Committee, which certifies that he/she has met the criteria set by the APEC Engineers Coordinating Committee).
- The Washington Accord is an international accreditation agreement for engineering professionals. The accord provides mutual recognition of engineering qualifications among member economies, so that credentials earned in one economy will be recognized in all economies. As of 2014, APEC economies that are full members of the Washington Accord are Australia; Canada; Hong Kong, China; Japan; Korea; Malaysia; New Zealand; Russia; Singapore; Chinese Taipei; and the United States, while the Philippines and Peru are provisional members (International Engineering Alliance website).

D. STRATEGIES FOR IMPLEMENTATION

▪ Economic and Technical Cooperation

Economic and technical cooperation (ECOTECH) is one of the key pillars of APEC focusing on narrowing the gap between developed and developing APEC economies. To help implement the connectivity agenda, ECOTECH activities will be directed at upgrading skills and institutions by providing relevant capacity building activities for APEC economies and adhering to the following key ECOTECH objectives:

- attain sustainable growth and equitable development in the Asia-Pacific region
- reduce economic disparities among members
- improve overall economic and social well-being (human security)
- deepen the spirit of community in the Asia-Pacific

The following five medium-term ECOTECH priorities were endorsed in 2010³:

- regional economic integration;
- addressing social dimension of globalization (inclusive growth);
- safeguarding the quality of life through sustainable growth;
- structural reform; and
- human security.

³ The SOM Steering Committee on ECOTECH (SCE) is currently considering the mid-term ECOTECH priorities for 2015 to 2019.

ECOTECH’s priorities that are directly related to connectivity are regional economic integration and structural reform.

▪ **Capacity Building**

A primary component of ECOTECH activities is capacity building that could be used to advance the pillar-specific targets highlighted in **Annex B**.

Table 3 provides those areas where fora under the SOM Steering Committee on ECOTECH (SCE) could further support the Connectivity Blueprint.

Table 3. Possible Fora Involvement under the Connectivity Pillars

Pillar	Possible Issues	APEC Fora
Physical	Transport, ICT, Energy	TPTWG, IEG, TEL, ECSG, EWG
Institutional	Customs, Supply Chain, Finance, Regulatory Coherence and Cooperation, Good Regulatory Practices, Structural Reform	SCCP, FMP, SCSC, LSIF, EC, ACTWG, SMEWG, CD
People-to-people	APEC Business Travel Card, Student and Researcher Mobility, Tourism Facilitation, Professional and Labor Mobility, Cross-border Education	BMG, HRDWG, SCCP, TWG, TPTWG, CTWG, GOS, EWG, EPWG, PPWE, HWG, LSIF

ACTWG = Agricultural Technical Cooperation Working Group; BMG = Business Mobility Group; CD = Chemical Dialogue; CTWG = Counter-Terrorism Working Group; EC = Economic Committee; ECSG = Electronic Commerce Steering Group; EPWG = Emergency Preparedness Working Group; EWG = Energy Working Group; FMP = Finance Ministers’ Process; GOS = Group on Services; HRDWG = Human Resources Development Working Group; HWG = Health Working Group; IEG = Investment Experts’ Group; LSIF = Life Sciences Innovation Forum; PPWE = Policy Partnership on Women and Economy; SCCP = Sub-Committee on Customs Procedures; SCSC = Sub-Committee on Standards and Conformance; SMEWG = Small and Medium Enterprises Working Group; TEL = Telecommunications and Information Working Group; TPTWG = Transportation Working Group; TWG = Tourism Working Group

Source: SCE and authors.

▪ **Funding**

The APEC Budget and Management Committee (BMC) approved 115 (standard) projects at a total value of USD 14 million in 2013. An internal assessment of project efficiency and viability noted that:

- Given the diversity in technical capacity across economies, it is important to selectively choose the topic and communicate what are the materials of the workshop, as well as targeting the correct participants.
- To extend information sharing beyond the workshop itself.

- To measure sustainability of the workshop or training in terms of policy impact or continuity of practices and activities.

For physical connectivity, APEC can learn from other international organizations such as the Association of Southeast Asian Nations (ASEAN) which has established the ASEAN Infrastructure Fund that is expected to provide loans of up to USD 300 million a year. The Asian Development Bank (ADB) has worked extensively in connectivity financing, providing an average of more than USD 1 billion annually in both infrastructure lending and capacity building in the Asia and Pacific region. The World Bank has also been actively supporting physical connectivity in the region through considerable lending activity for road and rail infrastructure projects, with total annual outlays averaging over USD 1 billion. The Inter-American Development Bank's (IDB) contribution to infrastructure development comes in the areas of road safety, freight logistics, sustainable transport, and large-scale projects, with spending over USD 150 million annually from 2005–2011.

For APEC to improve physical connectivity, it will also need to focus on the 'software' part of infrastructure provision – the institutional environment that allows infrastructure investment and implementation to succeed. APEC economies should focus on supporting and improving the existing investment environment for infrastructure, competition policies governing transport and infrastructure services, as well as advocating for structural reforms.

In terms of trade facilitation, Moïse (2013) highlighted the following costs that could be involved in implementing trade facilitation measures:

- Diagnostic and re-engineering costs: to identify priority areas for reform and devise appropriate action plans.
- Regulatory costs: this may involve the process of preparing new legislation, or the amendment of existing laws to support trade facilitation.
- Institutional costs: costs related with the establishment of new units, such as a post-clearance team, a risk management team, or a central enquiry point.
- Training costs: this could involve costs for recruiting new, expert staff, training existing staff in a training center, on-the-job training, and importing trained staff through personnel exchanges with other ministries and agencies.
- Equipment and infrastructure costs: measures of trade facilitation, such as advance lodgment and processing of data, risk assessment or special procedures may require new or improved equipment and infrastructure – particularly related to ICT.

APEC could focus its cooperation (for example, by sharing best practices) in the above areas to further implement and improve existing domestic trade facilitation measures, as well as in promoting regional cooperation to strengthen the benefits gained from implementing those measures. Moïse (2013) noted that while trade facilitation measures could be expensive at the earlier stage, the operational cost is usually affordable; however, some measures require political commitments more than funds.

▪ **Engagement with APEC Business Advisory Council and Private Sectors**

The APEC Business Advisory Council (ABAC) has a deep and longstanding interest in connectivity. Following consultation with the Asia-Pacific business community, ABAC made

the following recommendations during the 2014 Symposium on the APEC Connectivity Blueprint in Qingdao, China:

- Physical connectivity would benefit from new initiatives in quality transportation, disaster resilience, and telecommunications and ICT infrastructure.
- Institutional connectivity should focus on customs facilitation, supply chain improvements, access to finance, and regulatory coherence and cooperation.
- People-to-people connectivity should highlight business mobility to ease regional travel.

The development and implementation of connectivity initiatives will require a significant amount of information on needs, gaps, and imbalances. Information will be needed on what infrastructure projects are needed (and how urgently), what gaps exist in institutional frameworks, and where skills imbalances lie in the labor market. Equally important is information on expectations and direction – knowing what is needed now is valuable, but knowing where the market is headed is crucial for planning.

While governments may make great efforts to gather this information, the best source is the private sector. In this regard, ABAC, the policy partnerships, and the industry dialogues, can contribute significantly by providing private sector feedback or insight on market needs, trends, and expectations. For example, ABAC can spearhead regular firm-level surveys in APEC economies to gather firms' needs and expectations on issues that affect them such as infrastructure, innovation, and government policy.

The private sector, with coordination from ABAC, can also provide direct support for many of the more bankable connectivity initiatives done in the region. In addition to PPP for infrastructure projects, the private sector could help support capacity building programs as well as educational and cultural exchanges. Finally, the private sector could help in proposing and producing connectivity-enhancing innovations in the region. The private sector is not a passive partner in improving connectivity in the region; rather, it is in the prime position to rigorously identify where improvements are needed and where enhancements can be made.

▪ Synergy with Other Regional Forums

Many international organizations also have the same focus and interest in tackling connectivity issues. ADB has worked extensively in connectivity financing, providing an average of more than USD 1 billion annually in both infrastructure lending and capacity building within the APEC region, and has explored options to enhance regional physical infrastructure including the Greater Mekong Subregion (GMS) initiative and regional corridor development. With cross-border projects as diverse as transport, tourism, electrical infrastructure, and disease control, the GMS program has implemented 55 investment projects with a total project cost of about USD 14 billion as of September 2011. The IDB and World Bank are also supporting connectivity efforts through several financial and non-financial instruments including loans, donations, guarantees, and technical support. Examples of other international organizations' and regional groupings' activities under each of the three connectivity pillars are in **Annex D**.

APEC should continue its involvement and participation with relevant international organizations and regional groupings to get the latest developments on relevant policy experiences as well as in seeking capacity building opportunities.

E. MONITORING, EVALUATION, AND REVIEW

To keep track of APEC's progress in its connectivity agenda, a periodic review focusing on the implementation of the Blueprint is necessary. Senior Officials have been designated with the tasks of monitoring, evaluating and reviewing the implementation of the Blueprint on a regular basis. Senior Officials could evaluate the implementation of the Blueprint on a yearly basis, particularly in reviewing the qualitative targets and objectives as well as in adding new APEC initiatives for the Blueprint.

ANNEX A: Key Initiatives for Enhanced APEC Connectivity

The information provided in this annex is primarily based on the submissions of domestic and APEC initiatives from member economies and fora through a request for information exercise from March to June 2014. Submissions were received from 19 economies and 17 fora, comprising 131 items for physical connectivity, 253 items for institutional connectivity, and 147 for people-to-people connectivity.

A. PHYSICAL CONNECTIVITY

Physical connectivity initiatives have traditionally been thought of as domestic undertakings implemented to help connect people and markets within domestic borders – roads and bridges stitch together far-flung towns to regional centers, while railroads carry goods from factories to markets throughout the domestic economy. In today’s increasingly connected world, however, physical infrastructure needs to be considered in a broader context as firms globalize their operations and economies become part of global value chains. High-quality roads, bridges, ports, airports, and railroads help connect regional economic poles and transport goods and people throughout the APEC region, strengthening regional transportation networks and reducing transaction costs.

APEC Leaders have made physical connectivity a priority, calling for an expansion of trade routes and corridors; strengthening regional quality transportation networks, including roads, railroads, ports, and airports; advancing cross-border energy networks and interconnections; and achieving universal and high-speed broadband access. To achieve these outcomes, Leaders have called for a focus on: improving the investment climate, the promotion of public-private partnerships (PPP), and developing, maintaining and renewing infrastructure for enhanced supply chain performance. Another potential avenue for future collaboration could be the development of government capacity and exchange of information on ‘quality of infrastructure’ (well-designed, sustainable, and resilient infrastructure) among economies.

▪ Cross-sectoral Issues

Public–private Partnership Initiatives

Infrastructure finance has been a continuing area of collaboration within the Finance Ministers’ Process since 1994. In recent years, public–private partnerships (PPP) have come to the foreground as a way to help governments access private sector financing for their infrastructure projects. Several initiatives are underway in APEC economies to enhance public sector capacity to undertake PPP projects.

APEC Senior Officials along with Senior Finance Officials have agreed to undertake an ambitious Multi-Year Plan on Infrastructure Development and Investment (MYPIDI). Knowing that private sector investors will only agree to a long-term investment in infrastructure if they can do so with confidence, APEC members have agreed on a multi-year framework based around four work streams designed to alleviate concerns and reduce long-term risks. Split evenly between Senior Officials and Senior Finance Officials, MYPIDI presents a welcoming environment for private sector finance in infrastructure by creating:

- A solid regulatory framework to foster a business-friendly environment that minimizes uncertainty and maximizes transparency and predictability;
- Integrated planning mechanisms to help firms navigate multiple levels of government over the long-term course of planning, constructing, and operating an infrastructure project;
- Government capacity to generate a pipeline of bankable infrastructure projects by developing a well-resourced government investment support team with the necessary expertise to help develop and deliver projects; and
- A financing environment to encourage long-term investors through well-functioning financial markets, including local currency bond markets.

APEC members' long-term aim is to create a regional infrastructure financing market by stitching together these enhanced local institutions and joining them in a regional network. Initial steps have already begun toward achieving these goals.

APEC Finance Ministers agreed at their 2013 meeting to establish an **APEC PPP Experts Advisory Panel** and to support (on a voluntary basis) a **Pilot PPP Center** based in Indonesia. The panel will help governments tap into private sector sources of funding for infrastructure development, particularly through promoting PPPs, by acting as a repository of skills that will bring good practices into the APEC region and help channel technical assistance to developing economies seeking such assistance. The Pilot PPP Center will be hosted in the Indonesian Ministry of Finance and will receive assistance from the PPP Experts Advisory Panel as Indonesian staff develop the expertise to coordinate the undertaking of PPP projects. Australia and Canada, among others, have provided multi-year funding to assist with implementation.

The 2014 APEC Finance Ministers' Process (FMP) under the presidency of China, continues to focus on the development of infrastructure, especially PPP modality. Two seminars were held with one seminar on Public Sector's Role in PPP Modality in Fuzhou, China in May and the other one on Mobilizing Long-Term and Stable Financing into Infrastructure Development in the Asia-Pacific Region in Dalian, China in June. Two PPP Experts Advisory Panel meetings were also convened, which finalized and endorsed the panel's terms of reference, and provided advice for Indonesia's PPP project development and the Pilot PPP Center's capacity building. To strengthen experience sharing, the FMP has collected and compiled nearly 55 infrastructure PPP cases in 18 APEC member economies. Based on the collected cases and discussions from APEC members, the FMP has formulated an implementation roadmap that will serve as a useful reference for APEC officials' future work on infrastructure PPP. The FMP also encouraged interested member economies to set up new PPP centers and strengthen capacity building and networking of existing PPP centers through the PPP Experts Advisory Panel, and training programs provided by member economies and international financial institutions. China's Ministry of Finance has made active efforts in this regard, including setting up a PPP coordination mechanism and a PPP Center within the Ministry, to guide work on PPP and promote development of standardized PPP projects in China.

Other APEC fora, specifically the Investment Experts' Group (IEG), are also addressing PPPs and other areas of infrastructure financing. The IEG has begun assembling a **PPP Guidebook** that compiles information on the variety of PPP frameworks already put in place by APEC economies. The guidebook will provide an overview of the process and

requirements within each APEC member economy required to establish a PPP project such as the legal and regulatory framework, institutions involved, government support and/or facilitation, PPP procedures, dispute resolution mechanism, and contact persons.

Additional IEG work related to PPP and MYPIDI include the **Investment Facilitation Action Plan (IFAP)** that aims to improve investment climates by providing economies with a menu of agreed upon investment policy options based on reviews of international best practice and inputs from the private sector as well as the public-private dialogue, an annual discussion between policymakers and private sector investors as part of an overarching APEC Strategy for Investment.

The **Transportation Working Group (TPTWG)** has been actively promoting PPP in developing dry ports and logistics parks. While dry ports are recognized as a means of integrating regional transport networks, logistics parks are seen as an instrument for enhancing supply chain connectivity via expanding and modernizing an economy through the attraction of foreign direct investment, technology transfer, employment generation, and access to better logistical services. The TPTWG project focuses on reviewing the current state and opportunities and/or barriers for public-private partnership investment in dry ports and logistics parks and establishing key common features for a framework to encourage collaboration between government agencies and private industries. Individual APEC member economies have also undertaken a variety of PPP-related projects. Sharing experiences and building from their best practices can help other APEC members improve their own understanding of the PPP process in the future.

Australia, Canada, and Korea have already developed functioning PPP frameworks and have been actively sharing their experiences and expertise throughout the Asia-Pacific region. Australia has partnered with Indonesia, the Philippines, Viet Nam, and the World Bank to boost private sector participation and investment in infrastructure. In addition, Australia is undertaking a self-funded project to develop a specifically tailored framework to enable Indonesia, Papua New Guinea, the Philippines, Thailand, and Viet Nam to develop well-prepared and bankable PPP transport infrastructure projects. The project will also develop strategies to ensure women in these economies will benefit from the PPP project outcomes.

Canada has partnered with ADB and International Enterprise Singapore to support the establishment of the Asia Infrastructure Centre of Excellence (AICOE), a project development facility that provides transaction advisory services to interested ASEAN governments. Additionally, Canada and Australia, through ADB, are providing further funding to strengthen the Philippine PPP Center and the Project Development and Monitoring Facility, and has helped to deliver five projects valued in excess of USD 1 billion. Australia's support for the Philippines' PPP Center now totals AUD 30 million. In August 2013, Canada added CAD 3 million to support capacity building and institutional strengthening in PPPs in addition to their commitment of CAD 1.2 million announced in 2011.

In addition, **Canada** released its National Policy Framework for Strategic Gateways and Trade Corridors in 2007 that focused on Canada's geographic advantages, long-term planning, public-private collaboration, and integrated approaches to optimize infrastructure, as well as related policy, regulatory, and operational measures. With respect to the Asia-Pacific Gateway and Corridor Initiative specifically, to date, the Government of Canada has invested approximately CAD 1.4 billion in gateway infrastructure projects, in partnership with all four western provinces, municipalities and the private sector, for a total project value

of approximately CAD 3.5 billion. These projects are key to improving the movement of goods and people, by alleviating bottlenecks and improving multimodal connections.

Chile has had a PPPs legal framework in place for over twenty years, reaching an estimated accumulated investment of more than USD 14 billion in this period. This has allowed Chile to gain experience in the development of bankable infrastructure projects that are in line with its economic and social development strategy, which seeks to obtain the necessary infrastructure to become a developed economy by 2030. In order to achieve this, Chile is looking to strengthen the framework of the concessions coordinator within the Ministry of Public Works, which is Chile's PPP Center as recognized by the World Bank.

Korea supports the ABAC initiated Asia-Pacific Financial Forum as a platform to discuss financial cooperation issues including capital markets development in the APEC region. As part of these efforts, a seminar on financial cooperation in APEC was held in Seoul in August 2014. Additionally, Korea has teamed with the World Bank and ADB to host an annual Asia PPP practitioners' network training program that aims to provide knowledge and skills for PPP units and government officials in the Asia-Pacific region. In addition, on Korea's suggestion, Korea and China agreed to hold APEC infrastructure training programs twice a year to help government and public institutions in the Asia-Pacific region develop their capacity in infrastructure development. Currently, Korea and China are co-hosting the program, but the program is open to any member economies that want to participate. The Korea Development Institute and China's Asia-Pacific Finance and Development Center (AFDC) are the lead institutions implementing the program.

Indonesia has been actively pursuing an enhanced PPP capacity by establishing a regulatory framework for PPP as part of their Masterplan for the Acceleration and Expansion of Indonesia's Economic Development in 2011.

Peru has a legal framework for PPPs in place and operating since 2008 and a General Directorate on Policy for the Promotion of Private Investment that includes PPPs, was created within the Ministry of Economy and Finance.

Russia has developed a Transport Strategy of the Russian Federation until 2030 that includes, among other aspects, a focus on satisfying the needs of business and developing effective and bankable infrastructure projects as envisioned under work stream 3 of the MYPIDI initiative.

As the above section has shown, APEC members have made considerable progress toward the development of PPPs as a viable option for coordinating infrastructure projects and securing private sector financing. As member economies become increasingly aware of the potential for PPPs to help improve the financing and efficiency of their infrastructure, additional areas for work will become more valuable.

APEC can ensure that each interested member economy contains a functioning, well-trained PPP unit within the government. World Bank data shows that 15 APEC economies currently have dedicated PPP units, leaving six members still to establish the PPP capacity necessary to draw in private infrastructure finance (World Bank website).

As these dedicated PPP units become operational, the next step is ensuring that domestic regulations and the legal environment are aligned with PPP requirements. APEC could partner with an institution such as the World Bank's PPP in Infrastructure Resource Center to

examine APEC economies' operating environment and benchmark outcomes against their Due Diligence Checklist for Legal and Institutional Enabling Environment for PPP framework. This document, consisting of 16 specific areas where domestic regulations can be altered to affect PPP decisions, could be a good set of guiding principles as APEC economies continue developing their PPP capacity.

Quality of Infrastructure

In August 2014, **Japan** held a capacity building seminar on the quality of infrastructure to share further details of these principles with government officials and other stakeholders to implement them in APEC economies. Japan also proposed to develop a guidebook to properly evaluate the quality of infrastructure by November 2014. This initiative aims to broaden the recognition on the importance of quality of infrastructure that includes lifecycle cost, environmental performance, and safety, and assist APEC economies to plan and develop infrastructure from such a perspective.

▪ Transport (Land, Maritime, and Air)

The efficient and safe transportation of goods and people is a key component toward APEC's goal of free and open trade in the Asia-Pacific region. Reliable infrastructure is also associated with stronger rates of economic growth. According to the OECD, economic infrastructure drives competitiveness and supports economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production, and creating jobs (OECD 2012).

The 8th APEC Transportation Ministerial Meeting Joint Statement affirmed Ministers' commitment to improve transportation systems to ease the flow of goods, people, services, and capital in the APEC region, and to continue to enhance the work on connectivity including in the areas of aviation, maritime, cruise industry, logistics, intercity and urban transport, intelligent transportation systems, and intermodal networks. Ministers directed the TPTWG to develop a transportation "Connectivity Map" and "Quality Transport" vision and to share best practices in enhancing transportation infrastructure investment. Ministers at the 25th APEC Ministerial Meeting welcomed the outcomes of the APEC Transportation Ministerial Meeting and encouraged further collaboration by relevant fora in APEC in promoting well-designed, sustainable and resilient transportation infrastructure, as well as convenient, efficient, safe, secure, and sustainable transport in the region.

APEC Leaders have recognized the trade-enhancing importance of physical infrastructure and called for an expansion of trade routes and corridors, and strengthened regional quality transportation networks, including roads, railroads, ports, and airports.

Land Transportation

Land transport includes road and railway connections, the primary means for moving tradable goods within an economy and across land borders, and vital pathways connecting foreign and domestic markets. These important avenues are expected to grow more crowded in the near future, however, as global passenger and freight travel is expected to double from 2010–2050, according to the International Energy Agency, which will require an increase of 25 million kilometers of paved roads and 335,000 kilometers of rail track – a 60% increase over the 2010 network (IEA 2013).

APEC has begun preparing for these next-generation infrastructure projects with 25 initiatives currently underway in the road transportation sector and 3 rail-based regional projects underway. This section elaborates on some of these initiatives to provide a broad-based explanation of how APEC's work is having an impact on regional land transportation.

Australia has been an active provider of funds for road building and technical training for developing APEC economies with 15 initiatives submitted, totaling over USD 2 billion in loans and direct aid assistance promised to regional economies.

Brunei Darussalam opened the Pandaruan Bridge linking Brunei Darussalam with Malaysia in December 2013. This bridge facilitates the movement of people, goods, services, and investment across the Brunei Darussalam–Malaysia border.

Canada, through its Gateways and Corridor Initiatives, provided federal investments of CAD 3 billion and has funded 94 strategic trade and transportation projects; these in turn leveraged total investments of almost CAD 14.5 billion. Projects have addressed bottlenecks and improved the efficiency and reliability of road, port, rail, and airport infrastructure across the economy. They also improved multimodal connectivity and facilitated freight movements.

Japan has been enhancing road connectivity in the Mekong region of Southeast Asia by creating the Mekong Development Roadmap under the Mekong–Japan Economic and Industrial Cooperation Initiative Action Plan. The roadmap was adopted at the Mekong–Japan Economic Ministers' Meeting and covers cooperation projects among Mekong economies as well as other initiatives from 2012–2015. Japan has also created Tokyo Strategy 2012 that was adopted at the Fourth Summit Meeting in April 2012 and Mekong–Japan Action Plan, adopted at the following Foreign Ministers' Meeting in July 2012. Japan is also enhancing connectivity in the ASEAN region through the Vital Artery for East–West and Southern Economic Corridor project.

Korea and UNESCAP have been pursuing sustainable transport development systems in the Asia-Pacific region by carrying out a project aimed at raising awareness and improving capacity of policymakers to develop economically viable, environmentally sound, and socially inclusive transport systems. Korea has also worked to enhance transport connectivity through its “One Card All Pass System” project that allows access to all the public transport modes (metro, bus, railway, highway, etc) throughout the economy with a single transport pass.

Peru has been enhancing its international road network through PPP projects, working on upgrading the Pan American Highway and developing two important transversal roads that form part of the Initiative for the Integration of Regional Infrastructure in South America, connecting Peruvian markets with neighboring economies and the Pacific coast. These efforts are to be continued with the development of the Longitudinal de la Sierra highway. Peru is also working on the improvement of urban transportation networks in the main cities to boost efficiency and competitiveness. An evaluation is underway to construct railway connections to bordering economies to provide an efficient and economical mode of transportation to boost trade and investment.

Hong Kong, China is building the Hong Kong, China section of the Guangzhou–Shenzhen–Hong Kong express rail link to connect Hong Kong, China to the People's Republic of China's national high-speed railway network. It is participating in a joint project to construct

a 50-kilometer (km) set of bridges and tunnels to provide a direct road link between Hong Kong, China; Macao; and the western part of the Pearl River Delta. The completion of a new cross-boundary facility in 2018 will greatly reduce traveling time between Hong Kong, China and the eastern part of Guangdong in China.

Malaysia and **Singapore** have begun discussions toward building a high-speed rail link between Kuala Lumpur and Singapore. Initiated in 2013, the 330-km rail link will reduce travel time between Kuala Lumpur and Singapore to 90 minutes from the current six hours by rail and four hours by road.

APEC members are at the leading edge of land transport innovation. APEC members could benefit by continued experience sharing, especially in the realm of multimodal connectivity. Programs such as the Pilot Project of Mutual Access of Trailer Chassis implemented by **Korea and Japan** and the Agreement on Sea-Land Intermodal Freight Vehicle Transportation between **Korea and China** could help establish a streamlined transport system for freight trucks traveling by road or car ferry across borders, reducing logistics costs and increasing connectivity.

Other areas of potential future work are also crosscutting issues. Initiatives such as the **Energy Working Group's** Maximizing Energy Efficiencies of Supply Chain Connectivity by Improving Rail-Waterway Intermodal Transport in APEC Economies project look to improve energy efficiency while also reducing logistics costs for supply chain trade. Combining institutional efficiencies and other regional goals such as environmental protection with management of physical infrastructure provides a rich environment for experimentation and progress for the APEC region.

Maritime Transport

As a body focused on improving trade connections throughout the Asia-Pacific region, a healthy supply of efficient, high-quality maritime transportation links is vital for APEC's future success. Cargo ships carried over nine billion tons of traded goods in 2012 representing 80% of global merchandise trade, according to UNCTAD (2013).

APEC economies and working groups recognize the importance of quality maritime transportation and have been actively working toward improving the quality, quantity, and efficiency of the region's ports. Twenty-five maritime-related initiatives were submitted as improving APEC's maritime infrastructure.

The Joint Statement of the 8th APEC Transportation Ministerial Meeting states that maritime trade can connect major Asia-Pacific centers in an efficient, resilient, secure, and economically viable manner. The Xiamen Declaration made by the APEC Ocean-related Ministers on 28 August 2014 also reaffirms their strong support to take actions to promote connectivity and communication among APEC members to facilitate the flow of goods, services, trade and investment.

Many APEC members have been building new port facilities or enhancing existing infrastructure. In **Thailand**, the Laem Chabang port extension project is in its third stage with a target of increasing cargo-handling capacity from the present 10 million twenty-foot equivalent units (TEUs) per year to 18.8 million TEUs.

Singapore has two port-related initiatives underway. The Maritime and Port Authority of Singapore commenced development of the Pasir Panjang Terminal Phases 3 and 4 in 2007. When completed in 2020, Singapore's total port capacity will increase to 50 million TEUs annually. Additionally, Singapore plans to consolidate port activities at Tuas, further harnessing technology to meet the future challenges of shipping, such as larger and more complex ships.

Peru has been actively enhancing port infrastructure. Currently, private companies are running the four main maritime ports and one river port; under PPP projects. Another important initiative, the Amazon Waterways project will be awarded this year. It will guarantee the permanent navigability of some important rivers of the Amazon basin and allow the implementation of a multimodal corridor connecting the northern Pacific Coast of Peru by the Port of Paita to Brazil and then to the Asian market.

Chinese Taipei is dedicated to fostering the development of ports to enhance the competitiveness of container transshipment continuously, establishing logistics subsidiaries and marine subsidiaries, attracting investment of free trade zones, and creating metropolitan ports by combining the cruise industry and waterfront tourism. Chinese Taipei also approved a five-year (2011–2016) port development project to construct infrastructure of seven ports. These construction items include an international container terminal center, logistics warehouses, international cruise terminals, expansion of port area, and other port infrastructure.

Indonesia is also actively enhancing its maritime infrastructure capacity, with nine initiatives submitted. Several projects are meant to improve capacity around the capital city and industrial hub of Jakarta with the development of Cilamaya Port and construction of the New Priok Port that will support increased trade volumes seen in the existing Tanjung Priok Port. Other projects are underway in other areas, including in East Kalimantan, Papua, Bintan, Sumatra, and Sulawesi.

Hong Kong, China has developed the Kai Tak Cruise Terminal to accommodate the world's largest cruise vessels. Cruise vacation is one of the fastest growing sectors in the tourism industry across Asia. The Asia cruise market is forecast to grow three-fold to 3.8 million passengers by 2020.

Other initiatives throughout APEC have sought to better connect regional maritime centers together. **China** established the China–ASEAN Maritime Cooperation Fund in 2011 to provide support for maritime transportation, port networks, maritime disaster management, and satellite technology. **Japan** has also worked to enhance connectivity in the ASEAN region through the Maritime ASEAN Economic Corridor project.

APEC as a forum has considerable opportunity to help facilitate the efficient and effective operation of maritime transportation and shipment, especially considering that a majority of maritime infrastructure development projects happen on a unilateral basis.

Canada and **China** instituted the Real-Time Tracking and Monitoring of Cargo Containers Pilot Project that helps increase connectivity by testing technologies that can be used for container tracking and security throughout the supply chain, thereby improving supply chain performance, visibility, security, and efficiency. APEC could serve as a forum to investigate

the outcomes of this project and scale up the initiative to increase security and supply chain efficiency while reducing uncertainty throughout the region.

Indonesia has begun their Development of Archipelago Belt Project that aims to connect the archipelagic nature of Indonesia's island geography by combining land transportation with ferries to link national arterial roads and ferry crossings to connect islands. Projects such as this that connect previously separated areas with commercial hubs could be valuable learning opportunities for a variety of APEC members as they develop their own national transportation systems via maritime connectivity.

Air Connectivity

Air connections play an important role in APEC connectivity, helping move people and trade throughout the region. The World Bank, backing this view, notes in a study of airline connectivity that 'the ability to move goods quickly, reliably, and at a reasonable price is a crucial ingredient in the trade performance of a wide range of economies,' specifically those involved in regional production chains that require precise, just-in-time delivery of specialized products (Arvis and Shepherd 2011).

The 8th APEC Transportation Ministerial Meeting Joint Statement states that an open and liberal international aviation regime is conducive to commercial and economic growth across the APEC region, in the context of promoting connectivity. The 25th APEC Ministerial Meeting Joint Statement welcomed this view.

APEC economies have been actively enhancing air connectivity capacity to boost trade and people-to-people connections. Twenty-two ongoing or recently completed initiatives seek to build new capacity or boost existing airport facilities as air travel and trade become increasingly popular in the Asia-Pacific region.

New airports have begun springing up throughout the Asia-Pacific region as rural areas begin to open up to the possibilities of enhanced regional connectivity. **Australia** will construct a second airport in Sydney; the city currently handles 40% of all international visitor arrivals. This new initiative will boost capacity for freight and trade flights as well as international travel and tourism.

Malaysia has constructed the world's largest purpose-built terminal for low-cost carriers at the Kuala Lumpur International Airport 2 facility. It aims to be Malaysia's next generation international airport hub as air travel becomes increasingly available and affordable, boosting the number of international travelers.

Indonesia has been actively building new airport facilities throughout its economy as its unique archipelagic geography makes enhanced air connectivity a priority. New international airport facilities are planned for Sumatra and Java, with the expansion of existing facilities to handle increased passenger travel throughout the economy.

Other APEC member economies are also expanding existing capacity as air connections draw the region closer together. **Brunei Darussalam** is expanding the Brunei International Airport, aiming to double passenger capacity by the end of 2014. **New Zealand** and **Thailand** have also announced plans to upgrade their key international arrival terminals, allowing for more travel and trade opportunities throughout APEC.

Chinese Taipei has two major international airports, Taoyuan International Airport, mainly for intercontinental and regional routes, and Kaohsiung International Airport, for regional routes. Taoyuan International Airport is planning to build a new terminal, upgrade existing facilities, and expand the land to include a third runway, among others. To facilitate air connectivity and provide air carriers with more opportunities, Chinese Taipei is pursuing a gradual liberalization approach for airport development, airline competition, and consumer choices.

Chile is in the process of conducting a public tender of its main airport, Arturo Merino Benitez, as the current concession that has been in operation since 1998, will expire in 2015. This PPP considers the remodeling of its current passenger terminal as well as its expansion and the construction of a new international terminal, thus separating the flow of domestic and international passengers, duplicating the current available terminal space. This will allow the necessary infrastructure to go from the current flow of 16 million passengers a year to 30 million.

Hong Kong, China and **Singapore** are also working toward an enhanced three-runway system along with the requisite facilities, including terminal buildings. These improved runways will allow the handling of more passenger and trade traffic.

Peru is adding a second runway to the Jorge Chavez International Airport serving the capital city, Lima. Additionally, all airports are being improved by the companies that got the award to operate them five years ago. A new airport in Cusco, the Chincheros International Airport is to be constructed through a recently awarded PPP project. This airport will improve capacity to receive more planes and more direct international flights, thus increasing air connectivity.

Russia, within the framework of the Eurasian Economic Union, is aiming to renew its air fleet as well as those of its closest neighbors (Belarus and Kazakhstan), build more infrastructure that will support air transportation, and conduct a coordinated transport policy to eventually establish a common market for services in air transport (Eurasian Economic Commission 2014). Such actions should positively impact the number of shipments transported by air in the region, as well as the flow of international passengers.

Other APEC member economies have been furthering the technical aspects required for enhanced airline traffic. **Korea** has initiated a program to transfer expertise in Doppler VHF omni directional radio range or distance measuring equipment to ICAO members. This project will contribute to enhancing connectivity in the region by strengthening aviation safety in the region.

The Philippines and other ASEAN members have agreed to develop the ASEAN Single Aviation Market. The Philippines' accomplishments include ratifying and implementing the Multilateral Agreement on the Full Liberalization of Air Freight Services to improve trade connections as well as the Multilateral Agreement on the Full Liberalization of Passenger Air Services to improve people-to-people connectivity.

The increasing importance of air transportation in trade is an area APEC members are well suited to address. Of particular interest as a crosscutting issue is aviation security and trade facilitation. Initiatives such as the **Australian**-led ASEAN Improving Regional Infrastructure and Connectivity Through Enhancing Aviation and Maritime Security project would mark an

area of potential success. By focusing on the needs and experiences of airport security for both passengers and trade, APEC members could share experiences and work toward international best practices, increasing both the efficiency and security of air connectivity.

Additionally, APEC members could share experiences in air transport market liberalization, outlining the benefits and challenges with opening markets to increased competition. Other areas of potential progress are enhanced tracking and monitoring of goods traded by air throughout the supply chain, and increasing security and efficiency while reducing uncertainty for businesses operating throughout the Asia-Pacific.

▪ **Information and Communications Technology Infrastructure Development**

Information and communications technology (ICT) development has been a focus of APEC work since its inception in 1989, as increased information sharing and improved communications technology allow for faster connections between people throughout the Asia-Pacific, facilitating trade and economic growth throughout the APEC region. The UN's International Telecommunication Union reports that a 10% increase in broadband internet access is associated with a growth in per capita GDP of roughly 0.2%, demonstrating real results for personal economic development (ITU 2014). APEC Leaders have thus called for APEC to 'achieve universal and high-speed broadband access' throughout the region, a challenge that will require substantial effort to achieve.

To support ICT's role in APEC's development and work toward the Leaders' ambitious target, the **Telecommunications and Information Working Group (TEL)** has been actively working toward the APEC TEL Strategic Action Plan composed of five key priorities:

- Develop ICT to promote new growth
- Enhance socio-economic activities through the use of ICT
- Promote a safe and trusted ICT environment
- Promote regional economic integration
- Strengthen cooperation in the ICT sector

To help implement these goals both the TEL and individual member economies have been enhancing ICT capacity and efficiency. The TEL and the Committee on Trade and Investment (CTI) have cooperated on submarine cable protection as well as hosting an Asia-Pacific Information Infrastructure (APII) Testbed Project to connect research centers throughout the APEC region as they develop APII technology.

The **Electronic Commerce Steering Group (ECSG)** and its subfora are responsible for developing initiatives that meet the following objectives designed to facilitate the use of technology as an enabler of trade, innovation, new business models, supply chain connectivity, and education and people-to-people connectivity. These key elements under consideration are: (i) emerging issues that have an impact on regulatory and policy frameworks with the goal of facilitating data driven innovation and the adoption of emerging technologies and related business models that drive growth, employment, and societal benefit; (ii) continued evolution of a unified approach to data protection, trust, and confidence that addresses privacy and security in emerging technologies and business models in a way that also allows the benefits of innovation to accrue to individuals and society; and (iii) the role of technology and related policies that facilitate trade and enable efficient supply chains and connectivity, including at the border, across the border, and behind the border.

Peru's ICT infrastructure upgrading is a priority to be developed by seven projects, including the National Optical Fiber Backbone Project that aims to increase access to broadband by integrating up to 92% of the economy. This shall increase the speed of data transfer, hence reducing consumer costs and improving competitiveness, as well as facilitating social inclusion and institutional transformation toward an information and knowledge based society.

Indonesia has also prioritized the development of a national fiber optic network, constructing the Palapa Ring fiber optic backbone as part of the Masterplan for Acceleration and Expansion of Indonesia Economic Development. This initiative will connect Indonesia's telecommunications network and enhance the quality and capacity of the national broadband infrastructure.

The Philippines has done considerable work on submarine cables, including the development of the BIMP-EAGA⁴ Submarine Terrestrial Cable System Project. This initiative, once completed, will link Brunei Darussalam, Malaysia, the Philippines, and Indonesia.

New Zealand has been constructing internet links to connect rural residents by unveiling an ultra-fast broadband program along with a rural broadband initiative. These projects will improve connectivity across New Zealand, reducing geographical barriers to economic growth.

Russia is engaging with its closest neighbors (Belarus and Kazakhstan) within the framework of the Customs Union and the Single Economic Space to establish an integrated information system of the Eurasian Economic Union (EAEU). The system will require further development of the common ICT infrastructure between the EAEU members and is aiming to create new information exchange mechanisms and databases to strengthen the level of cooperation between relevant agencies, including those regulating trade and customs. This initiative aims to increase the efficiency of relevant national agencies and decrease the amount of administrative barriers in place. Russia also prioritizes promoting research and cooperation in the APEC region enabling effective use of data and software, in particular electronic documents and transactions including electronic means of authentication, and improving security methods.

Over the past decade, **Canada** has pursued several targeted initiatives to improve broadband services to unserved households in rural and remote areas. Most recently, Canada's 2014 budget announced CAD 305 million over five years to extend and enhance broadband services to a target speed of 5 megabits per second (Mbps) for up to an additional 280,000 Canadian households, which represents near universal access. This commitment forms a key deliverable in Canada's digital economy strategy, Digital Canada 150. The new federal program builds on the success of the previous Broadband Canada: Connecting Rural Canadians Program (2009–2012) that extended broadband coverage at speeds of 1.5 Mbps to 218,000 previously unserved households.

⁴ BIMP-EAGA stands for Brunei Darussalam, Indonesia, Malaysia, Philippines–East ASEAN Growth Area.

The United States is committed to supporting and promoting a competitive free market environment, the use of and access to broadband services, and initiatives under the Federal Communications Commission's Universal Service programs. Recently, the Universal Service programs have undergone reforms that are modernizing the way in which investments and access to 21st century broadband services are provided. These programs include the Connect America Fund for rural areas, the Lifeline program for low-income consumers and expanding access for Native Americans, and increasing access to faster broadband speeds for schools and libraries under the E-rate program and rural health care providers. Between June 2010 and June 2012, the number of Americans with access to broadband download speeds of 50 Mbps or greater grew from just over 10% to almost half the population at 47%. According to a recent report published by the National Telecommunications and Information Administration (NTIA), 98% of Americans have access to wired or wireless broadband at combined advertised speeds of 3 Mbps or higher, while over 93% have access to advertised wireline broadband speeds of at least 6 Mbps.

Korea has sought to bridge the digital divide between APEC member economies by carrying out ICT development consultation programs in Indonesia, Peru, and Viet Nam, and establishing information access centers that offer infrastructure with better access and opportunity to use IT for the general public in the developing member economies.

Building on a strong foundation of ICT work, APEC member economies should be able to continue leading the way forward in areas of ICT cooperation. Potential areas of overlap and crosscutting initiatives are in data standards and the protection of cross-border flows of information, areas currently being examined under the institutional connectivity pillar.

▪ **Energy Infrastructure Development**

Energy sources such as electricity, oil, and gas are the fuels that power APEC economies and allow trade to be possible. Sufficient energy infrastructure such as power plants, electricity lines, and oil and gas pipelines allow energy to be efficiently transported to the areas where it is needed most, including for regional and global trade. OECD members increased electricity generation capacity at a 2.4% annual rate between 1990 and 2004, while electricity consumption grew 2.3% annually, according to an International Energy Agency (IEA) analysis (IEA 2007). Further IEA estimates show that USD 1.7 trillion of energy infrastructure investment is needed globally by 2035, with 60% of the total coming in the power generation sector. Ensuring sufficient investment in infrastructure and cooperation on regional power grids and pipelines is crucial to maintaining sufficient productive capacity as APEC economies continue to develop.

To help meet this demand and drive the spread of energy trade, APEC economies have undertaken a variety of cross-border energy initiatives. **Malaysia** is constructing high-voltage power lines connecting it with the **Indonesian** islands of Sumatra and Borneo. These investments in strategic transmission assets will help optimize power networks by reducing the need for reserve capacity, improve system reliability, remove transmission bottlenecks, and transmit cheaper power from one area to another. Each economy will exchange peaking capacity and spinning reserve due to differences in peak hours and load curves. This will contribute to regional energy security while promoting efficient utilization and sharing of resources as well as promote economic development at the subregional level.

ASEAN members have signed up to the ASEAN power grid system and the Trans-ASEAN Gas Pipeline. The power grid system aims to build a regional power transmission network linking all ASEAN members to one power grid. Currently six of the planned sixteen cross-border interconnections have been put in operation. The Trans-ASEAN Gas Pipeline aims to connect the gas pipeline infrastructure of all ASEAN members into one linked system, allowing natural gas to be transported across the borders of all ASEAN members.

Russia is making significant progress in developing its LNG export capacities that by 2030, could satisfy as much as 30% of the needs of the Asia-Pacific region in natural gas. The interconnection gas pipeline between Russia and China that will be put into operation by 2019, should also be a significant contribution to the energy security of the region in general. The Eastern Siberia–Pacific Ocean oil pipeline project is going to be developed in coming years with an aim to enlarge its capacity almost two times that would make a sizeable contribution to the energy infrastructure development in the region. Additionally, Russia has agreed with Belarus and Kazakhstan, within the framework of the Eurasian Economic Union (EAEU), to establish a common energy market. Several step-by-step programs will be developed to ensure that in 2015–2025 a common market for electricity, gas, and oil will be established. For APEC economies the conclusion of this work will mean access to a greater energy market under the single legal base of the EAEU.

Peru has awarded a concession for the design, financing, construction, operation, maintenance, and transfer of a 1,200-kilometer gas pipeline that will transport natural gas from the production fields to the southern Peruvian Coast. This pipeline will initially feed two thermal plants with a total power generation capacity of 800 MW that will allow the development of petrochemical activities.

APEC has considerable experience to employ future energy initiatives, especially in trade and environmental sustainability. According to an OECD study, these two areas offer strong complementarity by reducing some of the intermittency risks associated with renewable energy such as wind or solar power by using cross-border electricity trade to expand the geographic scope of energy production and coverage (Bahar and Sauvage 2012). APEC would be an ideal forum to explore this concept of expanded cross-border energy trade and renewable energy in a non-binding manner.

Additional environment-related energy initiatives could follow the lead of **Canada**, which pioneered the Canadian Climate Fund for the Private Sector in Asia. The purpose of the fund is to catalyze greater private sector investment in clean energy, climate change mitigation, and adaptation in the Asia-Pacific. It is an innovative way of engaging the private sector in clean energy infrastructure and it could be studied and expanded in the APEC context, building on APEC's strength of regional cooperation.

Another potential area where current work could be expanded is through the joint **Transportation Working Group (TPTWG)** and **Energy Working Group (EWG)** APEC Carbon Footprint Project proposed and managed by Canada. The project will develop a methodology to allocate vessels' carbon emissions per port and per cargo type for the marine transportation segment serving trade between North America and the Asia-Pacific region. A key outcome of the project will be a software tool to enable marine carriers and government policymakers to identify new opportunities for energy efficiency improvements in the marine sector, anticipated to lead to fuel savings and reduced carbon emissions. The project's duration is from 1 June 2013 to 31 December 2014. A successful outcome could be expanded

to include other APEC economies by enabling stakeholders, including ports and carriers, to monitor and allocate emissions from ocean-going vessels and identify opportunities to improve marine transportation energy efficiency and reduce emissions, improving competitiveness and effectiveness of supply chains using a common methodology that has been peer reviewed by stakeholders in the APEC region.

B. INSTITUTIONAL CONNECTIVITY

APEC defines trade facilitation broadly, particularly in terms of reducing trade transaction costs, as stated in its Trade Facilitation Action Plan (TFAP) initiative: ‘Trade facilitation refers to the simplification and rationalization of customs and other administrative procedures that hinder, delay or increase the cost of moving goods across international borders’ (APEC 2007, p. 1). The TFAP includes the following principles as a guide for trade policies within APEC:

- Transparency, communications, consultations and cooperation
- Simplification, practicability, and efficiency
- Nondiscrimination, consistency, predictability and due process
- Harmonization, standardization, and recognition
- Modernization and the use of new technology

▪ Customs and Border Administration

The **Sub-Committee on Customs Procedures (SCCP)** reported that a Single Window (SW) system, one of the main elements of its Collective Action Plan (CAP) since 2011, has the goal of encouraging each member economy to develop its own system by 2020. The SCCP highlighted that this initiative also intends to promote international interoperability between SW systems and paperless trading through the SW systems within APEC.

Individual economies have worked intensively to improve their SW and paperless trade systems. For example, **Peru** launched its Single Window for Foreign Trade (VUCE) in 2010, electronically streamlining permits, certificates, and licenses across multiple agencies for entry and exit of goods. VUCE comprises three components: restricted goods, port of origin, and port of destination. In addition, Act N° 27269 about "Digital Signatures and Certificates" is in force to regulate the use of electronic or digital signature, both of which will have the same validity and legal effectiveness of the handwritten signature. In **Japan**, the SW system has cut air cargo import processing times by about half from 25.7 hours in 2001 to 13.4 hours in 2012 (APEC 2014).

The SCCP also put forward the APEC Customs 3M Strategic Framework, which was endorsed at the 2014 Meeting of APEC Ministers Responsible for Trade. The framework encourages member economies to cooperate through mutual assistance, mutual recognition, and mutual sharing (abbreviated as 3M) with the aim to better facilitate and secure trade in the Asia-Pacific region. The framework also sets the short-term and long-term goals and will be reviewed periodically.

The SCCP’s CAP includes the development of authorized economic operator (AEO) programs and mutual recognition arrangements (MRA) that encourage each member economy to develop AEO programs and conclude MRAs of equal-caliber to the AEO programs. Recently, cross-border e-commerce has also been included under the CAP and the SCCP has attempted to map the regulatory issues in e-commerce to have an overview of the supervision, control, and law enforcement activities in the APEC region, as well as to discuss the needed capacity building programs.

Russia submitted a domestic initiative of electronic documentation that aims to establish the principle of prior importance of electronic documents in customs procedures in Russia by 2015. Moreover, with the Customs Union between Belarus, Kazakhstan, and Russia in place, all APEC economies have the same access to the common market of goods that exists within the common customs territory of three economies. The work that is being done to improve the existing legal base of the Customs Union includes both the development of an AEO program and a SW mechanism. In addition, the latest draft of the new Customs Code implements most of the provisions of the WTO Trade Facilitation Agreement. This is important to ensure easier access to the common market by APEC small and medium enterprises. The new Customs Code is expected to enter into force in 2016.

Several bilateral initiatives include the **Viet Nam** Automated Cargo and Port Consolidated System. This e-customs project is developed based on the existing Japanese customs automation system and adapted for Viet Nam Customs.

In ASEAN, the **Philippines** provided the example of the ASEAN-wide self-certification system to be completed in 2015. This regional system will allow exporters from participating ASEAN members to self-declare their goods without presenting certificates of origin.

On intermodal systems, **Hong Kong, China** provided the example of the Intermodal Transshipment Facilitation Scheme (ITFS). Launched in November 2010, the scheme facilitates the clearance of air–land and sea–land transshipment cargo through the application of electronic lock (e-lock) and global positioning system equipment. The ITFS enables single customs inspection, either at land boundary control points or at the Hong Kong International Airport and the Kwai Chung Customhouse.

Since 2013, **Chile** has implemented a SW system (SICEX) – in a first stage only for exports – that incorporates the connectivity between SICEX and the Chilean Customs Administration to provide customs brokers an expedited system of processing export declarations. The current system, incorporating the major government agencies, allows exporters and customs brokers to process their export declarations and shipment authorizations for a specific number of goods. The system is expected to incorporate new goods as well as other customs operations.

The 2014 APEC Ministers Responsible for Trade Statement also highlighted the following key priorities: the formulation of the Guidelines for APEC Customs Transit and continuing work on the Time Release Study (TRS). The TRS is an SCCP CAP objective to measure the average time required for customs clearance and other import-related processes. Japan, as the CAP coordinator, monitors the implementation status of member economies through a survey. Several economies have consistently updated their TRS report.

▪ **Supply Chain Connectivity**

The supply chain connectivity framework identified eight chokepoints to facilitate the smooth flow of goods, services, and business travelers throughout the APEC region and suggested actions to address these chokepoints. Subsequently, in 2010, Ministers endorsed the APEC Supply Chain Connectivity Framework Action Plan (SCFAP) with a view to achieving an APEC-wide target of 10% improvement by 2015 in supply chain performance in terms of reduction of time, cost, and uncertainty of moving goods through the region. The eight chokepoints are:

- 1) Transparency: lack of transparency and/or awareness of the full scope of regulatory issues affecting logistics; lack of awareness and coordination among government agencies on policies affecting the logistics sector; absence of single contact point or champion agency on logistics matters.
- 2) Infrastructure: inefficient or inadequate transport infrastructure; lack of cross-border physical links (for example, roads and bridges).
- 3) Logistics capacity: lack of capacity of local and regional logistics sub-providers.
- 4) Clearance: inefficient clearance of goods at the border; lack of coordination among border agencies, especially relating to clearance of regulated goods at the border.
- 5) Documentation: burdensome procedures for customs documentation and other procedures, including for preferential trade.
- 6) Multimodal connectivity: under-developed multimodal transport capabilities; inefficient air, land, and multimodal connectivity.
- 7) Regulations and standards: variations in cross-border standards and regulations for movements of goods, services, and business travelers.
- 8) Transit: lack of regional cross-border customs-transit arrangements.

At the APEC Leaders' meeting in Bali in October 2013, APEC Leaders recognized that achieving APEC's 2015 objective of a 10% improvement in supply chain performance throughout the Asia-Pacific region will require robust capacity building efforts.

APEC Leaders agreed to accelerate work to achieve that objective including by advancing the systematic approach to improving supply chain performance. They also instructed officials to develop a capacity building plan to assist economies, particularly developing economies, in overcoming obstacles to improving supply chain performance. In that regard, they established an APEC Sub-Fund on Supply Chain Connectivity and encouraged contributions of resources to execute this capacity building plan. Also in Bali, APEC completed Stage 1 of the systematic approach, when Ministers endorsed the inventories of policy recommendations for all eight SCFAP chokepoints. Lead economies continue work toward the completion of Stage 2, namely diagnostic reports for these chokepoints based on the inventories that will identify specific performance improvements that economies should make to meet the 2015 objective, and provide economies with ideas on future projects to include in the capacity building plan.

Initial work toward this goal is focused capacity building and technical assistance projects on improving the supply chain performance and implementing the commitments of developing economies under the WTO Trade Facilitation Agreement.

APEC has identified in a capacity building plan, five initial projects for improving supply chain performance:

- Pre-arrival processing
- Expedited shipments
- Advanced rulings
- Release of goods
- Electronic payments

APEC Ministers also approved the creation of the APEC Alliance for Supply Chain Connectivity (A2C2) that will bring together willing program recipients, supply chain experts, and donor economies to advise how APEC and the recipient economies can quickly

improve the performance of their supply chains and implement their WTO Trade Facilitation Agreement commitments.

The A2C2 process will rely on supply chain experts from around the region. A2C2 participants will be asked to contribute to successful A2C2 outcomes, by helping to:

- shape technical assistance provided to economies who volunteer for such assistance;
- identify readily available low cost tools and methodologies to include in the provision of this assistance;
- seek out available experts to deliver the assistance;
- highlight the resources required for effective implementation of the assistance (for example, software, model regulations or procedures, provision of in-kind expertise, funding); and
- identify practical ways for APEC economies to address chokepoints in supply chains in the region.

Security issues, particularly those that are related with terrorism, also received attention. The Counter-Terrorism Working Group (CTWG) highlighted the APEC counter-terrorism and secure trade strategy in four crosscutting areas for action:

- 1) Secure supply chains: Provide for the secure, efficient, and resilient movement of goods throughout the region.
- 2) Secure travel: Provide for the secure, efficient, and resilient movement of travelers across the region.
- 3) Secure finance: Protect against the flow of finance for use in terrorist and associated illicit activities, and secure financial institutions against such activities.
- 4) Secure infrastructure: Ensure the security and resilience of critical infrastructure that supports and enables economic activity across the APEC region.

On security issues, the APEC Major Events Security Framework aims to provide all APEC economies with common practices and standards to successfully plan and execute security at major international events such as the Olympics and at domestic and regional summits.

Australia is implementing a self-funded project to develop measures to reduce post-harvest losses in Indonesia, Papua New Guinea, the Philippines, Thailand and Viet Nam, focusing on the transport supply chain connectivity component.

Canada has been measuring supply chain performance, reliability, trade logistics fluidity, and overall supply chain competitiveness since 2008. These time series data include a fluidity indicator and port utilization indicators that provide key reliability metrics for the supply chains that link Asia and Canada and the United States. The data show that Canadian supply chain reliability improved between 2008 and 2011, and dwell time at Canada's Asia-Pacific gateway ports decreased by 21% from 2010 to 2011. Canada's gateway initiatives are more than bricks and mortar; they include policy and regulatory measures in support of a competitive business environment as well as collaboration with domestic and international partners to strengthen the network and facilitate trade. Through the Asia-Pacific Gateway and Corridor Initiative's international outreach, Canada promotes exchange and the sharing of best practices, with a focus on improving supply chain connectivity with the Asia-Pacific

region. For example, Canada and China co-hosted the 2012 Trade Logistics Policy Forum to share best practices and improve connectivity.

Japan has worked to enhance connectivity in the ASEAN region through the Soft Infrastructure Projects for All ASEAN Regions that covers broad supply chain connectivity and other aspects of institutional connectivity.

New Zealand submitted an initiative related to Chokepoint 8 of the SCFAP that addresses a lack of regional cross-border customs-transit (transshipment) arrangements. ADB (2009) noted that transit operations can generate significant additional transport and administrative costs for imports and exports; in addition, long waiting times at border crossings is a major contributor to the high cost and uncertainties of delivery times. The APEC CTI 2011 paper (2011/SOM1/CTI/018) highlights the impediments relating to cross-border customs-transit arrangements, including the following:

- Customs issues: varying customs documentation standards; need for multiple financial guarantees; lack of adequate IT infrastructure and inter-operable data-sharing system; arbitrary administrative fees and delays at customs offices.
- Goods inspection issues: uncoordinated national AEO programs; delays in security screening.
- Land transportation issues: restrictions on registration of trucks and drivers.

Some suggestions to address the above impediments are provided in the CTI document (2011/SOM2/CTI/012) including the following measures:

- Transit systems in the APEC region are to be modeled after the European customs transit model. Elements within the European model, such as the New Computerized Transit System, facilitate trade by linking customs offices, thereby increasing the efficiency and effectiveness of transit procedures.
- The need for a common guarantee system, where only one comprehensive guarantee is required to cover the entire transit route for any given consignment of goods.
- Employment of risk management techniques to identify and administer selective inspection of 'high-risk' goods in transit can also help to expedite the clearance of low-risk goods in transit, especially goods transported by AEO companies.

Chile is currently leading the initiative to address Chokepoint 8. In this context, and in line with the approach agreed to by Leaders in 2012, Chile has presented a policy inventory as well as a diagnostic report that contains guidelines that address the problems brought about by the lack of regional cross-border customs-transit arrangements.

The Philippines submitted an initiative related to ASEAN, which established the Framework Agreement on the Facilitation of Goods in Transit, adopting most favored nation treatment, national treatment, consistency, simplicity, transparency, efficiency, appeals, and mutual assistance principles (World Bank 1998).

In 2011, APEC adopted the voluntary APEC Pathfinder to Enhance Supply Chain Connectivity by establishing a baseline de minimis value where 10 economies (Brunei Darussalam; Hong Kong, China; Japan; Korea; Malaysia; New Zealand; Russia; Singapore; Chinese Taipei; and the United States) committed to exempt express and postal shipments

from customs duties or taxes and from certain entry documentation requirements for shipments valued at or less than USD 100, recognizing that economies may choose not to apply such exemptions for restricted goods or from taxes that are also applied to domestic goods. The objective of the proposal was to help further integrate supply chains by providing businesses with an additional level of predictability for low value shipments (based on information from APEC CTI).

Security issues are also important under supply chain and transport facilitation. Customs and transport authorities play a central role in preventing illegal activities such as smuggling and terrorist-related activities. **Australia** reported on the initiative to improve regional infrastructure and connectivity through enhancing aviation and maritime security. **Canada** supported the capacities for the container control project that assists ASEAN governments in establishing effective container control measures that will prevent trafficking and other illicit container activities and facilitate legitimate trade and raise state revenues. **Canada** also supported the multi-phased training to enhance ASEAN region counter-terrorism efforts through capacity building in forensic skills, investigative skills, and rules on processing police data. In total, there are 17 items being submitted by economies that are related to counter-terrorism activities.

Services are said to be the glue that connects supply chains across the globe. **Australia** has commissioned the Services Trade Access Requirements (STAR) database, developed and hosted by the Australian APEC Study Centre at RMIT University. The database contains regulatory information for all APEC economies in relation to financial, mining and energy, professional, telecommunications, transportation and logistics services (2012) and for 15 APEC economies in relation to education, distribution, and computer and related services (2013). The STAR database is currently being updated and expanded to cover all APEC economies for all eight sectors, after which it will be promoted to users.

To facilitate more secured cross-border flows of information, the **Electronic Commerce Steering Group** highlighted APEC's initiatives on the Cross-border Privacy Enforcement Arrangement to increase the protection of cross-border flows of personal information; the cross-border privacy rules system to help build consumer, business, and regulator trust in the electronic cross-border flow of personal information; and the APEC strategies and actions toward a cross-border paperless trading environment to reduce and eliminate the required paper documents in trade administration, customs clearance, international transportation, and financial settlement (by 2020).

The **Telecommunications and Information Working Group (TEL)** submitted an initiative on an APEC e-Government Research Center to facilitate the development of e-government through information sharing and collaboration among APEC members.

Another recent **Committee on Trade and Investment (CTI)** initiative is e-Port that aims to raise understanding and awareness of e-Port as solutions to achieve targets set in regional supply chain connectivity objectives and realize Single Window systems and port modernization.

The CTI is also discussing pre-arrival processing. A pre-arrival processing framework allows the trade community to provide customs data prior to goods' arrival, so customs and traders can better organize their work in advance of arrival. Pre-arrival processing reduces delays and bottlenecks at border crossings; enables just-in-time delivery; reduces storage, insurance, and

transaction costs; and enables more efficient use of human resources. Improvements in pre-arrival processing are also aligned with economies' obligations under the WTO Trade Facilitation Agreement. The initiative on global data standards (GDS) is also important for improving supply chain connectivity, as having harmonized data standards will facilitate the physical movement of goods across borders.

The CTI project on Application of GDS to Enhance Supply Chain Connectivity enhances stakeholders' understanding about the potential benefits of GDS through information sharing on different GDS applications in supply chains for trade facilitation, border management, and information systems interoperability. This will facilitate the physical movement of goods across borders as well as enhance supply chain integrity.

The 8th APEC Transportation Ministerial Meeting instructed the Transportation Working Group (TPTWG) to develop a transportation 'connectivity map' that will visualize APEC's ideal of physical and institutional integration to be reached by the year 2020 (APEC 2013). The TPTWG has also developed a set of core principles outlining best practices in the economic treatment of international business aviation operations that 'serve to open the door to global commerce for smaller communities and rural populations across the region that require access to major cities and manufacturing centers.' The TPTWG is also developing principles that embody best practices in the economic treatment of commercial maritime operations.

China submitted two domestic initiatives related to economic cooperation along the Silk Road trade route. The economic belt along the Silk Road features five links including policy, road, trade, currency and people, and focuses on results-oriented and project-based cooperation, aimed at bringing tangible benefits to the region. The Maritime Silk Road of the 21st Century will promote cooperation in connectivity, maritime economy, disaster management, and navigation safety, among others, with economies on the Maritime Silk Road.

▪ **Financial Integration**

Issues of financial integration and a better investment climate are important for APEC in encouraging cross-border investment to support growth in the region. Initiatives such as the Asia Region Funds Passport (ARFP) enable a more diverse range of investment opportunities and deepen the region's capital market to attract finance for growth. The ARFP's common objectives are:

- Provide investors with a more diverse range of investment opportunities.
- Deepen the region's capital market to attract finance for growth.
- Grow the pool of funds available for investment in the region.
- Strengthen the capacity, expertise, and international competitiveness of financial markets in the region.
- Maintain legal and regulatory frameworks that promote investor protection, fair, efficient, and transparent markets for financial services, support financial stability and provide high standards.

Four APEC economies (Australia, Korea, New Zealand, and Singapore) signed the ARFP Statement of Intent at the 2013 APEC Finance Ministers' Meeting. These four APEC

economies, along with the Philippines and Thailand, have also participated in the joint consultation on the ARFP arrangements from April to July 2014. It is envisaged that the ARFP arrangements will be finalized in 2015, and that eligible collective investment schemes will have access to the ARFP by January 2016.

Other finance-related initiatives in the region are the Asian Bond Markets Initiative (ABMI) and payment versus payment (PvP) links. ABMI is an initiative pursued by the ASEAN+3 economies (10 ASEAN members plus China, Japan, and Korea) to foster the development of local currency bond markets to enable better utilization of Asian savings for Asian investments. Currently, ABMI focuses on various initiatives in the following four taskforces: promoting issuance of local currency-denominated bonds, facilitating the demand of local currency-denominated bonds, improving the regulatory framework, and improving related infrastructure for the bond markets.

PvP attempts to eliminate settlement risk by allowing both currency legs of a foreign exchange transaction to be settled in the respective real-time gross settlement systems simultaneously. So far, **Hong Kong, China** has developed three cross-border PvP links with **Malaysia, Indonesia, and Thailand**.

In addition, **Russia**, within the framework of the Eurasian Economic Union, agreed to harmonize its legal base with its neighbors by 2025 in accordance with Chapter XVI of the Treaty on Eurasian Economic Union. This work aims to ensure nondiscriminatory access to financial services to companies registered in any one economy (including APEC companies operating in Russia) within the common market of the Union.

▪ **Regulatory Coherence and Cooperation and Good Regulatory Practices**

On regulatory coherence, several submitted initiatives focus on regulatory cooperation through the sharing of best practices and regulatory issues. For example, in the initiative on Advancing Regulatory Cooperation in Chemicals, the end goal is to develop a roadmap that will prioritize the implementation of best practice principles and cooperation in examining how chemical regulations can interact with other regulatory systems in the region. This regulatory roadmap is expected to enhance trade flow by developing and enhancing chemical assessment interfaces.

Activities to cooperate and coordinate on building capacity to implement the Globally Harmonized System for Chemicals Classification and Hazard Communication are also ongoing. The APEC **Chemical Dialogue** expanded its regulatory cooperation agenda to develop best practice principles for the regulation of chemicals and created the Regulator's Forum in 2009 to provide a venue for chemical regulators from across the region to discuss items of mutual interest.

The **Sub-Committee on Standards and Conformance (SCSC)** is undertaking initiatives that support connectivity by eliminating burdensome and outdated regulations, aligning regulatory approaches, and facilitating regulator-to-regulator dialogue and cooperation. Examples are the Food Safety Cooperation Forum (FSCF) work on regulatory cooperation, beginning with export certificates and pesticide maximum residue limits, and the FSCF's Partnership Training Institute Network that leverages academia and industry for training to align international standards. Other initiatives include green building standardization; voluntary action plan alignment work to assess the alignment between international standards

and corresponding national standards; the Pathfinder Initiative of the Joint Regulatory Advisory Committee on Electrical and Electronic Equipment, APEC Mutual Recognition Arrangement on Conformity Assessment of Electrical and Electronic Equipment; and cooperation with specialist regional bodies.

Regulatory convergence and harmonization of policies for food and drugs as well as for medical products are also important. The **Life Sciences Innovation Forum's (LSIF)** Regulatory Convergence on Medical Products initiative under its Regulatory Harmonization Steering Committee targets regulatory convergence of technical requirements for medical products, including supply chain integrity and clinical trials by 2020. This includes plans to launch centers of excellence to build skilled human capacity in regulatory sciences using a train-the-trainer model. The LSIF supported Biomedical Technology Commercialization Training Center also will result in a convergence of best practices for the research and development regulatory environment.

Good regulatory practices include mechanisms for assessing the impact of regulations. In 2012, **Australia, New Zealand, and Mexico** delivered training on regulatory impact analysis in interested APEC economies. There is scope to build on this initiative.

By June 2016, **Australia** will have hosted nine symposia on good policy and regulatory practices to facilitate trade and investment in services sectors in the APEC region. Symposia since 2010 have focused on accounting, legal, financial, higher education, and transport and logistics services. Future workshops will focus on telecommunications and ICT, mining and energy, and the engineering and architecture sectors. The outcomes of the workshops will be summarized in an APEC compendium of good practices.

The internet has been the most effective tool to facilitate good regulatory practices. In the 2013 APEC Joint Ministerial Statement, interested economies were encouraged to explore the possibility of using additional tools to strengthen their implementation of good regulatory practices, including single online locations for regulatory information.

The **Economic Committee (EC)**, under the initiative on 'Good Regulatory Practices: Conducting Public Consultations on Proposed Regulations in the Internet Era', is considering a set of aspirational actions that helps regulators conduct public consultations on proposed regulations in the internet era for endorsement by APEC. These actions are consistent with APEC commitments on transparency and will place APEC at the cutting edge of how governments use information technology when developing regulations. The EC's initiative on building high quality regulatory environments in APEC economies is also a key component of APEC's work to promote free and open trade and investment in the region.

The EC Workshop on International Regulatory Cooperation was the first initiative to have a specific focus on this increasingly important area. The workshop promoted discussion about the choice between different forms of cooperation arrangements drawing on the experiences of different economies. The workshop was based around a draft international regulatory cooperation toolkit being developed by New Zealand as a practical resource for policymakers and regulators.

The EC workshop highlighted the contribution of international regulatory cooperation to building confidence and trust between regulators in developed and developing economies. Cross-border cooperation is increasingly recognized as central to facilitating the flow of

goods, services, and investment between economies, thereby increasing regional connectivity. The EC's initiative supports better-informed choices about international regulatory cooperation. This should contribute to improvements in regulation, supporting the efficient functioning of markets, and reducing behind-the-border barriers to trade and investment.

APEC fora such as the TPTWG Sub-Group for Maritime Security have implemented projects to share international best practices for regulatory coherence. One example, sponsored by the **United States**, is the Maritime Port Security Legislative Workshop project, where policymakers and counsels share and discuss regulatory best practices from around the world toward implementing the International Maritime Organization's International Ship and Port Facility Security Code in a common format, as well as addressing security issues on which the code is silent, such as enforcement.

▪ **Structural Reforms**

Under structural reform, the EC highlighted the APEC Ease of Doing Business Multi-Year project that aims to facilitate tailored capacity building activities to support APEC in achieving its aspirational target of making it 25% cheaper, faster, and easier to do business in APEC economies by 2015. The Ease of Doing Business goals can be attained by harmonizing local policies with existing international agreements. The EC submitted the initiative on Simplified Authentication Process for Production of Public Documents Abroad through the Use of the Hague Apostille Convention. The purpose of this project is to introduce the Hague Apostille Convention and demonstrate how it could facilitate cross-border transactions through simplified authentication processes. APEC Senior Officials have recently tasked the EC to undertake future work on the middle-income trap and to examine ways to build an APEC strategy to tackle the policy challenges it raises.

The EC also outlined the importance of establishing a competitive market, by supporting and facilitating more open, well-functioning, transparent, and competitive markets. One key means of supporting competitive markets is by having an effective and centralized domestic government authority that administers and implements laws and policies that promote competition. To strengthen the capacity of domestic competition authority, the following initiatives could be developed:

- develop a competition checklist for developing economy markets;
- conduct training on competition assessment using the checklist;
- prepare competition assessment and regulatory impact assessment reports; and
- design a framework for competition advocacy and prepare an advocacy plan.

Skills required by the competition authorities will need to be sector specific. For instance, to promote an open and competitive electricity market, the competition authority will need to (i) understand and administer rules and guidelines governing the access of new private investors to the transmission and distribution line infrastructure of the incumbent operator; and (ii) develop an understanding of electricity cost and price modeling, as a prerequisite to resolving access disputes. Hence, capacity building will be a key element in establishing and supporting competitive markets in any economy.

Regulatory Impact Assessment (RIA) is an important tool to encourage regulatory reform, especially when the perspectives of businesses, including international businesses are taken

into consideration. Improving capacity could empower civil servants in implementing RIAs with the purpose of improving the quality of laws and regulations, particularly in a cross-border setting. **Chinese Taipei** is planning to draft and announce an RIA handbook for training of civil servants and for distribution as guidelines for government agencies.

Domestic initiatives submitted by economies also mentioned support to the ASEAN Agreement on Disaster Management and Emergency Response and the initiative to strengthen community resilience to natural disasters in Southeast Asia. **Russia** submitted a cooperation program based on ICT with the goal of analyzing APEC economies' experience and best practices to create a unified concept of providing individualized management of people during disasters.

Maintaining connectivity during disasters is crucial to enabling logistics and humanitarian support. The seven principles of APEC supply chain resilience developed by the APEC **TPTWG** are: critical infrastructure and intermodalism; disaster risk, management and hazard mapping; planning and business continuity management; policy and regulations; regional cooperation; information sharing; and human resource capacity management. In keeping with these principles, the TPTWG, in collaboration with the CTWG and SCCP, has embarked on projects to develop a global trade recovery information communications system. The system, developed in cooperation with the World Customs Organization, will enable the rapid and automated exchange of information necessary for government and private sector decisions on how best to utilize constrained transportation systems during emergencies, based on the APEC Trade Recovery Program. Additionally, the APEC Emergency Response Travel Facilitation Program aims to establish an arrangement in easing mobility of emergency and/or disaster relief personnel and emergency goods and equipment.

C. PEOPLE-TO-PEOPLE CONNECTIVITY

▪ **Business Mobility**

Business and tourism travel facilitation go hand-in-hand: economies commonly issue one type of visa or entry permit for short-term travelers who enter for tourism or business purposes. Hence, most of the visa, immigration clearance, and other travel facilitation initiatives implemented for tourist facilitation also serve to enhance business mobility. However, APEC has a business travel-specific flagship initiative – the APEC Business Travel Card (ABTC) – that is tailored to facilitate business travel within the region. The ABTC facilitates business travel by eliminating visa requirements for full member economies and providing a special lane for expedited immigration clearance. Currently there are 19 full members in the ABTC scheme, with Canada and the United States being transitional members. The **Business Mobility Group (BMG)** oversees the ABTC scheme.

In 2014, the BMG agreed in principle to extend the period of validity of the ABTC from three years to five years. The BMG is also analyzing the end-to-end processes of obtaining an ABTC to identify inefficiencies and make recommendations on managing the scheme's growth. This study is considering issues such as the needs of business travelers, privacy, security, and system and data requirements of each APEC economy. **Thailand** has also contributed to business mobility facilitation by allowing ABTC holders to use its Automated Border Control System from the end of 2014, allowing APEC business travelers to do self-clearance at its borders.

Further work in facilitating business travel will be centered on improving the administrative efficiency of ABTC pre-clearances. Currently, it can take several weeks to months to obtain the card – more work could be done to streamline the process of obtaining an ABTC to reduce the waiting time. Moreover, different economies have different policies in granting the card to their citizens. For example, some economies require membership in business clubs or trade groups to apply for the card, while others do not. Some economies also restrict the type of business travelers who can apply for the card (for example, managers of a certain class of corporations), while others extend it to technical employees and owners of small and medium enterprises. These requirements can raise the cost of obtaining an ABTC and add a layer of administrative red tape to the process while restricting the set of eligible business travelers who can apply for the card.

▪ **Cross-border Education Cooperation**

APEC's education initiatives are underpinned by the 2012 APEC Leaders' Declaration on Promoting Cross-border Education Cooperation. In the declaration, APEC Leaders recognize education as a fundamental component of economic development in the 21st century and an important driver of people-to-people exchanges. APEC Leaders have instructed Ministers and officials to take forward priorities on cross-border student, researcher, and education provider mobility, while taking into consideration the circumstances of individual economies.

APEC economies have been implementing initiatives that take forward the 2012 Leaders' Declaration and are contributing toward the goal of achieving one million intra-APEC student exchanges every year by 2020. For example, the United States and Australia are working on a project to establish baseline data for the one million study abroad goal by 2020 and then to provide technical assistance to developing economies on how to collect and disseminate their data on student mobility.

Scholarship grants for tertiary-level foreign students are regularly given by **Australia; Canada; Hong Kong, China; Japan; Singapore; Chinese Taipei** and the **United States**, while most economies have their own student exchange programs at the secondary school level. **Australia** has the Australia Awards, as well as several bilateral education programs to help students from economies such as Indonesia, Papua New Guinea, the Philippines, and Viet Nam to study in Australian educational institutions. In addition, the New Colombo Plan encourages greater numbers of Australian undergraduate students to study and undertake internships in the Asia-Pacific region. More than 1,300 Australian students will study or undertake internships in Indonesia; Japan; Hong Kong, China; and Singapore under the 2014 pilot phase of the New Colombo Plan. The program will be expanded in 2015 and will support more Australian students to study in more economies, including Brunei Darussalam; China; Korea; Malaysia; Papua New Guinea; the Philippines; Chinese Taipei; Thailand; and Viet Nam.

Canada, Japan, and the **United States** fund several bilateral and multilateral scholarship programs to help international students study in their post-secondary institutions. Through the Fulbright Program, the United States and partner governments support the exchange of more than 2,000 students and scholars within APEC each year. **Singapore** offers APEC scholarships to students from other APEC economies to study public policy or business at the master's degree level at the National University of Singapore, Nanyang Technological University, or Singapore Management University.

Education cooperation initiatives are also being implemented by other APEC economies. **Hong Kong, China** has signed memorandums of understanding for education cooperation with Korea, New Zealand, and Viet Nam. **Chinese Taipei** is formally engaged in bilateral education cooperation initiatives with Australia; Indonesia; Malaysia; the Philippines; Russia; Thailand; and the United States through various memorandums of understanding. **Russia** provides students from APEC economies with free-of-charge places in Russian Universities according to established quotas. In 2014-2015, 2,698 students from APEC economies were admitted into Russian Universities. In addition, Russia continues to extend cooperation with China under the umbrella of the SCO⁵ Network University.

In accordance with the 2012 Leaders' Declaration, **Russia** has further developed initiatives aimed at cross-border education cooperation and facilitation of exchanges in education services within APEC. Initiatives will work toward enhancing the mobility of students, researchers, and education providers, as well as the existing network of bilateral agreements. In addition, Russia is holding the Annual Conferences on Cooperation in Higher Education as a regular platform for education cooperation issues in the Asia-Pacific region. Moreover, Russia elaborated and implemented the International Open Bank of Mathematical Problems project on improving the quality of mathematics instruction and assessment in the APEC region.

China, in 2008, established cooperation with Viet Nam on capacity building for finance officials through collaboration between the Asia-Pacific Finance and Development Center (AFDC), China and the Institute of Financial Training, Viet Nam. As a public institution directly under the administration of the Ministry of Finance, China, the AFDC was set up in 2004 based on the APEC Finance and Development Program, an initiative proposed by China as the host of the APEC process in 2001 for strengthening capacity building of APEC members. China has proposed to upgrade the AFDC to the Asia-Pacific Finance and Development Institute (AFDI). With this new endeavor, the AFDI will provide a cross-border professional master's degree program for young finance officials from APEC member economies in addition to the existing short-term training programs, seminars, forums, and research.

In **Peru**, the National Council for Science and Technology promotes education at the master's degree and PhD levels in cooperation with other economies. Likewise, it sponsors scientific activities, such as international conferences and scientific internships for both professionals and students. A platform for the mobility of academic staff and students, including scholarships, has also been established for economies that form the Pacific Alliance. Also, the publication and availability of information on science and technology in Peru is supported by legislation passed in June 2013 that established the National Digital Repository of Science, Technology, and Innovation. Access to this information is open (without registration) and free of charge.

Within APEC, the **Human Resources Development Working Group (HRDWG)** is implementing the Education Cooperation Project (2013–2016), a self-funded project of **Korea** that aims to identify future directions to improve regional cooperation in education

⁵ Members of the Shanghai Cooperation Organisation (SCO) are China; Kazakhstan; Kyrgyz Republic; Russia; Tajikistan; and Uzbekistan.

and develop educational cooperation strategies and models. In line with the perspectives of promoting people-to-people connectivity, before launching the project, Korea had established a network and learning community consisting of students, scholars, teachers, public officials, entrepreneurs, among others, in the APEC region and continues to implement collaborative activities such as organizing forums and conferences, cooperative projects, educational exchange programs, and e-learning training programs for member economies. **Australia** has been working on a multi-year project focused on developing and providing technical assistance on model diploma supplements that economies, especially developing economies, in the APEC region can adapt and use to facilitate the evaluation of students' diplomas and academic transcripts across borders. In addition, a project by **Chinese Taipei** is underway to facilitate cross-border internships for enhanced mobility of students, researchers, and education providers in the region.

The annual APEC Science Prize for Innovation, Research and Education (ASPIRE) – administered by the Policy Partnership on Science, Technology and Innovation and initiated by the **United States** – recognizes young scientists who have demonstrated cooperation with scientists from other APEC member economies, as well as a commitment to excellence in scientific research.

APEC Study Centers have also been established in various economies in partnership with universities and research institutions to promote research on matters that are of value to APEC, while providing a venue to disseminate knowledge products in the region. The **Life Sciences Innovation Forum (LSIF)**, for instance, aims to establish Centers of Excellence in the region, including research collaboration and capacity building in this field.

On the whole, developed economies have been successful in attracting students to come to their shores to study. This success can be attributed to having internationally renowned institutions of higher learning, as well as the availability of scholarship funding for international students. Developing economies, on the other hand, find it more difficult to provide scholarships for international students.

Student exchanges do not need to be for full-time undergraduate or graduate students in universities; course-based student exchanges should also be encouraged. For example, an anthropology student in Mexico could study field research techniques in Papua New Guinea, or an Asian studies major in the United States could study Chinese history in China. Research partnerships could also be expanded across universities, government agencies, and other institutions in the region. These kinds of exchanges will contribute to people-to-people connectivity in the region while expanding learning opportunities for students and providing developing economies with avenues to attract international students. Accomplishing these goals, however, will require partnerships between higher education institutions and/or education ministries to help ensure that credits earned in one economy are recognized across borders. In the case of research, publications and intellectual property rights on the outcome of research endeavors will also need to be protected across borders. The **HRDWG** can help facilitate information sharing to promote the recognition of academic credits and credentials across economies. Such information-sharing efforts could be modeled in part on the experiences of the ENIC–NARIC⁶ network of the Lisbon Recognition Convention economies

⁶ ENIC: European Network of Information Centres in the European Region; NARIC: National Academic Recognition Information Centres in the European Union.

(Europe and North America region), as well as similar efforts underway among the Tokyo Recognition Convention economies and within the Asia–Europe Meeting (ASEM) forum. Also, ECOTECH can support capacity building for monitoring and cross-economy coordination.

APEC sub-fora, such as the LSIF is in the process of establishing networks of sustainable Centers of Excellence (CoEs) through a hub-and-spoke model with resources provided by interested economies. These CoEs will build capacity for bio-medical innovations throughout the lifecycle of a product. These will result in a network of affiliates around the region with an intra-regional flow of public and private sector scientists, technology managers, regulators, and policy officials. There also are proposals to establish an APEC academic network for health innovation policy research that would bring educators, researchers, and industry experts together on specific research projects, either virtually or in person.

Cultural exchanges are another area where greater APEC cooperation could be achieved. While there are ongoing successful cultural and youth exchange programs within the region – such as **Japan’s** JENESYS 2.0 and KAKEHASHI projects that have contributed to strengthening mutual trust and understanding, and nurturing friendship among the younger generation – these are not coordinated and geographical coverage is inconsistent. A good model for regional cooperation for cultural exchange is the European Union (EU) that has a body coordinating intra-regional cultural exchange (European Cultural Foundation) and another body promoting extra-regional cultural outreach (EU National Institutes for Culture).

ASEM serves as another model for cultural exchange as it brings together 51 economies to discuss economic, political, and socio-cultural relations. Two institutions under ASEM – the Asia-Europe Foundation and the Asia-Europe Museum Network – work toward deepening cultural exchange between Europe and Asia. Currently, 13 APEC economies are part of ASEM.

APEC can learn from the EU’s experience and achievements in promoting cultural exchanges in a regional setting, and how this promotes connectivity as well as tourism and trade. Capacity building activities could be held in partnership with the EU to develop a similar program in APEC taking into consideration APEC’s wider diversity in terms of development and geographic location.

The private sector can also contribute to cultural exchange in the region as cultural promotion can translate to tourist demand and trade opportunities; the private sector can also gain from increased cultural exchanges. APEC, tourism ministries, and UNESCO, for example, can coordinate with private firms in retail, food, transportation, and tourism industries to host and support cultural events in various economies. Private firms in hospitality and cultural industries could also be supported to arrange booths and exhibits in various economies. Cultural exchange programs need not be expensive or grand, but imaginative and creative programs attract the attention of audiences and maximize impact.

▪ **Tourism Facilitation**

Tourism is an important part of APEC economies’ economic growth strategies, and this is reflected in the many tourism facilitation and promotion initiatives that they implement. Practically all APEC economies, in one way or another, promote their tourist sites and develop their tourism industries’ capacity. In order to attract tourist arrivals, APEC

economies are promoting their tourist sites across the region; meanwhile, they are developing their sites and infrastructure to improve internal tourism infrastructure. For example, **Australia's** Tourism 2020 initiative is actively promoting tourism demand in Asia while promoting investment and capacity within its tourism sector, focusing on six priority areas: growing demand from Asia; building competitive digital capability; encouraging investment and implementing regulatory reform agenda; ensuring the tourism transport environment supports growth; increasing the supply of labor, skills, and indigenous participation; and building industry resilience, productivity, and quality.

Canada promotes tourism in key markets such as Australia, China, Japan, Korea, and Mexico, as well as its potential for meetings and conventions to the United States, with Canadian Tourism Commission presence in these economies to build relationships; facilitate business-to-business connections, travel trade and sales; and carry out marketing initiatives. Canada saw a 22% increase in overnight visitors from China in 2013, and increases of 6.3% from Mexico, 3.3% from Korea, and 2.4% from Australia (Canadian Tourism Commission).

In **Peru**, the Ministry of Interior is improving its checkpoints and the qualification of immigration officers to facilitate the flow of passengers at entry and exit points at airport terminals. It is also implementing an action plan for enhancing the protection of tourists along prioritized tourist corridors.

APEC economies rely heavily on their oceans and beaches to attract tourists. The **Chemical Dialogue** and the **Oceans and Fisheries Working Group**, have begun a partnership to promote innovative solutions to the issue of marine debris that APEC has estimated costs APEC economies more than USD 1.2 billion through, in part, a loss of tourist revenue.

After attracting tourists, APEC economies also take steps to facilitate their travel and arrival. In anticipation of increased tourist arrivals, economies such as **Brunei Darussalam** and the **Philippines**, have implemented open sky policies to encourage competition in the airline industry and eventually increase available airline seats.

Meanwhile, the **Tourism Working Group (TWG)** has been promoting air connectivity in the region, holding an International Conference on Air Connectivity in Manila in 2012 and initiating a study on Developing Air Connectivity within the APEC Region that is due to be finalized in December 2015.

Some APEC economies are liberal in waiving visa restrictions. Several economies have also implemented measures to ease visa restrictions on tourists. **Australia; Korea; Mexico; New Zealand; and the Philippines** have implemented various visa facilitation initiatives. Some are temporary visa facilitation initiatives, such as the common visa for Australia and New Zealand for the Cricket World Cup in 2015. On the other hand, some initiatives are more permanent in nature, such as Korea's extension of visa waivers for Russian travelers and visa waivers for transit travelers, while the Philippines has extended visitors' visa-free stay from 21 to 30 days. **Chile** joined the United States visa waiver program in March 2014 that allows citizens of participating economies to travel to the United States without a visa for stays of 90 days or less, when they meet specific requirements. APEC economies already participating in the scheme are Australia; Brunei Darussalam; Japan; Korea; New Zealand; Singapore; and Chinese Taipei. **Chile, Mexico, and Peru** have also reciprocally waived their tourism and business visa requirements as part of their commitments under the Pacific Alliance.

Several APEC economies have initiated programs to facilitate immigration clearance. For example, various forms of automated immigration clearing have been implemented in **Hong Kong, China; Japan; Korea;** and **Mexico**, while **Korea** and **Papua New Guinea** have implemented programs facilitating immigration clearance for cruise travelers.

Hong Kong, China; Canada; Peru; the Philippines; Russia; Thailand; and the **United States** have also implemented pre-processing of arriving tourists and facilitating the arrival of ‘trusted’ travelers. For example, the **United States’** Trusted Traveler Programs facilitate clearance for pre-approved and low-risk passengers, while advanced approval mechanisms are being done in the **Philippines** (Advance Passenger Information System) and **Thailand** (Advance Passenger Processing System). For land-based travel, **Peru** has initiated a sticker-based mechanism to facilitate the movement of vehicles across borders. The **Philippines** is building capacity among immigration and customs personnel at international airports and seaports to prevent human trafficking and smuggling while facilitating the travel of bona fide tourists. **Hong Kong, China** provides an automated immigration clearance service for trusted travelers. These initiatives have the potential to greatly facilitate travel within APEC, and capacity building to spread these practices across the region will be beneficial.

On regional initiatives, the **TWG** is working towards improving passenger flow at airports through traveler-friendly airport systems, and making use of technology for improving tourists’ safety through the smart traveler program. The BIMP–EAGA memorandum of understanding (MOU) on Expansion of Air Linkages, implemented in 2007, aims to harmonize rules and procedures to facilitate transportation of passengers, mail, and cargo; exchange information to strengthen aviation databases for the BIMP–EAGA; and undertake programs and projects that will ensure aviation safety and security.

The relaxation or elimination of visa restrictions, as well as the reduction of visa application fees, are by necessity unilateral actions. Doing so requires the cooperation of agencies behind the border, such as foreign ministries, immigration bureaus, and in some cases legislatures. However, there are still opportunities for regional cooperation in this area. APEC fora can facilitate discussions on visa waiver reciprocity and multilateral visa cost reductions. Visa restrictions are often enforced due to security considerations to prevent terrorism, human trafficking, or illegal immigration. In this regard, APEC can help economies exchange information and policing practices that can mitigate these valid security concerns and avoid the need for blanket visa restrictions on all travelers from other APEC economies.

Much work can also be done in reducing the cost of visa applications. Visa application costs often serve two purposes: (i) to provide revenue for the consulate or ministry that incur costs to evaluate visa applications; and (ii) as a screening mechanism to separate those with the economic means to travel from those who do not. However, a high visa application cost, coupled with uncertainty in obtaining a visa can discourage bona fide tourists from visiting a destination. The **TWG** could study visa application costs collected by various economies and suggest ways to reduce fees and uncertainty costs.

The adaptation by all APEC economies of a code of conduct for travel service providers is another way to reduce the uncertainties of travel and promote consumer protection. In many cases, legal recognition and protection of passengers’ rights already exist in various laws, such as those covering consumer protection, carriage, and advertising. Hence, developing a code of conduct may just be a matter of collecting the provisions protecting passengers’ rights and combining them in an accessible format. APEC can work with the International

Civil Aviation Organization (ICAO) in developing a code of conduct for travel service providers for the region and build on ICAO's leadership on this area.

Examples of consumer protection for travelers already exist within APEC, such as the air passengers' rights published by the **Philippines**⁷ and the **United States**⁸. Outside APEC, a good example is the passengers' rights published by the EU covering all forms of transport⁹. In this regard, APEC through **ECOTECH**, can provide capacity building for policymakers in developing codes of conduct for travel service providers to protect travelers. Consultations with stakeholders such as the APEC Business Advisory Council (ABAC) are also needed to identify policy gaps regarding passenger protection in each economy. Eventually, a harmonious code of conduct can be developed for APEC, similar to that already developed by the EU.

▪ **Professional and Labor Mobility**

Several initiatives facilitating the mobility of professionals and skilled labor have been implemented in APEC economies.

Chinese Taipei, meanwhile, is supporting an initiative to facilitate the mobility of professional engineers and build engineering education capacity in APEC through the **Capacity Building Network** forum in **HRDWG**. Chinese Taipei has called for APEC to take the first step through collective efforts to construct a centralized manpower databank for certified engineers. Thirteen member economies – Australia; Canada; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; New Zealand; the Philippines; Chinese Taipei; Thailand; the United States; and Viet Nam – have endorsed this action. This initiative, called the 'i-cloud manpower,' enables the public and private sectors to solicit technical services, expedite knowledge sharing through technology transfer, stimulate capacity building through workshops and other measures, elevate the mobility of professionals and skilled laborers, and balance the demand-supply chain in technical services by leveraging the manpower surplus and technology advancement in developed economies with skills shortages and experience lag in developing economies. The initiative shifts the focus from pursuing active employment to ensuring quality employment while achieving economic prosperity and sustainable and innovative growth. The Joint Statement of the 2014 Human Resources Development Ministerial Meeting and 2015–2018 Action Plan incorporates this initiative. The Chinese Taipei Monitoring Committee will continue working closely with the HRDWG Capacity Building Network to achieve the common objectives of providing more quality employment, strengthening people-to-people connectivity, and facilitating the mobility of professionals and skilled labor.

The **HRDWG** is spearheading an initiative to benchmark qualifications in the transport and logistics industry, allowing businesses to have more certainty over the skill sets of workers from other economies. The HRDWG is also exploring areas where working on harmonizing standards on technical and vocational education and training (TVET) and career and technical education (CTE) standards in APEC could be applied more consistently, which will contribute to the voluntary recognition of TVET/CTE certificates across borders and enhance labor mobility. ASEAN members are developing a voluntary ASEAN Qualifications

⁷ See details of the Philippines air passenger rights, <http://www.gov.ph/summary-of-the-rights-of-air-passengers/>

⁸ See details of the United States air passenger rights, <http://airconsumer.ost.dot.gov/publications/flyrights.htm>

⁹ See details of the EU air passenger rights, <http://ec.europa.eu/transport/passenger-rights/en/>

Reference Framework that will help economies reference qualifications to facilitate the freer movement of skilled labor within the group. Under the Pacific Alliance, **Chile**, Colombia, **Mexico**, and **Peru** have agreed on a ‘Working Holiday Program’ that allows their citizens to work and live in any of the four economies for up to one year without visas.

The **Australian** tourism industry employs 543,600 people directly. While the Australian Tourism Labour Force Report estimates that the majority of workers are local residents, an estimated 13% of tourism employees are permanent or temporary migrants, international students, or working holidaymakers. These workers fill labor shortages, particularly during seasonal peaks, improve people-to-people links, transfer skills, and support innovation. The **Philippines**, is embarking on a Tourism Occupational Skills Standards initiative to harmonize standards for tourism professionals in the accommodation, travel and tour, and guide services.

Mutual recognition of skills and credentials is an important step in facilitating skilled labor mobility. While many bilateral mutual recognition arrangements (MRAs) are already in place around the APEC region, there is no coordinated and concerted effort to expand and systematize MRAs throughout the region. Labor and skills mobility in APEC would be enhanced if there is a region-wide initiative to have MRAs on certain skills and worker classes. However, to do so will require agreement on what kinds of skilled labor need MRAs – MRAs are meant to facilitate labor mobility so that workers can move to economies with unmet demand for labor. This, in turn, will depend on identifying skills gaps before moving on to address labor market imbalances in the region through consultations with industry groups, ABAC, and ministries to determine the areas for cooperation on skilled labor facilitation. An assessment of international standards and accreditation best practices in various sectors (for example, engineering, information technology, healthcare) will also be needed to provide the groundwork for this endeavor. Likewise, hard data on skills and labor market conditions, requirements, and expectations will be needed to provide policymakers and stakeholders with the information to make learned decisions. Any initiative on facilitating skilled labor mobility should also take into consideration unique national legislation and contexts.

The **Philippines** has implemented measures to make it easier for foreigners to work in the economy, such as providing provisional work permits and facilitating the extension of long-staying visitors. The Philippines has signed MOUs with Canada, Japan, and Chinese Taipei on the accreditation of skilled workers in sectors such as architecture, healthcare, and tourism. The Philippines has also signed MOUs with the Manitoba and Saskatchewan provinces in Canada to facilitate recruitment and mutual recognition of skills, explore opportunities for skills upgrading, protecting workers’ rights, and support the integration of workers into the broader society. Likewise, the Philippines–Japan Economic Partnership Agreement, in addition to promoting investment and trade in goods and services, facilitates the movement of workers between the two economies.

Recognizing the need to have accurate and timely data on skills gaps in the region, the **HRDWG** has worked on a Skills Mapping project that provides information on skills and labor shortages in APEC economies. Started in April 2012, and finalized in mid-2014, this Australian-led project provides a snapshot of current and emerging labor market imbalances

in the region and recommends approaches to improve the relevant evidentiary base.¹⁰ An earlier Philippines-led Effective Labor Market Signaling project aimed to develop an improved knowledge of employers' human resource requirements in a form that would be useful for education and training program planners, given the identified core labor market signals generated from business sectors. However, labor market imbalances are a moving target – the regional labor market situation changes quickly every year, and the skills needed change with changing markets. Monitoring of labor market trends needs to be done on a regular basis in order to provide accurate and timely data to policymakers and stakeholders.

The HRDWG could be instrumental in establishing an APEC-wide monitoring mechanism of skills gaps and labor imbalances in the region, which can help direct policies for labor mobility and skills development, informing firms and workers in making human resource decisions. This mechanism could be developed in partnership with the International Labour Organization (ILO), the International Organization for Migration (IOM), and the Organisation for Economic Co-operation and Development (OECD) that already have regular survey operations in APEC economies that could be further developed with individual member economies to provide a richer APEC-regional picture. Partnerships could also be established with statistical offices and industry groups in APEC economies to help gather labor market and firm-level data.

The LSIF and the Health Working Group are in the process of examining ways to improve the allocation of professionals in the health and allied industries to address the current imbalance in and between APEC economies. Collaboration with the Business Mobility Group and HRDWG is planned for 2015.

The ABTC, one of APEC's most prominent achievements, facilitates travel across borders of a bona-fide business person who may need to travel frequently on short-term visits in the APEC region to fulfill business commitments. The ABTC allows visa-free entry for 19 economies and expedited immigration clearance for all 21 economies. However, it is often targeted at business managers and entrepreneurs (some economies require membership in a business group to obtain the card), and is not commonly available for technical or skilled workers. ABAC has suggested an initiative to expand the ABTC to cover skilled and technical workers as well. A key motivation behind this initiative is the need to quickly mobilize skilled and technical workers across the region. As production processes and technologies become more complicated, and as supply chains become more spread out throughout the region, firms are finding it necessary to move technical expertise across borders.

APEC could also consider the feasibility of ABAC's proposed 'Earn, Learn, and Return' framework in designing and implementing future initiatives on professional mobility. The framework addresses labor imbalances in the region and provides a holistic view of professional mobility, covering aspects from technical standards and recruitment to working visa facilitation and learning opportunities for migrant workers. Many of the initiatives being implemented by APEC mentioned above would contribute toward the objectives of the 'Earn, Learn, and Return' framework. APEC economies could consider initiatives on providing learning opportunities for migrant workers and improving their access to various services (for example, insurance, airfare, and financial services), taking into consideration relevant policies and the financial and social situation of each economy.

¹⁰ Further information on the Skills Mapping project can be found at <http://skillsmap.apec.org/>.

ANNEX B: Aspirational Targets for the Individual Pillars

Objectives	Policy Actions/Aims	Data sources	Timeframe
Physical Connectivity			
Sub-pillar 1: Public-private Partnership			
Promote public-private partnership (PPP)	<ol style="list-style-type: none"> 1. Support the establishment of PPP centers in APEC economies, where appropriate; by taking into account the outcome of the reviews of the pilot PPP center. 2. Prioritize infrastructure financing through PPP and other means to attract capital into infrastructure markets. 	World Bank Public-Private Infrastructure Advisory Facility Database	
Sub-pillar 2: Quality of Infrastructure			
Increase the quality of infrastructure in the Asia-Pacific region	In the case of competitive bidding for infrastructure projects, increase the number of APEC economies that adopt a comprehensive assessment method in proposal evaluation of infrastructure projects: the method of considering not only the purchase price, but also key quality elements such as lifecycle cost including performance and durability, environmental impacts, safety and maintainability.	Data/reports by member economies	
Sub-pillar 3: Other Important Principles of Infrastructure Development			
(1) Enhance people-centered investment, and (2) good practices and principles	In the case of planning and implementing investment projects, take due account of: (1) people-centered investment which emphasizes the importance of having as many local people as possible enjoy the economic benefit through creating local employment for example, enhancing social resilience to economic fluctuations, climate change and natural disasters, and advancing capacity building among local people; and (2) good practices and principles such as on environmental and social considerations, transparency, sustainability, financial soundness and accountability.		

Objectives	Policy Actions/Aims	Data sources	Timeframe
Sub-pillar 4: Transportation			
Increase the quality of APEC transport networks	Raise quality of APEC transportation networks to average OECD figures, based on the World Economic Forum's Enabling Trade Index.	World Economic Forum's Enabling Trade Index: Quality of Air Transport Infrastructure; Quality of Railroad Infrastructure; Quality of Port Infrastructure; and Quality of Roads measures	
Sub-pillar 5: ICT Infrastructure Development			
Increase broadband internet access throughout APEC	Achieve universal access to broadband.	International Telecommunication Union: internet subscriptions, broadband Data/reports by member economies	2015
	Collaborate to increase access to next generation high-speed broadband to world leading standard using average OECD figures as a benchmark.	Data/reports by member economies	2020
Sub-pillar 6: Energy Infrastructure Development			
Ensure quality electricity supply for all APEC members	Raise quality of electricity supply to world leading standard using average OECD figures as a benchmark.	World Economic Forum's Energy Access and Security Basket: Quality of Electricity Supply Indicators	
Institutional Connectivity			
Sub-pillar 1: Customs and Border Administration			
To modernize customs and border agency	<ol style="list-style-type: none"> 1. Application of Single Window (SW) system <ul style="list-style-type: none"> - 2013: 14 economies have introduced SW system. - 2020: 21 economies to introduce SW system. 2. To increase the number of authorized economic operators (AEO) and mutual recognition of AEOs. 3. Improve customs and (electronic) SW system toward interconnectedness within and between domestic SW. 4. Encourage the development of 	Self-assessment or information from Sub-Committee on Customs Procedures	2020

Objectives	Policy Actions/Aims	Data sources	Timeframe
	automated data exchange system(s) to exchange preliminary information on the movement of shipments between border customs authorities of APEC economies.		
Sub-pillar 2: Supply Chain Performance			
Improve supply chain performance	<ol style="list-style-type: none"> 1. Advance logistics and transport facilitation. 2. Improve supply chain performance for time, cost and uncertainty. 3. Ensure performance and provide security to the supply chain, promoting the mutual recognition agreements in the framework of the AEOs. 	Data from Logistics Performance Index	2025
Sub-pillar 3: Regulatory Coherence and Cooperation and Good Regulatory Practices			
Enable a whole-of-government approach in the development of regulations, including coordination across regulatory, standards, and trade agencies	To have at least one economy to participate in the self-assessment of APEC-OECD Integrated Checklist on Regulatory Reform each year.	APEC–OECD Integrated Checklist on Regulatory Reform	2025
Sub-pillar 4: Structural Reforms			
Fostering transparency, safety, competition and better functioning markets (including e-commerce) in the Asia-Pacific	<ol style="list-style-type: none"> 1. Improve regulatory business environment to be at par with OECD performance. 2. Expand the application of safe and trusted ICT and e-commerce environment. 	Data from Doing Business Index	2025
Sub-pillar 5: Trade Facilitation			
Enhance trade facilitation through removal of technical barriers to trade	<ol style="list-style-type: none"> 1. Formulate a comprehensive regional policy and framework for harmonization of standards and conformity assessment procedures. 2. Implementation of the alignment of national standards to international standards and strengthening conformity assessment capability. 	Data from SCSC	2020
People-to-people Connectivity			
Sub-pillar 1: Business Travel Facilitation			
Meet preclearance processing time as established in the	Per the principles set forth in the ABTC Operating Framework, economies should make their best	Data provided by BMG	2017

Objectives	Policy Actions/Aims	Data sources	Timeframe
ABTC Operating Framework	endeavor to complete preclearance within two weeks of the request and, in cases where further information is required, within three weeks of the request.		
Sub-pillar 2: Cross-border Education Exchange			
Increase the number of intra-APEC international students	1. Sustained 1,000,000 intra-APEC students. 2. Increase number of student exchanges to developing economies.	UNESCO bilateral international students data Data provided by HRDWG and ASCC	2020
Cultural exchange events by each economy in every other economy	At least one cultural awareness event by each APEC economy in every other APEC economy per year.	Data provided by TWG and ASCC	2017
Advance work on cross-border science, technology, and innovation exchange	At least one APEC-wide knowledge sharing and dissemination event conducted per year.	Data provided by ASCC	2017
Sub-pillar 3: Tourism Facilitation			
Higher number of total tourist arrivals in APEC	Increase the number of total tourist arrivals in APEC to 800 million.	Data from UNWTO, WTTC, and WDI Reports from TWG	2025
Reduce travelers' costs and uncertainties relating to tourism	Establish an APEC-wide Code of Conduct for Travel Providers.	Reports from TWG	2025
Sub-pillar 4: Professional and Labor Mobility			
Establish an APEC-wide mechanism to monitor and respond to regional skills gaps	Establish a timely and accurate labor market and skills monitoring mechanism appropriate for APEC members, taking into consideration national contexts and legislation.	Reports from HRDWG and BMG	2020
Increase number of APEC-wide mutual recognition agreements for skilled and technical workers, where appropriate	Increase, where possible, the number of bilateral or multilateral MRAs within APEC relative to 2014 figures in appropriate sectors.	Data from HRDWG	2025

ABTC = APEC Business Travel Card; ASCC = APEC Study Centers Consortium; BMG = Business Mobility Group; HRDWG = Human Resources Development Working Group; MRA = Mutual Recognition Arrangements; OECD = Organisation for Economic Co-operation and Development; SCSC = Sub-Committee on Standards and Conformance; TWG = Tourism Working Group; UNESCO = United Nations Educational, Scientific and Cultural Organization; UNWTO = World Tourism Organization; WDI = World Development Indicators; WTTC = World Travel and Tourism Council.

Source: Authors.

ANNEX C: Infrastructure Financing, Quality, and Other Important Principles of Infrastructure Development

▪ Infrastructure Financing through Public–private Partnerships

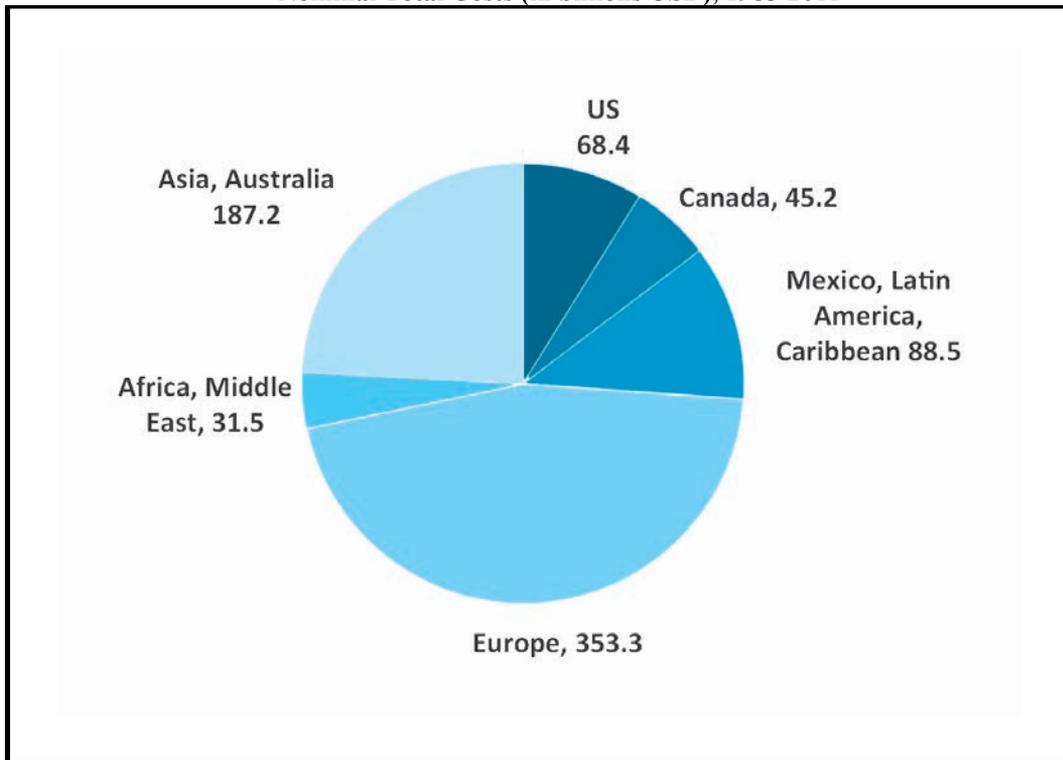
Infrastructure investment has traditionally been under the purview of governments that are best situated to undertake initiatives that private sector investors would view as being public goods. However, governments alone cannot meet the investment requirements for infrastructure. ADB estimates that developing Asian economies need to invest USD 8 trillion in infrastructure over 2010–2020¹¹, but this comes at a time when domestic budgets are increasingly constrained in the aftermath of the global financial crisis. Thus, governments have sought a way to bring private sector financing into infrastructure investment through public–private partnerships (PPP).

APEC members have prioritized PPP development as a way to attract needed capital into infrastructure markets through initiatives such as the current APEC Multi-Year Plan on Infrastructure Development and Investment. According to Istrate and Puentes (2011:1), PPP projects represent ‘contractual agreements between governments at all levels and the private sector to design, build, operate, maintain and/or finance infrastructure... if designed and implemented correctly, do have the potential to improve on infrastructure delivery.’ Their analysis show that PPP projects had a 1.1% net cost overrun in Australia in the period 2000–2010, compared with 15% for traditional procurement practices. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) backs these claims, stating that PPP projects lead to ‘increased efficiency in project delivery, operation and management.’

Despite these advantages, PPP arrangements also face challenges in proper execution, with different requirements across localities; public entities that lack training and expertise, and adverse regulatory environments stifling their implementation across the Asia-Pacific region. According to Istrate and Puentes (2011) calculations (Figure A.C.1), infrastructure PPP accounted for around USD 389 billion in the Asia-Pacific region over the 25-year period ending in 2011, with Asia’s figure amounting to USD 187.2 billion. PPP has considerable scope for improvement if it is to play a major role in contributing to the region’s future infrastructure development.

¹¹ “Infrastructure for Supporting Inclusive Growth and Poverty Reduction in Asia”, Asian Development Bank, 2012.

**Figure A.C.1. Public-private Partnerships (PPP) Worldwide,
Nominal Total Costs (in billions USD), 1985-2011**



Note: Includes funded road, rail, buildings, and water projects through October 2011 in nominal dollars converted into US dollars at the time of financial close. Excludes US design-build projects.

Source: PWF (2011) in Istrate and Puentes (2011).

Constrained budgets cannot be the only deciding factor in whether to pursue PPP funding for a potential infrastructure project. Despite an obvious opportunity to expand private sector involvement, other areas need to be considered before deciding to proceed with a PPP-based project instead of using traditional financing. According to UNESCAP, the private sector often faces higher borrowing costs than governments, and transaction costs – such as paying for staff, writing contracts, and advisory fees for banks, lawyers, and consultants – can be as high as 10% of the overall project cost, adding substantially to the total project cost.

Additionally, PPP projects should not be thought of as risk-free for governments simply because they do not use tax revenue or sovereign borrowing for financing. The OECD recommends that political leaders engage in consultations with stakeholders and end-users to define and monitor project quality and test for key risk factors. They recommend examining a variety of risks before deciding to proceed with a PPP-based project that include, among others:

- What are the comparative costs of finance, construction, and operation, as calculated over the whole lifetime of the project, in each alternative mode of procurement?
- Can the right types of risk be transferred to the private partner to ensure value for money?
- Does the project involve any transfer of risks onto other stakeholders, including workers and local communities?
- Do potential private sector partners have a good track record of good service delivery, responsible business conduct and PPP experience?

- Is there sufficient market interest in the project to generate a robust competition that will ensure a value for money outcome?
- What are the risks of project failure associated with similar PPPs? What are the costs to the public authority associated with such failures?
- Can the risks, cost, and quality trade-offs be quantified and managed by the public sector?

PPP-based investment schemes are not simply to be used as a means to raise infrastructure investment and policymakers need to take into consideration interest costs, transaction costs, and risk. Istrate and Puentes (2011) accurately summarize when and how to use a PPP-based investment scheme, saying that ‘PPP should be a tool for better risk and cost allocation, and not merely a way to fill in budget gaps.’

▪ **Quality of Infrastructure**

Investments in infrastructure are rapidly growing in the APEC region. While infrastructure’s sustainability is important for economic growth, developing economies with financial difficulties tend to pay attention to initial costs at procurement. As a result, they often end up introducing infrastructure with higher lifecycle cost, short-term durability, and/or high environmental burdens.

Against this backdrop, in the APEC Multi-Year Plan on Infrastructure Development and Investment, APEC Leaders agreed in Bali in 2013 on the importance of comprehensive and holistic considerations, including the following principles:

- to secure long-lasting asset value and stability of long-term cash flow of infrastructure projects; and
- to improve bidding process of infrastructure projects that incorporate not only a procurement price but also key elements such as lifecycle cost including performance and durability, environmental impacts, safety including resilience to natural disasters, and maintainability.

▪ **Other Important Principles of Infrastructure Development**

In addition to the cross-sectoral issues mentioned above, it is important to recognize a people-centered investment which emphasizes the importance of having as many local people as possible enjoy the economic benefit through creating local employment for example, enhancing social resilience to economic fluctuations, climate change and natural disasters, and advancing capacity building among local people, so that economic development will be sustainable.

Moreover, good practices and principles such as on environmental and social considerations, transparency, sustainability, financial soundness and accountability to should be taken into account in planning and implementation of projects.

ANNEX D: Examples of Pillar-Specific Activities Undertaken By Other International Organizations and Regional Groupings

Examples of initiatives enhancing physical connectivity by other international organizations and regional groupings are provided in Table A.D.1.

Table A.D.1. Initiatives in Physical Connectivity by Other International Organizations and Regional Groupings (Projects and Focus Area)

ADB	<p><u>Greater Mekong Subregion Economic Cooperation Program Strategic Framework</u>: A flexible, results-oriented project-delivering vehicle for promoting regional cooperation and contributing to economic growth and poverty reduction as well as meeting the needs of regional public goods.</p> <p><u>Regional Corridor Development</u>: Efforts to create economic links between urban centers and the transportation connectivity between them that encompass actual or potential areas of economic growth.</p> <p>(This initiative also addresses institutional connectivity as well via customs and transport cooperation.)</p>
ASEAN	<p><u>Master Plan on ASEAN Connectivity</u>: Upgrade existing infrastructure, construct new infrastructure and logistics facilities, harmonize regulatory framework, and nurture a culture of innovation.</p> <p><u>ASEAN Infrastructure Fund</u>: A pooled fund that provides effective infrastructure project lending at the economy and subregional levels.</p>
ERIA	Supports physical connectivity through research projects such as the Comprehensive Asia Development Plan, PPP Guideline, and ASEAN Strategic Transport Plan.
IDB	Infrastructure lending program that averages over USD 150 million annually in the APEC region. The IDB also supports the process of physical integration in the Initiative of Integration of the Regional Structure in South America.
PECC	PECC has had multiple second-track discussions on the three elements of APEC’s Connectivity Blueprint. For instance, in 2006, PECC developed guidelines for Effective Public–Private Partnerships. The guidelines were the result of extensive consultation with governments, private operators, and international financial institutions. In 2007, PECC and the APEC Business Advisory Council undertook a study of labor mobility in the Asia-Pacific region.
Others	<p><u>World Bank</u>: Support physical connectivity through considerable lending and risk guarantee projects to, for example, road and rail infrastructure projects.</p> <p><u>G20</u>: Collaboration among the multilateral development banks led to a jointly agreed Infrastructure Action Plan setting out initiatives aimed at: (i)</p>

unlocking the infrastructure project pipeline, notably to allow for increased private sector participation and financing; and (ii) improving infrastructure spending efficiency.

ADB = Asian Development Bank; ASEAN = Association of Southeast Asian Nations; ERIA = Economic Research Institute for ASEAN and East Asia; IDB = Inter-American Development Bank; PECC = Pacific Economic Cooperation Council; PPP = Public-private Partnership.

Source: Authors and Submission of ‘Infrastructure Action Plan: 2012 Follow-up Report’ to G20 by the MDB Working Group on Infrastructure.

Under regulatory reform, the Organisation for Economic Co-operation and Development (OECD) provided the example of a regulatory checklist that has been adopted to become the APEC–OECD Integrated Checklist on Regulatory Reform. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) provided regional knowledge-sharing and capacity building platforms such as the United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT) and the annual Asia-Pacific Trade Facilitation Forum (APTFF).

UNESCAP also produces knowledge products that can help APEC implement the Blueprint, such as implementation toolkits, the bilateral cost database, the Business Process Analysis Guide to Simplify Trade Procedures, and the APTFF Survey on Trade Facilitation and Paperless Trade. The World Bank also publishes knowledge products, diagnostic tools, and implementation toolkits such as the Customs Modernization Handbook, Logistics Performance Index report, the Trade and Transport Facilitation guide and the Corridor Management Toolkit.

Examples of initiatives in Institutional Connectivity by other international organizations and regional groupings are provided in Table A.D.2.

Table A.D.2. Initiatives in Institutional Connectivity by Other International Organizations and Regional Groupings (Projects and Focus Area)

ASEAN	<u>Master Plan on ASEAN Connectivity</u> : Trade liberalization and facilitation, investment and services liberalization and facilitation, mutual recognition agreements/arrangements, regional transport agreements, cross-border procedures, and capacity building programs.
ERIA	Together with the ASEAN Secretariat, ERIA supports regional integration through research projects such as the development of the AEC Scorecard, which monitors the progress in all pillars of the AEC including trade liberalization and facilitation, standards and regulations, and liberalization of services and investment.
EEC	Within its regulatory powers, EEC is aiming at: (1) strengthening connectivity between its member states and with neighboring trading partners in the following areas: customs regulations, TBT and SPS measures, transport and customs infrastructure; (2) adopting common rules governing energy market, industrial and financial markets in the EAEU; (3) forming common market of services in the EAEU; (4) building an optimized system of cooperation between EAEU and its trading partners; and (5) adopting in 2016 a new edition of the Union's Customs Code that will implement many

	provisions of the WTO Agreement on Trade Facilitation.
IDB	<u>Sector Strategy to Support Competitive Global and Regional Integrations:</u> Enhance investments in software; ensure regional connectivity of national investments in infrastructure; promote regional cooperation and the generation of regional public goods.
OECD	<u>APEC–OECD Regulatory Framework:</u> Implement principles related to public consultation from the 2005 APEC-OECD Integrated Checklist on Regulatory Reform and implement APEC transparency standards. <u>Trade Facilitation Indicators:</u> These indicators correspond to the main policy areas under negotiation at the WTO and aim to estimate the impact of addressing specific hurdles in the trade and border procedures of a given economy.
Pacific Alliance	The Pacific Alliance aspires to improve existing trade agreements with the goal of strengthening the links of production and investment networks among its member economies, through an additional protocol to the Framework Agreement.
UNCITRAL	This Commission formulates and regulates international trade in cooperation with the WTO through their work in the field of electronic transferable records (electronic bills of lading, electronic warehouse receipts, etc.). This work aims to increase connectivity and foster paperless trade.
UNESCAP	<u>Trade Facilitation Framework:</u> Revise trade and customs laws and regulations; simplify and standardize export-import documentation; implement effective customs enforcement; information dissemination; apply ICT; trade finance infrastructure development. <u>UNNEXT:</u> United Nations Network of Experts for Paperless Trade in Asia and the Pacific <u>Business Process Analysis Guide to Simplify Trade Procedures</u>
World Bank	Aims to reduce costs of trading throughout the supply chain through: (i) enhancing transport and logistics services; (ii) improving border management and enhancing customs capacity; and (iii) supporting efficient movement of goods through trade corridors. The World Bank also publishes knowledge products, diagnostic tools, and implementation toolkits.

ASEAN = Association of Southeast Asian Nations; AEC = ASEAN Economic Community; ERIA = Economic Research Institute for ASEAN and East Asia; EAEU = Eurasian Economic Union; EEC = Eurasian Economic Commission; IDB = Inter-American Development Bank; OECD = Organisation for Economic Co-operation and Development; SPS = Sanitary and Phytosanitary Measures; TBT = Technical Barriers to Trade; UNESCAP = United Nations Economic and Social Commission for Asia and the Pacific; UNCITRAL = United Nations Commission on International Trade Law; WTO = World Trade Organization.

Source: Authors.

For people-to-people connectivity, ASEAN has been focusing on community building efforts and relaxation of visa requirements and development of mutual recognition arrangements (MRAs). The Forum for East Asia-Latin America Cooperation (FEALAC) aims to promote cooperation, better understanding, and political and economic dialogue between East Asia and Latin America. Thirty-six economies currently participate in FEALAC, 15 of which are also APEC members. Examples of initiatives in people-to-people connectivity by other international organizations and regional groupings are provided in Table A.D.3.

Table A.D.3. Initiatives in People-to-people Connectivity by Other International Organizations and Regional Groupings (Projects and Focus Area)

<p>ASEAN</p>	<p><u>Master Plan on ASEAN Connectivity</u>: Promote a deeper intra-ASEAN social and cultural understanding, and encourage greater intra-ASEAN people mobility.</p> <p><u>ASEAN University Network</u>: Promote collaborative studies and research programs among ASEAN scholars and scientists.</p> <p><u>ASEAN Tourism Strategic Plan 2011-2015</u>: Develop a set of ASEAN tourism standards with a certification process; implement the MRA on ASEAN Tourism Professionals; and advocate for a single visa for the ASEAN region.</p> <p><u>ASEAN Qualifications Reference Framework</u>: Set up to: (i) enhance the quality of education in ASEAN; (ii) support the mobility of students and other educational and external quality assurance agencies; and (iii) benchmark higher educational institutions in each economy and assist member economies to attain similar standards across the region.</p> <p><u>AEC Mode 4 on the Movement of Natural Persons</u>: Help facilitate the movement of persons within ASEAN. ASEAN has also signed MRAs to further facilitate the movement of skilled workers in specific sectors.</p> <p><u>ASEAN Constructors Federation (ACF)</u>: An alliance of the constructors associations of ASEAN with Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam as members. These economies have established the ACF Construction Standards Trade Skills Training Program that harmonize qualification standards, competency standards, training standards, and assessment/certification arrangements of the member economies.</p>
<p>ACD</p>	<p><u>Roadmap for Tourism Cooperation</u>: Endorsed by the 5th ACD Ministers' Meeting, the framework seeks to lead cooperation in areas such as tourism for poverty alleviation, human resource development, and SME development.</p>
<p>ASEM</p>	<p>In 2013, ASEM Ministers discussed:</p> <ol style="list-style-type: none"> 1. Endorsing the ASEM Recognition Bridging Declaration that aims to combine the Lisbon and Tokyo Conventions. 2. Establishing information centers on education systems and on recognition procedures in all ASEM members.

	<ol style="list-style-type: none"> 3. Launching an initiative to establish a cross-border quality assurance network in higher education. 4. Emphasizing the need to make academic credit systems more transparent to facilitate recognition and to stimulate cross-border mobility. 5. Considering possibilities to develop cross-referencing mechanisms related to regional qualifications frameworks.
EAS	The EAS 2011–2015 Action Plan includes a regional quality assurance framework for technical and vocational education; increased cooperation related to national qualification frameworks to facilitate mobility; and examining options for regional credit transfer.
ERIA	Supports realizing an ASEAN Social-Cultural Community (ASCC) through following up on the ASCC Blueprint.
FEALAC	Aims to promote cooperation, better understanding, and political and economic dialogue between East Asia and Latin America.
Pacific Alliance	<u>Working Holiday Program</u> : The program eases visa restrictions on travelers from member economies by allowing them to stay and work in any economy for up to one year.
UNESCO	<p><u>Lisbon Recognition Convention (LRC): Europe and North America region (1997)</u>: Parties to the LRC participate in the ENIC–NARIC network that was established to facilitate information exchange among interested organizations and individuals on international academic and professional mobility, and on procedures for the recognition of foreign credentials. Participation in the network involves maintaining a website with information on an economy’s education system, as well as policies and processes related to recognition. Each economy’s website can also be accessed through the ENIC–NARIC web portal.</p> <p><u>Tokyo Recognition Convention: Asia-Pacific region (2011)</u>: The Tokyo Convention updated the 1983 Bangkok Recognition Convention. It is worth noting that many of the Tokyo Convention’s objectives overlap with APEC mobility goals. A meeting of Tokyo signatories in October 2012 focused on developing a toolkit for the recognition of foreign qualifications.</p> <p><u>Proposed Global Recognition Convention</u>: UNESCO completed a study in 2013 on the technical and legal aspects related to the desirability and feasibility of a possible Global Recognition Convention. A report exploring further the scope and implementation modalities of a global convention, as well as the articulation between the global convention and the regional ones, will be submitted to the General Conference at its 38th session in 2015 for review and decision on further action.</p>
Others	<u>APEC Study Centers Consortium</u> : A network connecting universities and research institutions in APEC member economies that undertake joint research, disseminate information, and facilitate discussion on APEC-related

issues.

Association of Pacific Rim Universities: Help Pacific Rim universities become more effective contributors to the development of an increasingly-integrated Pacific Rim community.

ASEAN = Association of Southeast Asian Nations; AEC = ASEAN Economic Community; ACD = Asia Cooperation Dialogue; ASEM = Asia–Europe Meeting; EAS = East Asia Summit; ENIC–NARIC = European Network of Information Centres in the European Region-National Academic Recognition Information Centres in the European Union; ERIA = Economic Research Institute for ASEAN and East Asia; FEALAC = Forum for East Asia-Latin America Cooperation; MRA = Mutual Recognition Arrangements; UNESCO = United Nations Educational, Scientific and Cultural Organization.

Source: Authors.

GLOSSARY AND ABBREVIATIONS

Abbreviation	Meaning
3M	Mutual assistance, Mutual recognition, and Mutual sharing
A2C2	Alliance for Supply Chain Connectivity
ABAC	APEC Business Advisory Council
ABMI	Asian Bond Markets Initiative
ABTC	APEC Business Travel Card
ACD	Asia Cooperation Dialogue
ACTWG	Agricultural Technical Cooperation Working Group
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AEO	Authorized Economic Operator
AFDC	Asia-Pacific Finance and Development Center
AFDI	Asia-Pacific Finance and Development Institute
AICOE	Asia Infrastructure Centre of Excellence
APEC	Asia-Pacific Economic Cooperation
APERC	Asia Pacific Energy Research Centre
APII	Asia-Pacific Information Infrastructure
ARFP	Asia Region Funds Passport
ASCC	APEC Study Centers Consortium
ASCC	ASEAN Socio-Cultural Community
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
ASPIRE	APEC Science Prize for Innovation, Research, and Education
BIMP-EAGA	Brunei Darussalam, Indonesia, Malaysia, Philippines–East ASEAN Growth Area
BMC	Budget and Management Committee
BMG	Business Mobility Group
C2B	Customs-to-Business partnership
C2C	Customs-to-Customs connectivity
CAP	Collective Action Plan
CBN	Capacity Building Network
CD	Chemical Dialogue
CTE	Career and Technical Education
CTI	Committee on Trade and Investment
CTWG	Counter-Terrorism Working Group
EAEU	Eurasian Economic Union
EAS	East Asia Summit
EC	Economic Committee
ECOTECH	Economic and Technical Cooperation
ECSG	Electronic Commerce Steering Group
EEC	Eurasian Economic Commission
ENIC–NARIC	European Network of Information Centres in the European Region–National Academic Recognition Information Centres in the European Union
EPWG	Emergency Preparedness Working Group

Abbreviation	Meaning
ERIA	Economic Research Institute for ASEAN and East Asia
EU	European Union
EWG	Energy Working Group
FEALAC	Forum for East Asia-Latin America Cooperation
FMP	Finance Ministers' Process
FSCF	Food Safety Cooperation Forum
GDS	Global Data Standards
GDP	Gross Domestic Product
GMS	Greater Mekong Subregion
GNC	Globally Networked Customs
GOS	Group on Services
HRDWG	Human Resources Development Working Group
HWG	Health Working Group
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
IEA	International Energy Agency
IEG	Investment Experts' Group
IFAP	Investment Facilitation Action Plan
ILO	International Labour Organization
IOM	International Organization for Migration
ITFS	Intermodal Transshipment Facilitation Scheme (Hong Kong)
ITU	International Telecommunication Union
LNG	Liquefied Natural Gas
LSCI	Liner Shipping Connectivity Index
LSIF	Life Sciences Innovation Forum
MOU	Memorandum of Understanding
MRA	Mutual Recognition Arrangement
MYPIDI	Multi-Year Plan on Infrastructure Development and Investment
NTIA	National Telecommunications and Information Administration (U.S.)
OECD	Organisation for Economic Co-operation and Development
PECC	Pacific Economic Cooperation Council
PPP	Public-private Partnership
PPWE	Policy Partnership on Women and the Economy
PSU	Policy Support Unit
PvP	Payment versus Payment
RIA	Regulatory Impact Assessment
RMIT	Royal Melbourne Institute of Technology
SCCP	Sub-Committee on Customs Procedures
SCE	SOM Steering Committee on ECOTECH
SCFAP	Supply Chain Connectivity Framework Action Plan
SCSC	Sub-Committee on Standards and Conformance
SICEX	Single Window system (Chile)
SMEWG	Small and Medium Enterprises Working Group
SOM	Senior Officials' Meeting
SPS	Sanitary and Phytosanitary Measures

Abbreviation	Meaning
STAR	Services Trade Access Requirements
SW	Single Window
TBT	Technical Barriers to Trade
TEL	Telecommunications and Information Working Group
TEU	Twenty-foot Equivalent Unit
TFA	Trade Facilitation Agreement
TFAP	Trade Facilitation Action Plan
TPTWG	Transportation Working Group
TRS	Time Release Study
TVET	Technical and Vocational Education and Training
TWG	Tourism Working Group
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	World Tourism Organization
VUCE	Single Window for Foreign Trade (Peru)
WCO	World Customs Organization
WDI	World Development Indicators
WEF	World Economic Forum
WTO	World Trade Organization
WTTC	World Travel and Tourism Council

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