The development of mobile internet and financial technologies (Fintech) has significantly altered people’s purchasing behavior and created many opportunities for cross-border e-commerce and mobile commerce (M-Commerce). Most SMEs utilize M-Commerce by linking the virtual with the physical, a method known as the online-to-offline model (O2O), in which businesses attempt to increase physical store (offline) revenues through virtual internet (online) advertisement. As a new trend that leads to Web 4.0, the O2O model is giving birth to a new wave of innovative services. Mobile payment, for example, is one of them as a direct result of the prevalence of mobile devices and high internet coverage, making it possible for consumers to pay for virtual and physical goods and services via mobile devices and making fintech one of the fastest growing industries in the world.

However, mobile payment is not without its risks. First and foremost is digital security. A 2013 report by the National Small Business Association showed that 44% SMEs were once victims of cyber-attacks and each attack would incur a loss of about US$9,000. SMEs are attackers’ sweet spots; not only because they are more vulnerable but also the information pertaining to their clients, finances and IPR database is highly valuable. Building the digital resilience of SMEs, therefore, is an issue that needs to be addressed.

This issue of APEC SME Monitor looks at how SMEs use the O2O model to enter the global marketplace and take advantage of the blue sea of cross-border trade. The exploration is further supported by expert suggestions on how to reinforce information security and help SMEs become more digitally resilient in the face of heightened internet security threats.

In the "APEC News" section, a complete coverage is offered on Chinese Taipei delegation participating in the 22nd Small & Medium Size Enterprises Ministerial Meeting and the 41st Small and Medium Size Enterprises Working Group Meeting in Iloilo in the Philippines with more than a hundred representatives, consisting of delegates, deputy ministers, and international business leaders from 20 APEC member economies. During the events, representatives from Chinese Taipei were able to share their experience in promoting the development of SMEs as well as to give presentations on the progress made this year, which was honorably recognized in the APEC SME Ministerial Statement.

Johnny Yeh
Executive Director
APEC SME Crisis Management Center
O2O: A Solution for the Retail Industry

In November, department store operators in Chinese Taipei are fighting for customers who pursue different shopping experience by holding year-end anniversary sales. This year, their battlefield has expanded because of the rapid development of the O2O model, which extends business from online to offline and the other way around. As such, almost all consumer behaviors can be observed in the fast growing market. The O2O model that was proposed many years ago has proved that it is no longer just a trend.

**By launching online membership cards, Breeze Center collects customers' data to analyze their behavioral patterns.**

With the highest concentration of shopping malls, Xinyi commercial district, the heart of Taipei, began to see an intense battle for customers among department stores that held their anniversary sales in October. The operators estimate that the revenue of each department store is approximately NT$100 billion (US$ 3 billion). This year, Breeze Center has entered the fray and launched a membership card app, focusing on the experience of its core members. The department store targets high-end customers to provide upgraded and refined services. In addition to allowing members to make mobile payments for their purchases in its different buildings, the department store will roll out products exclusive to members and offer delivery services to enhance their offline shopping experience.

Breeze Center launched the membership card app not just for the convenience of the members. It is true that the members can get a freshly brewed coffee in the restroom by using the app, but the purpose of the app is to collect consumer data for analysis - not just the big data analysis that we are familiar with but the precision analysis of various records and data generated by members' shopping behaviors.

**Despite its robust online sales on Singles Day, Alibaba’s real challenge lies in offline logistics services.**

While Breeze Center offered its refined services, the e-commerce operators in China capitalized on Singles' Day, the world's biggest shopping festa, on November 11 and created NT$ 460 billion (US$ 14 billion) worth of business opportunities on the same day. According to Alibaba, nearly 70% of the transactions were done via mobile phones.

However, the challenge facing the online shopping festival lies in offline services. The founder of Alibaba Jack Ma said in an interview, "I don’t care about sales figures but I care how many parcels can be sent and safely delivered to the customers under the logistic system. Chinese media reported that Alibaba was faced with a high return rate of over 60% last year because of the customers' impulsive purchasing and their dissatisfaction with the company's logistics service.
Amazon determines what to put on the shelves in its first physical bookstore, Amazon Books, based on online data analysis.

In early November, while the department stores in Asia were competing for customers with various marketing strategies, the global e-commerce giant Amazon opened its first brick-and-mortar bookstore, Amazon Books, in Seattle where the company’s headquarters is located.

The books in the store are selected based on the data generated by Amazon.com customers in order to make sure the titles appeal to the readers in Seattle. All visitors from this area can find what they want to read in Amazon Books. The interior design of the physical store mimics the style of its online counterpart to provide visitors with consistent experience. All books are face-out. Under each of them, there is a card that provides a short review of the book from Amazon.com and a barcode that the readers can scan with their cell phone to be linked to the Amazon page of the book.

After 20 years of experience of operating as an online bookseller that has bested many physical bookshops, Amazon has opened its first physical bookstore to many people’s surprise and said to the press that they do not encourage shopping in the physical store. They expect visitors to place an order on line after browsing the books in the store. The company’s goal of establishing the offline store is to enhance online consumer experience.

With increasing segmentation of consumer markets, the O2O model has proved to be a solution and not just a trend.

While Breeze Center has adopted the online-to-offline model, Alibaba and Amazon have extended services from online to offline. In the face of various challenges, different retailers are developing innovative solutions to integrate the benefits of online and offline shopping based on their own strengths. The O2O model that became a widely discussed topic in 2012 has continued to evolve and proved that it is not just a trend. It has become an essential solution for all retailers.

The digital generation, who are used to shopping in both the real and virtual worlds, are becoming the driving force of consumption. Therefore, it is essential for retailers to identify their needs, adopt precision marketing strategies and develop their own features to stay competitive. From our observations, the large retail establishments that offer a wide range of services will remain predominant in the market, whereas the medium and small-sized retailers have to focus on specific market segments in response to demographic change.

Having adopted the O2O model, a number of retailers collect and analyze the data of consumer behaviors, thereby utilizing the analysis for marketing and logistics. One of the above-mentioned examples shows that providing refined and upgraded services to VIP members is a solution for a business to stand out in an intense competition. If a retailer fails to keep up with the times, it will probably face merger and acquisition threats in the future.
O2O Information Security- E-Commerce and O2O for SMEs is Information Security

The Mobile Internet vibrant development gave birth to a brand-new form of commerce – e-commerce. E-commerce, which is becoming increasingly popular, can be divided into the following categories: B2B (Business to Business), B2C (Business to Consumer), C2B (Consumer to Business), C2C (Consumer to Consumer) and O2O (Online to Offline).

O2O, which stands for "Online to Offline", appears to be taking e-commerce to a brand new stage in the future. O2O combines e-commerce and physical business by identifying the consumers via the Internet and attracting them to the physical distribution channels by using the knowledge of consumers' purchasing habits or promotions. Consumers can purchase products online and obtain services in the physical distribution channels. Uber, Yahoo Mall and EZTABLE (online restaurant search and reservation service) are just some of the examples. O2O can be seen in the food industry, clothing industry, housing industry, transportation industry, education industry and recreational industry.

As mobile devices become ubiquitous, mobile commerce has become the locomotive driving force of the rapid development of O2O e-commerce. Take Yahoo Mall for example, the ratio between its visitors from mobile devices and PC in the 2nd quarter of 2015 was 6 to 4.

M-Commerce pattern has become the norm. The corporates that provide online platforms own the big data, which they use to analyze consumer behavior patterns, identify potential customers and give SMEs indirect access to consumer information. This business model is very convenient to consumers but also has the risk of leaking personal information. Imagine that if you purchase a service on one of these platforms but the platforms or the physical stores do not have any information safeguard measures, is it possible that your personal information will be leaked and you might end up losing money for it?

Figure 1. O2O business model
SMEs tend to have lower or even insufficient investment in information security compared to the larger enterprises. Conventional information safeguard measures appear more vulnerable as hackers' attack are constantly changing and often come as a surprise. As the result more and more hackers have successfully stolen people's personal information.

Hackers have been constantly selling the classified information or trade secrets that they have stolen in the past decade, putting personal information security on a steep downward slope since. Sony’s PlayStation online server was hacked and many users' information was stolen. A well-known online shopping website accidentally leaked its consumers' personal information and many have fallen as a victim in some scams and therefore lost money. Many websites store their customers' personal information in their IDC (Internet Data Center) rooms, thinking that this would be enough. However, they never realize that their website source codes are full of loopholes and extremely vulnerable to hackers' attacks, making it easy for hackers to steal back-end databases' information. One of the most famous attacks was SQL-Injection.

Advance Persistent Threat (APT) is a commonly seen attack where the attack is specifically designed for the target. Hackers might use phishing websites or email hacks as traps to trick company staffs into using them unknowingly. It is hard for staffs to avoid such traps especially if it is someone inside the same company that set up these traps. Statistics show that most business secrets are leaked by someone inside the company. Therefore companies need to not only protect their secrets from hackers but also from their own staffs whether or not they leak the secrets intentionally.

When implementing information security safeguard measures, the following aspects should be considered:

1. **E-commerce website protection**

   Establish an active information security safeguard mechanism to withstand hackers' attacks. WAF (Web Application Firewall) analyzes Internet users' behavior and implements a pre-
II. Database protection

There are currently two types of products for SQL Injection detection/blocking: database access audits and data masking. One uses Switch’s mirror to copy packets or bridges to filter packets in order to monitor every single online behavior. The other installs an agent in the database to record every single change in the database and sends the information collected to a back-end management center. Managers only need to enter the management center to view the records and create a report.

III. Restricted data protection

By putting in place Data Loss Protection (DLP) Solution, a company can ensure the safety of its restricted data and legal compliances. In addition to monitoring and preventing leaks for personal information and restricted data, access monitoring should also be strengthened. Data transmission safety should be ensured on mobile devices, emails and all Internet channels.

IV. Internal computer monitoring

A company’s internal member should use end point security monitoring programs to record all uses of computers such as data transmissions over "My Network Places", installations of illegal software, monitoring of mobile devices and uses of communication software.

V. Defending APT attacks

Conventional anti-virus software cannot withstand all of the ever-changing APT attacks because hackers know how to exploit people’s weaknesses and trick them into clicking the traps and as the result hackers can install malware in the system without users' knowledge.

However for emails and Internet security, a comprehensive and in-depth defensive mechanism should be put in place. Such a mechanism uses sandbox technology to simulate the execution of malware, analyze the behavior of malicious files and check if an internal computer connects to a command and control server.

VI. Implementation of Security Information Event Manager (SIEM)

Only by collecting and analyzing thousands of records and statistics of all information equipment can one truly detect the source and objective of a threat.

SMEs may not be able implement all the aforementioned solutions due to their limited budgets. But they can still implement information security solutions that best suit their demands. They should also provide thorough information security education and training to their employees and teach them how to ensure the security in their use of computers and the company’s Internet.
Do not think even for one second that you will not be a hacker’s next target. Based on the Internet threat reports from information security solution providers, 31% of SMEs have fallen as victims of hacking compared to the 18% in the past. This number increased mainly because most SMEs are less aware of the importance of information security, which makes them more vulnerable to hacker attacks. Therefore SMEs should put more attention on the issue of information security. Otherwise an attack on one employee may cripple the company’s entire network and in turn destroy the company’s reputation.
Growing MSMEs Globally Through Cross-Border E-Commerce in APEC: Empowering MSMEs and Eliminating Barriers

Research by the University of Southern California commissioned by ABAC

The wave of e-commerce is here. Traditional impediments to doing business are being shattered, incumbent industries are losing dominance, and governments are struggling to adapt to new forms of trade. For those that do not, creative destruction of many MSMEs is eminent. The change e-commerce brings will be severe. In this new interconnected global environment, there will be winners and losers at both the economy and business level. For MSMEs, the era of cross-border e-commerce provides both opportunities and risks. In this newly connected world, businesses both large and small face a clear choice: be part of the wave of change, or risk falling behind. Adoption can mean access to millions of new customers. Failure could mean extinction or irrelevance.

The choice is yours: economies can either ride the wave of e-commerce prosperity or risk being left behind. The APEC Business Advisory Council requested the University of Southern California to interview APEC business leaders and to capture their views and experiences on the challenges and opportunities of cross-border e-commerce for MSMEs in APEC economies. Our study concludes that the potential gains are well worth the focused attention of APEC policy makers. APEC MSMEs want more policy leadership within and across economies. From 506 intensive interviews in all 21 APEC economies across government and business and 244 survey data points, we learned that MSMEs face an environment that is unnecessarily complex, biased in favor of larger firms, and lacks a coherent cross-border e-commerce trade landscape. A comprehensive cross-border ecommerce framework was established in order to investigate the enablers and impediments affecting MSMEs. We have also established case studies of innovative companies that can serve as examples to other economies.

As a research team, we began our task agnostic to the question of whether or not encouraging MSMEs to engage in e-commerce was worth the effort. We are convinced that encouraging, supporting, providing training, getting access to e-commerce marketplaces and platforms, and reducing barriers and impediments to cross-border e-commerce does make a big difference for MSMEs. The sheer complexity of cross-border trade is daunting for even the biggest and best multinational enterprises; but it appears as an impenetrable challenge for most MSMEs without assistance. The goal of this report is to bridge the gap between MSMEs, governments and APEC in order to reduce the burdens MSMEs encounter.

Innovative technologies have effectively opened the door to MSMEs to adopt e-commerce platforms and go cross-border. Lower price points for mobile devices and data give millions of new consumers the opportunity to buy online. Together, many traditional barriers to entry have been shattered, creating a new hierarchy of market players, where global platforms are replacing the old titans of trade and commerce and MSMEs can have an outsized impact on the global landscape.

**Overall Findings:**

Cross-border e-services offer both the greatest growth potential and the easiest entry into the global value chain for MSMEs. However, much more effort is needed to develop MSME capacity.
in cross-border e-services.

MSME’s capacity and reach must be improved. The single most critical limiting factor we observed was the lack of readiness and capability of MSMEs to engage in e-commerce. Problems of awareness, technical ability, access to talent, and financing all limit the potential of MSMEs.

Getting e-payments right is crucial. E-payment solutions must expand beyond traditional banking solutions. Governments must allow for new, innovative e-payments solutions and avoid the vested interests of incumbents.

E-commerce marketplaces are critical enablers for MSMEs, but they are not benign players. Marketplaces and platforms must be encouraged and supported, but care must be exercised to avoid allowing too much market control.

Complexity and cost of customs and trade rules destroy MSME opportunities. If major improvements "at the border" are not made – online processes, simplified procedures, and special customs clearance accommodations for MSMEs – MSME participation in global trade will remain limited.

A harmonized coherent cross-border e-commerce regulatory framework is critical. The lack of comprehensiveness and compatibility of e-commerce laws and regulations across economies remains a major impediment.

Lack of awareness on the potential of cross-border e-commerce. There is a disturbing lack of awareness among most APEC governments, and among most MSMEs, of the potential opportunities in cross-border e-commerce, and of the developments and innovations in cross-border e-commerce in other economies.

The multi-ministerial "oversight" challenge is, perhaps, the single most critical impediment to meaningful policy leadership in e-commerce. A core problem across all APEC economies was that governments have overlapping ownership or lack of ownership for ecommerce.

M-commerce is the future. Policy makers must not get in the way. E-commerce is rapidly evolving into m-commerce with new challenges and opportunities.

Governments are trying to lead; MSMEs are seeking assistance. Across APEC economies, we found governments are trying to lead and create programs for MSMEs. However, there is a real gap between the public and private sectors.

Cross-border e-commerce flourishes best in strong domestic
e-commerce environments. Developing strong domestic supporting institutions and players is critical to creating globally competitive cross-border e-commerce firms. In turn, globally competitive cross-border e-commerce firms enhance the competitiveness of domestic e-commerce.

Growing MSMEs globally is worth the effort. Because of the sheer number of MSMEs that dominate the economic landscape of most APEC economies, enabling even small improvements for MSMEs has magnified impacts on productivity and economic prosperity.

Positive-sum game. E-commerce, and cross-border e-commerce, is not a zero-sum game. It is not simply the switching of one business model for another. The positive impact of technology, expanded reach, lower transaction costs, and efficiency improvements leads to real economic gains.

Creative destruction: the impact will be severe. It is dangerous and naïve to think and expect that all MSMEs will transition to e-commerce. Most will not. Indeed, we estimate that 80 percent of MSMEs, more in some economies, lack the technical skills and resources to become competitive in the new e-commerce landscape. It is even more dangerous to suppose that most MSMEs because of their small size and niche market approaches will be immune to the creative destructive impact of technology, the Internet, and e-commerce.

Only as strong as the weakest link. Sadly, a globally competitive cross-border e-commerce ecosystem is only as strong as its weakest point. MSMEs in some APEC economies are disadvantaged by low levels of connectivity, in other economies they are disadvantaged by poorly developed payment systems. Still in other economies, MSMEs try to compete in outdated and ineffective regulatory regimes.

Imagining a new trade landscape and overcoming vested interests. How and where economies- and industries- will change, as well as who the winners and losers will be, is not yet fully understood. Nor is it predictable. There are no theories or frameworks for predicting waves of change. But what is clear is that many MSMEs, large enterprises, and even government institutions will be forced out of existence or drastically altered. Economies must resist the self-interest of motivated incumbents in both business and in government.

Will history repeat itself? In 2000 at the APEC Small and Medium Enterprises Ministerial Meeting, the attendees recommended that APEC put a framework in place to coordinate
standards, increase consumer confidence, and encourage private sector innovation. In the fifteen years since, progress toward these ambitious, vital APEC objectives has been limited. It is no wonder MSMEs are growing impatient.

Collective action is needed. Individual economies can take positive steps to develop regulatory structures and education programs that enable a new generation of e-commerce success stories, but any hope of reaching the true potential of cross-border e-commerce across the APEC region will depend on the collective cohesive actions of all economies. MSMEs need harmonized and interoperable laws and regulations across APEC and consumers need protection.

**Recommendations**

**Create an APEC-wide MSME e-commerce roadmap.**
- We urge APEC economies to establish an APEC-wide e-commerce action plan to increase participation by MSMEs in cross-border e-commerce.

**Make cross-border e-commerce a priority.**
- We urge APEC to make e-commerce and m-commerce a key priority in all trade and investment discussions.
- We encourage APEC economies to tackle the multi-ministerial oversight challenge. Make e-commerce and cross-border e-commerce a national priority. Make e-commerce a priority in the education agenda. Simplify domestic policies and processes to enable Internet-based businesses.
- We advise economies to develop extensive roadmaps outlining the actions that they will take to promote the e-commerce environment and reduce friction points. The Philippines 2020 Roadmap serves as a strong role model
- We recommend individual economies research where competitive clusters and comparative advantages can be readily developed in cross-border e-commerce and especially in e-services.

**E-service drives real growth potential is for MSMEs.**
- We encourage APEC to increase the emphasis placed on e-commerce in the ongoing trade in services work stream.
- We urge APEC economies to create task-forces to examine the competitiveness of their MSMEs cross-border e-commerce in the trade in services agenda.

**Educate MSMEs about potential opportunities in cross-border e-commerce.**
- We encourage APEC economies to increase touch points with MSMEs to improve awareness of global opportunities, government sponsored programs and MSME pain points. Additionally, we encourage economies to push for greater adoption of e-commerce tools through promotion of training programs such as CBET.
- We encourage individual MSMEs to seek out government programs and support opportunities, such as CBET.

**Invest in capacity building for MSMEs.**
- We encourage APEC economies to create collaborative communities to foster entrepreneurship and share base practices learnings.
- We urge individual economies to more actively engage universities and technical schools in


developing education and training programs for students in aspects of e-commerce. Public-private dialogue forums drive mutual understanding and keep the focus on the future.

- We encourage APEC economies to engage in more public-private dialogue and partnerships on cross-border e-commerce, and find more ways to get MSMEs involved.

**Simplify customs and trade rules for MSMEs, create programs to expedite cross-border e-commerce, and adopt harmonized online procedures.**

- We urge APEC to expand and accelerate initiatives to simplify and expedite customs requirements for MSMEs engaged in cross-border e-commerce, such as authorized economic operator programs. Moving to completely online processes is critical.
- We encourage APEC economies to enhance logistics value chains and streamline customs procedures for low-value goods.

**Tap the wealth of information and experience on "what works" in APEC economies.**

- We stress the importance of APEC economies getting ahead of m-commerce. Work with the leading firms to create policy frameworks to support and guide the development of m-commerce and the mobile spectrum for increasing bandwidth demands.

**Harmonization and coherence of e-commerce laws and mutual recognition of standards across APEC is critical.**

- We urge APEC to accelerate efforts to secure agreement on a framework for digital economy planning and agenda setting. Economy by economy approaches must be avoided at all cost. More discussions and efforts on harmonizing region-wide regulations, especially on e-payments, e-signatures, customer protection, VAT, and limited liability protections are needed.
- We urge economies to actively address issues in cross-border payment frameworks, fraud, and consumer protection.
- We encourage MSMEs to engage in cross-industry and cross-economy dialogues on establishing mutually agreed upon standards and frameworks.

**Encourage the development and growth of e-commerce intermediaries but use a light regulatory touch.**

- We recommend economies monitor the market positions and influence of e-commerce marketplaces and platforms with their economies.

**Encourage and support multiple competitors.**

- We encourage APEC economies to engage large e-commerce players to provide mentoring and training to MSMEs in their ecosystems. Negotiate robust e-commerce provisions in free-trade agreements.
- We encourage APEC economies to examine the provisions for e-commerce written in the Trans-Pacific Partnership trade agreement. Encourage funding and support for MSMEs to support innovation.
- We encourage APEC economies to foster and support the funding of ecosystem and startup incubators.
- We recommend creating programs that draw university graduates into e-commerce incubators, and into new e-commerce startups.
In the 1990s, the vibrant development of the Internet resulted in the rapid emergence of e-commerce, which caused consumers to change their buying habits and allowed stores to deal with the consumers directly via the virtual distribution channels. In the 21st century, social media, smart phones and wireless networks (3S) have brought forth another technology revolution, making online transactions more convenient. Today, a stable online transaction mechanism, diverse payment methods, a comprehensive money flow process and adequate regulations have made O2O the last mile in the competition of e-commerce. Using services or promotions to encourage consumers to switch between virtual and physical distribution channels is a common challenge for all e-commerce companies.

The success of O2O relies on local services. Group buying websites are perfect examples of the sharing economy issue. Consumers, after purchasing a deal on a website and paying using a virtual payment system, take the code to the store and exchange it for the product/service. In these cases, consumers purchase the product/service mainly for the discounts while the stores get to advertise and attract visitors online. The scenario looks like a win-win situation but customers using a voucher from a group buying website usually will not become loyal customers. Once the deal, the biggest incentive for purchase, is no longer available, consumers most likely will not be willing to pay the regular price for the same product/service. The steep discount will only drive away loyal customers who have been paying the regular price for the same product/service.

Stores often use applications implementing location-based service (LBS) technology to send advertisements/promotions to consumers nearby. When a foreigner travels in the US, Japan or Europe, once he/she turn on the cell phone he/she will receive advertisement texts from the local telecom companies for their 4G service. In New York, if you open the Uber app, you will receive promotions and advertisements exclusive to New York and more models of cars to choose from than in Chinese Taipei. Another example is the department stores in the Xin-Yi district. Customers will have to use Online Sign-Up (OSU) to connect to the department store’s Wi-Fi and are required to watch a promotional video or click on a commercial for any brand offered in the store before they can connect to the Internet. Some will even require customers to download and open a certain brand’s own app first. Actually, a commercial attracts customers who want a certain service better than those who only come for the discount. Contrast to the conventional point system which is used to boost customer loyalty, O2O and LBS apparently can attract customers much better and can be
seen as an extension of VIP membership’s point system. Such method can use virtual stimulations to attract consumers to head to the physical stores. These customers attracted by related commercials are the potential VIPs whose loyalty to the brand/store can easily be cultivated.

Virtual payment Gateway with O2O will be a niche for the future e-commerce in Chinese Taipei. Taking the game industry for example, an online game must use a payment gateway for transactions. As players enjoy themselves in the virtual world, they must pay on a payment gateway to purchase virtual currency or treasures. Another option is purchasing point cards or gift cards at distribution channels like convenience stores and deposit the points into a player’s account. However the high shelf fee and issuing physical cards are all costs to the game company. Besides, banks usually give a discount on the transaction administration fees to game companies. Therefore for these game companies, the best option is to encourage players to pay on a payment gateway. Many game companies or even e-commerce companies are devoted in developing their own payment gateway, which has more payment agents, supports multi-currency transactions and has a comprehensive back-end payment collection/refund mechanism. With a payment gateway of their own, they can connect other game companies and content providers/service providers and charge stores transaction administration fees. However, a payment gateway is, after all, only a payment transaction platform. If an online payment gateway and a store combines their O2O service, you can imagine walking on a street after dinner and your phone receives ads from bars nearby and one of them allows you to buy tickets online without waiting in line or ID check. If a customer has already registered on that payment gateway with his/her age verified beforehand, he/she can enjoy the aforementioned service and pay for the ticket conveniently online. After he/she enters, the store can use Wi-Fi’s indoor positioning technology and bring today’s daily specials to the customers. Next the customer can use a mobile payment gateway’s payment device to pay directly or create a QR code which the store can scan and collect the payment directly from the customer’s e-wallet (Figure 2). A bar can work with a taxi company and the taxi company can have a sign showing whether or not a customer at the bar is calling for a cab. After a customer arrives at home, the IoT applications from his/her smart home will turn on the air conditioning and lights automatically and the insufficient inventory indicator can go off when there is not enough milk and vegetables left in the fridge, asking whether or not the customer wants to order online and have it delivered the next day. Many products used in this O2O scenario are already in production in the market and the software and cash flow technology are already mature as well. If the O2O services from different industries can be integrated, it can develop into a comprehensive O2O industry chain.

![Figure 2: O2O-Virtual Payment transaction pattern](image-url)
O2O can be implemented in the dining industry, entertainment industry, smart homes, transportation and international tourism. The ultimate goal will be forming an O2O industry chain. For tourism, there can be bike tours specifically designed for foreigners. For transportation and lodging, there are hotels' frequent guest programs and airlines' frequent flyer programs. Tourist attractions can support multi-currency transactions and even provide international delivery to the door of souvenir, which will be very convenient for visitors. In the global market, O2O service is now in the price-cutting competition (red-ocean/price based competition). The aforementioned O2O-LBS, O2O-Virtual Payment and O2O-IoT, which are mobile device and wireless applications, are just a small fraction of what is possible. Once the "last mile" of O2O has matured, the entire O2O industry chain will once again revolutionize our living habits.
The 22nd APEC Small and Medium Enterprise Ministerial Meeting (APEC SMEMM) and Related meetings were held in Iloilo City, the Philippines during September 21-25, 2015, attended by over 100 minister-level representatives and trans-national business leaders from 21 APEC member economies. The Chinese Taipei delegation, headed by Deputy Minister of the Ministry of Economic Affairs (MOEA) Mr. Shih-Chao Cho was invited to share its years of experience in promoting SME development. Furthermore, to facilitate innovation and entrepreneurship in the APEC region, Chinese Taipei and the Department of Trade and Industry (DTI) of the Philippines jointly organized the "2nd APEC Accelerator Network Forum (AAN for Early-Stage Investment)", which was actively participated by officials from APEC member economies, business representatives, international venture capitalists, accelerators and start-ups. Highlights of selected meetings are detailed below.

I. The 22nd APEC SMEMM on mainstreaming MSMEs in the global economy

The theme of this APEC SMEMM is "Mainstreaming Micro, Small and Medium Enterprises in the Global Economy" which leads to the following three subthemes: A) Removing Trade Barriers to Facilitate MSME Entry to Markets; B) Advancing Modernization and Standards and Conformance of MSMEs; and C) Promoting Inclusive Growth through Sustainable and Resilient MSMEs. An "SME Ministers-CEO Dialogue" was also held during the meeting.

A. Regarding the first subtheme, member economies including Australia, Canada, Indonesia, New Zealand, the Philippines, Papua New Guinea and the United States expressed opinions and discussed ways to facilitate trading environment for MSMEs.

B. Regarding the second subtheme, member economies including Australia, Canada, China, Singapore, Malaysia, Mexico, the Philippines and the United States expressed opinions and discussed ways to facilitate SME digitalization and automation policies.

C. Regarding the third subtheme, member economies including China, Japan, Hong Kong, South Korea, Russia, Thailand, Vietnam, the United States and Chinese Taipei discussed ways to encourage inclusive growth. Participants agreed that increasing MSME sustainability and resilience can promote overall inclusive growth in the APEC region. Each member economy expressed their opinions and reported on the measures taken this year pertaining to this issue.

In the "SME Ministers-CEO Dialogue", the discussion was based on the following three subjects: 1) increase SME market entry through trade innovation and facilitation; 2) create a policy environment conducive to SME financing and innovation and supply chains; and 3) build an innovative ecosystem friendly to entrepreneurs.

The 2015 APEC SMEMM Joint Statement reiterates the importance to reinforce MSME participation in regional and global markets and calls for member economies to continue to give attention to core issues pertaining to the development of MSMEs such as business ethics, women’s economic development, non-tariff barriers, and capacity building programs. Many of the issues
have been incorporated into the MSME and industrial development policies of Chinese Taipei. Also in the Joint Statement, there are several instances of recognition (cf. paragraph 16, 19, 29, and 33) of the three projects of Chinese Taipei, namely 1) New Era of Growth for APEC SMEs through Online-to-Offline (O2O) Business Models, 2) Reinforcing Business Continuity Planning Capability of APEC SMEs (four-year project); and 3) 2nd APEC Accelerator Network Forum (AAN for Early-Stage Investment). Key messages of the Joint Statement and important outcomes of Chinese Taipei mentioned in the Joint Statement are as follows.

**Highlighting the Importance of Micro Enterprises**

SME Ministers highlighted the importance of micro enterprises and agreed to discuss in the meeting the following three subthemes: 1) Removing Trade Barriers to Facilitate MSME Entry to Markets; 2) Advancing Modernization and Standards and Conformance of MSMEs; and 3) Promoting Inclusive Growth through Sustainable and Resilient MSMEs.

Regarding subtheme one "Removing Trade Barriers to Facilitate MSME Entry to Markets," the Joint Statement gave special recognition to the "Boracay Action Agenda to Globalize MSMEs" led by the Philippines and "Cebu Action Plan", which aim to provide better financing and easier trade environment for MSMEs. Chinese Taipei’s "New Era of Growth for APEC SMEs through Online-to-Offline (O2O) Business Models".

Regarding subtheme two "Advancing Modernization and Standards and Conformance of MSMEs," Ministers welcomed the collaboration of the SMEWG with the Sub-Committee on Standards and Conformance (SCSC) in jointly developing a work plan, which includes the exchange of information on different package label regulations, educational trainings, and various compliance rules and standards, so as to help build MSME capacities in this regard. Contributions of Chinese Taipei’s "APEC Accelerator Network (AAN) Initiative" and the "APEC Challenge" to the modernization of MSMEs.

Regarding subtheme three "Promoting Inclusive Growth through Sustainable and Resilient MSMEs," Ministers agreed to promote policy, business and regulatory environments that foster MSME resilience and promote inclusive growth. In this regard, the Joint Statement made a special mention of Chinese Taipei’s hosting of the APEC Business Continuity Planning (BCP) Workshops.

The Ministers adopted the "APEC Iloilo Initiative: Growing Global MSMEs for Inclusive Development" as a guiding framework in integrating MSMEs in international trade and GVCs through the strengthening of MSME core competitiveness and sustainably. The Ministers also agreed to launch the "APEC MSME Marketplace (virtual platform)" as a one-stop portal for member economies to share information related to ways to help MSMEs grow through substantive efforts that promote innovation and sustainability.

**II. APEC Accelerator Network Forum (AAN for Early-Stage Investment)**

The forum was opened by Deputy Director General of the Small and Medium Enterprise Administration of the MOEA of Chinese Taipei, Ms. Mei-Hsueh Lin, and DTI Undersecretary of the Philippines Ms. Zenaida Maglaya. Ms. Lin in her opening remarks thanked the Philippines for their reserved support during the preparation of the forum and stressed that despite the challenges posed by the advent of digital economy and the Internet of Things (IOT), there remained in normals opportunities for MSMEs. Entrepreneurship and innovation are key elements of sustainability in
times of adversity and challenges.

To connect regional resources for innovation and incubation, Chinese Taipei initiated the creation of the APEC Accelerator Network (AAN), which now boasts more than 50 accelerators from 15 member economies. In a similar effort, Chinese Taipei partnered with US technology giant Intel and German well-known company Siemens in holding the 2015 APEC Global Challenge, a competition for entrepreneurs, which has attracted over 1,000 participants in a span of 3 years, including 90 start-up teams and business leaders and venture capital representatives from 21 APEC member economies. Many teams successfully gained investment and international exposure after joining the Challenge. To benefit more start-up teams, the APEC Global Change organized two additional selection competitions in Atlanta, the US and Iloilo City, the Philippines (the latter of which took place during this Forum) before the global final was held at Taipei New Horizon on October 19 and 20. In this Forum, excellent start-up teams from Chinese Taipei (Our City Love, Docceo, GeoThings and DataTaiwan) along with 9 brilliant entrepreneurial teams from the Philippines, Singapore, Thailand, and Viet Nam were invited to give a briefing on their operations, which were then commented by a panel of international judges with professional backgrounds as a way to increase these teams’ exposure to global opportunities. At the end, T.Ware from Singapore stood out among the crowd and was qualified for the final round of 2015 APEC Global Challenge in Taipei in October.

Focusing on three themes, namely 1) Leveraging the Digital Economy: Opportunities and Challenges of Taking Your Startup Global; 2) From Start-up to Scale-up : Early Stage Investment; and 3) From Innovation to Integration : Start-up Communities, the forum featured two keynote speeches and two penal discussions. The forum was attended by government representatives from the Philippines, APEC Business Advisory Council (ABAC), US Open Computing Alliance, US-based Intel, US-based Yushan Ventures, Philippine-based Kickstart, and AAN members such as US-based Plug & Play, Thailand-based Software Park, and Philippine-based Santa Rosa Technology Business Incubation to discuss the potential opportunities and challenges faced by start-ups in a globalized market.

III. Workshop on Business Continuity Planning for APEC SMEs: Building Sustainable and Resilient Communities

To strengthen APEC SMEs’ capabilities in emergency response and continuous operation in the face of natural disasters, as well as to reinforce global supply chains and global value chains (GVCs), Chinese Taipei collaborated with the DTI of the Philippines to hold the Workshop on Business Continuity Planning for APEC SMEs: Building Sustainable and Resilient Communities on September 22. Over 100 representatives from the government, industries and disaster prevention organizations participated in the Workshop by sharing best practices and exchanging ideas on the impact of BCP on SMEs, GVCs and global supply chains.

In addition to being a dialogue platform for the promotion of BCP among APEC SMEs, the Workshop is also a substantive implementation of the theme "Building Sustainable and Resilient Communities", a theme selected by the Philippines, the 2015 APEC host economy. Chinese Taipei and the Philippines has formed a partnership in promoting BCP, focusing on the use of public and private collaboration, policy dialogue, and training trainers in a bid to help SMEs in the Philippines.
The Workshop was graced by important figures such as the Philippine DTI Undersecretary Ms. Zenaida Maglaya; Vice President of the Supply Chain Management Association of the Philippines Ms. Corazon C. Curay; and Group Director-Operations at Manila Water Company Mr. Geodino Carpio, who offered valuable advice on potential measures and policies regarding BCP implementation by SMEs. Moreover, Asian Disaster Preparedness Center (ADPC) representatives and Philippine experts and scholars also shared their experiences and best practices in a bid to help SMEs recover more promptly from disasters, minimize economic losses, and reduce operational disruptions. The Workshop also invited GeoThing, a start-up company from Chinese Taipei, to share how it utilized innovative ICT in disaster prevention and relief, which was highly commended by participants. Towards the end of the Workshop, the participants proposed policy suggestions to APEC regarding ways to assist SMEs implement BCP.

In the Workshop, the Guidebook on SME Business Continuity Planning, published by Chinese Taipei in collaboration with international disaster prevention organizations, was adopted to help Philippine officials and local SMEs gain a better understanding of BCP, paving the ground for future implementation of train-the-trainer programs in the Philippines. Six member economies, namely Thailand, Indonesia, Vietnam, Mexico, Japan and the Philippines have voluntarily chosen to continue the promotion of BCP, translated the guidebook into their respective languages, and co-organized over 10 train-the-trainer programs with Chinese Taipei.

More than 800 trainers have benefited from these training programs and the guidebook is now available in 7 languages, including English, Chinese, Thai, Indonesian, Vietnamese, Spanish and Japanese, reaching over 40% of the world’s population. The guidebook is expected to effectively help APEC SMEs implement BCP and create an environment that encourages innovation. With a downloadable version on the website of APEC SCMC, the guidebook is believed to have continuous and far-reaching impact on the promotion and implementation of BCP in the APEC region.
Picture 2. Group photo of the 2nd APEC Accelerator Network Forum (AAN for Early-Stage Investment)

Picture 3. The Singaporean start-up team qualified for the final round of 2015 APEC Global Challenge in Taipei in October, among nine competing start-up teams from five economies at the 2nd APEC Accelerator Network Forum (AAN for Early-Stage Investment).

Picture 4. Group photo of the Workshop on Business Continuity Planning for APEC SMEs

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