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Perspective

Productivity Again and the Strategies

P. C. Chang

▶Pao Cheng Chang, President of the China Productivity Center

The past track record of industrial development tells us that nothing is permanent in a business environment. The frequent use of the phrases such as "transient competition" and "paradigm shift" is further evidence of the constant change. The global economy is on road to recovery but with very different dynamics and substance. The American protectionism is on the rise. Germany is looking ahead to plan a strategic future for its

industries. China has initiated a mega business environment re-engineering plan. The ASEAN markets seem to be booming with opportunities but with risks looming on the horizon. Looking back the course of development over the past decades, the disruptive innovations such as the IoT, cloud computing, artificial intelligence and machine learning have dramatically changed the existing market and value network around the globe, becoming the force behind the growth of modern businesses. The article takes the readers back to the basics and argues that the impetus behind growth and innovation lies in a company's capacity to re-engineer its productivity. For the past hundreds of years, productivity is constantly defined as the ratio of output to input used in a production process. But the definition has been re-interpreted over time to better reflect the needs of the time and the field. A company aspiring to stay relevant and competitive must see "Productivity Again" as a process constantly undertaken over the course of sustainable business development. The organization should be committed to the practice as an integral element of the organization management.

Create a Sense of Urgency for Productivity Again

In a time characterized by volatility and

uncertainty, I implore you to focus your attention on sustainable business development. A company must kindle a sense of urgency for Productivity Again in addition to business foresight and solid technological foundation. If we examine the evolution of the definition of the equation (productivity = output/ input factors), we can see that the range of input factors has extended to cover creative R&D, intellectual capital, service attitude and service quality, in addition to the conventional capital, technology, land, plant and equipment. The range of output factors now includes intangible factors such as core competencies (comprised of customer contentment, customer satisfaction and customer retention), unique asset and comprehensive performance, in addition to the conventional measures of revenue, profit and market share, all of which are tangible.

Adopt New Management Mindset and Use Technology to Implement Necessary Actions

The traditional measures of business competitive factors have been changed from quality, speed of delivery and cost to innovation, speed and value. The Productivity Again model = output / input. The equation here indicating a process of dividing output with input must be interpreted to mean that all necessary actions taken to achieve cost reduction and value addition are the key drivers of the Productivity Again process. Let me give you some examples. Define customer value in the context of business model innovation; get the company in better shape by strategic re-engineering of processes and organizational reform; integrate experiential marketing with intelligent system applications to create a better service experience. To achieve these aims, a business leader is expected to employ new ways of management thinking and technology tools to incorporate innovative thinking into production, manufacturing and services. As these factors are applied for optimization, the company achieves the goal of sustainable business development by generating revenue, reducing cost and increasing competitiveness. The measures and actions described above are human-oriented strategies that can be adopted to create value and increase productivity to meet the needs of fast-changing trends in a business ecosystem.

Productivity as the Foundation of a Company

In the recent years, I have taken different opportunities to remind my friends in the business world of the need to re-engineer productivity. It is pity that many business owners lack the wisdom and foresight to give the issue more thought, believing productivity re-engineering falls is the responsibility of front-line functional managers. Some other business owners agree with the general concept but initiates the re-engineering process by purchasing automated plant and equipment. I am sure all business leaders understand that, despite the relentless innovation and overthrowing of the old business models, productivity remains to be the constant factor determining the success of a business. I have mentioned in my book, *Creating Five New Competitive Strengths*, that the foundation of a company lies in productivity. Quality is the core strength. Lean management accumulates energy. Innovation takes the company to the future. With the new five forces, the company is able to achieve customer success and sustainable business development.

Three Strategies of Productivity Again

We now shift our attention to examine why certain organizations fail to increase productivity or why the plan of action is ineffective. I think the primary reason of failure is an absence of understanding of the essence of business operation, that a business does not exist to provide products and services because it is required to produce or serve, but to provide a solution that aims to tackle a demand or problem the customers have. In this light, purchasing automated equipment is like adding infrastructure to the company; it does not meet the customers' demand or solve their problem. Therefore, I propose that, to start a Productivity Again process in an organization, the decision-maker must start by wrapping his/her head around the idea, identify a framework, and then create or adopt methods, tools and solutions. I recommend the business leaders start with the following strategies:

1. Focus on important objectives: Reduce the number of objectives set for the organization and concentrate the resources on the limited but very important objectives. The employees will have a very clear idea about the company's ambition and goals.
2. Pay attention to leading indicators: Place emphasis on the leading indicators as predictors of change as they provide a window for the company to respond to upcoming challenges. Do not pay attention to lagging indicators as nothing can be done to change the outcome.
3. Strengthen the sense of duty: Motivate the team members and inspire their inner urge to reach the goals. Encourage the employees to engage in active planning rather than wait for instructions.

When you have the right mind set, the methods, tools and solutions are where you set your mind to. I'd like to ask my colleagues at China Productivity Centre to think outside of the box that represents the old mentality by examining the core questions from another perspective or a reversed angle. The purpose is to encourage the Centre to actively create value and increase productivity, thereby providing our customers with customized products and services. At the critical time when the global economy is on road to recovery, the mindset switch is crucial for businesses to make the right decision and be a winner in the future.

(The author is the President of China Productivity Centre and the Senior Industry Advisor of Asia Pacific Industrial Analysis Association.) *CPC*

Part1

Introduction

How to Become a Desired Top Talent in an Age of AI When the Value of Expertise and Experience are Diminishing

The arrival of the AI age is a paradigm-shifting change for the existing concepts of employment and skill. Skill upgrading and adaption to the new employment trends will be the norm in the new age. At a workplace, people are expected to have a bag of social skills that include communication, listening and empathy to enhance person-to-person interaction. Another expectation is the ability to reap the productivity benefits from human-machine collaboration enabled by artificial intelligence and robots. Top talents in possession of these skills will continue to be relevant and highly demanded from now and into the future.

More than a century ago, Frederick Winslow Taylor, the father of scientific management, designed and implemented standard operating procedures to which workers were required to comply in order to enhance the highly efficient production plan. He kept track of performance inconsistencies through key performance indicators and established improvement plans accordingly. The scientific management method has been the essential standard practice in most businesses up until this day. However, the invention of AI robots in more than 100 years later was certainly beyond the imagination of the father of scientific management. AI robots enable perfect execution of standard operating procedures and compliance with the key performance indicators. The smart sensors connected to the communication network allow the robots to learn from the data by performing feature extraction, filtering, categorization and prioritization, eventually leading to optimized decision-making. AI applications create value as the production goals are met with efficiency.

Yutaka Matsuo, author of *Your First Book on Artificial Intelligence*, points out in the book that the hype about AI first appeared in late 1950's and 1960's. The research during this period focused on using computer algorithms to solve specific problems through reasoning and search. The difficulty and complexity of the technology remained unsolved as the hype soon cooled off. The popular interest in AI was re-kindled in 1980's when an expert system was created by entering knowledge into computer systems. But the application was neither user-friendly nor smart as had been originally expected. The enthusiasm for artificial intelligence waned.

The recent revival of AI began with extensive media coverage on the triumph of Alpha Go, an AI-enabled system that learned rules and techniques about the board game Go by a knowledge acquisition process based on a combination of search engine technologies and big data. The fervour for AI soon spread to all corners around the globe.

Passenger Economy Enabled by AI Technologies

Take driverless car, a topic currently under heated discussion, for example. When a driverless car provides a safer transportation option by learning and emulating human thinking, people can better use the commuting time for activities covering financial investment, consumption and entertainment, as well as work and meetings. Economic sectors of all sorts flourish with the extra window of time, forming the so-called "passenger economy". For this reason, manufacturers such as Toyota and Ford, amongst others, have committed generous resources to R&D to smooth the way to a successful campaign in market potentially worth 20.3 billion U.S. dollars.

The upheaval does not stop at the auto industry. According to the PwC Global FinTech Report 2016 published by PricewaterhouseCoopers, the general views of 544 survey respondents from 46 countries, principally Chief Executive Officers (CEOs), Chief Information Officers (CIOs) and top management involved in digital and technological transformation of the financial industry are that the traditional agent-based service providers are finding themselves losing market share to the provides that follow the new

technology-driven business model.

Financial advisors, mostly consisted of robots, perform data analysis by monitoring the fluctuations in the international markets and calculating the gain or loss in respect to individual investment instruments 24 hours a day, 7 days a week. They go on to recommend real-time portfolio adjustment and corresponding strategies. In the past, financial advice was considered an opportunity for financial advisors to showcase their expertise and to earn the trust of clients and customers. Furthermore, a study published by Oxford University estimates that 47 percent of total U.S. employment are at risk of being automated in the next 20 years. Some of the jobs at risk include taxi drivers, security guards and administrative assistants. A report from Goldman Sachs Economics Research also predicts that American drivers of buses, taxis and trucks will see job losses at a rate of 300,000 a year when the autonomous driving technology becomes mature and driverless vehicle saturation peaks.

New Outlook for the AI Industry

AI is a disruptive tech-trend that directly causes the loss of traditional occupations. But widespread AI applications will create new job opportunities. Marc Andreessen, a prominent American venture capitalist, viewed the change from the historical pattern of economic development and concluded that, when automobiles replaced horses as primary means of transportation, the auto industry turned into one of the country's largest employers staffed by tens of thousands of people. Many industries flourished because of automobiles, examples including hotel, restaurant, insurance, auto repair, just to

name a few. The automobile industry is a leading force and an engine for economic and job growth. By the same token, the wide AI applications in autonomous driving will create new classes of jobs. An example is a driverless car fleet manager that handles operating irregularities and projection of accidents and danger arising from breakdowns or aging parts through inquiry and analysis of data. Customer service representatives, retailers and auto body shops are still needed albeit with very different job duties and expectations. They will bring to work inter-disciplinary skills and know-hows integrating many dimensions of the industry.

The attention is then shifted to drones, popularized by Amazon. There are more than 770,000 registered drones in the U.S. according to the U.S. Federal Aviation Administration (FAA). Jobs created by the industry include, amongst others, instructors providing assistance to drone setup in related education and training programs, salespeople providing customer services, repair technicians with specialized expertise and experience, and designers specializing in integrated hardware design and software development. It is possible to conclude that each occupation in the age of AI must be re-imagined and re-defined. Everyone in the workforce and every business is expected to have the skill set to work with robots. Professional knowledge is needed but not crucial.

Skill Upgrading and Adaption to the New Empowerment Trends as the Norm

In other words, in a society permeated with AI, a highly sought top talent needs to have more than

one set of specialized skills. A highly educated, highly skilled and type π personality survey highlights the importance of a type π personality in the AI age. A graphic interpretation of π reveals a body bolstered by two legs symbolizing proficiency in two specializations, two disciplines, two occupations, two foreign languages, and so on. There is always capacity to further enhance and extend the skill set. The horizontal bar on top of the legs symbolizes the ability to integrate the classes of skills represented by the left and the right leg, respectively.

How does one acquire a type π personality that supports specialization in certain fields but conveys general inter-disciplinary understanding and functions? One must learn to perform data analysis and make decisions based on the former in order to assist in all aspects of work related to data. An aspiring young talent must break the boundaries of school departments and pursue knowledge generally without self-enforced limitations. At a workplace, one is expected to extend the application of individual skill sets in all directions. Examples include initiation of inter-departmental cooperation or request for taking on different tasks and responsibilities in order to be exposed to diverse experiences. These moves not only help one stay relevant in the career but also turn one into a top talent highly sought after by the industries. *CPC*

Taipei Metro System

The Operation Control Centre of Taipei Metro Beats AI with Compassion and Flexibility

The prospect of artificial intelligence is booming with promises. But the logical reasoning defined by computer programming languages may not be adequate to handle unexpected events. Taipei Metro System aims to collaborate with artificial intelligence to make public transportation safe and provide innovative services to bring convenience and comfort to the passengers. The know-how to achieve this goal is crucial to the future development of Taipei Metro.

Taipei Rapid Transit Corporation (TRTC) developed the city's rapid transit system by studying carefully and modelling the system after the urban rapid transit systems in Singapore and Hong Kong. Twenty-three years have passed. With an average daily ridership of more than 2 million passengers and cumulative ridership of more than 8 billion passengers, Taipei Metro has joined the club of the world's busiest large-scale urban rapid transit systems. In 2015, the mean kilometer between failures (MKBF) of the system reached 4.718 million train-km; in other words, there were on average 2.5 incidents of delays of more than five minutes at any given month (100,000 trips per month). In terms of reliability measured by KMBF, Taipei Metro tops many counterparts around the world, including those with a long-standing operating history. The system is the pride of Taiwan.

Being led through layers of control gates, the operating control centre (OCC) came in sight. The OCC, with its precision display panels and instruments, resembled a NASA mission control centre depicted in movies. Graphs and surveillance footages flashed and blinked on a wall-sized arch-shaped big screen. The picture-in-picture and picture-by-picture display of multiple sources of information indicated close monitoring at different levels. A screen capture of a particular CCTV video image kept everyone in the OCC on their toes. The fan-shaped seating arrangement allowed the OCC staff to effectively watch the operating trains without missing the slightest indication of trouble.

▶ Taipei Rapid Transit Corporation's operating control center.

►Chief Controller is monitoring the entire station through computer screens.

The OCC as the Commander-in-chief of Taipei Metro has the city's veins under control

Commands relating to train dispatching for the entire metro system are decided and sent from the OCC. Hsu Tai-Ming, the Director of the OCC under Train Control Room, explained, "The OCC must be manned constantly with 3 shifts of operators in a 24-hour period. In addition to the centre before our eyes, the automated driverless Wenhu Line has another OCC that is smaller in size and scale," An OCC, be it for a fully automated or semi-automated metro line, undoubtedly plays the role of a commander-in-chief directing the system. Hsu specified that automated trains are not impregnable. When the automated train driving function fails, well-trained station masters of Wenhu Line will step in as an operator of the train.

Hsu Tai-Ming remembered the trips he took, along with other TRTC staff, to Hong Kong and Singapore to study the local subway systems when Taipei Metro was still in its nascent stage of development. The group examined the operation of the local trains, headway control, human resource management, operators' duties, repair, and many other areas of interest. Standard operating procedures (SOPs) were essential. However, no matter how carefully and thoroughly the SOPs were planned and written, new problems emerged when the revenue service began. The procedures had to be repeatedly rewritten to better respond to real-life situations. Manuals, for instance, had to be revised whenever train failures could not be eliminated according to the standard instructions given therein. As of the date, Taipei Metro has more than 131km of service routes and as many as 117 stations. The past failures and experience from yesterday culminate in the smooth-running Taipei Metro we see today.

Taipei Metro has a daily ridership of over two million passengers. The OCC serves as the brain of the metro system. Hsu Tai-Ming explained, "The signals displayed on the OCC control panel are one source of information. Another source comes from station masters and repair teams who report on-site situations back to the OCC through the radio. With updates from the field, the OCC is able to make an informed decision and follow up on the event according to the steps prescribed in the SOPs." Therefore, the OCC puts together all the data and information, processes them, and makes informed decisions in respect to suspending the train service, switching to operations at slow speeds, configuring the signalling system, and so on.

Struck by Typhoon Nari, Taipei Metro Showed Professionalism and Flexibility in Disaster Response

The single most threatening challenge ever faced by Taipei Metro has to be Typhoon Nari that

struck the city from 15th to 17th of September 2001. The rainfall in a single day reached 425mm. Hsu Tai-Ming recalled the day, "I had a day off. Then I got an emergency call asking me to come in to support the rescue effort. Bannan Line was already drowned and gone like a river. The floors of the OCC and Level B4 were light steel frame structures. I went into the machine room trying to salvage something, but the light steel frames were already floating in water." The loss was substantial. 16 train stations (11 stations along Bannan Line and 5 stations along Tamsui Line), Nangang Depot and Heavy Capacity OCC were severely damaged. Despite the TRTC's effort, the unprecedented natural disaster put Taipei Metro out of service not fully resumed until nearly three months later. One conclusion emerged from the disaster: employees are a valuable and reliable resource especially in a time of service stoppage due to major natural disasters when robots and computers are of no use at all. Taipei Metro survived the ravage of the typhoon. Hsu revealed the new measures implemented in the aftermath of the incident, "In the subsequent service extension projects, we constructed 20 flood gates of all types, including radial gates, fuse gates and roller gates, to protect the stations along the new lines. The topographic and land conditions determined which size of the flood gates we could put in. The surveillance, signaling and SMS control are performed through a flood gate computer in the OCC." In the future, computer or robots are tools crucial to the effective management of the OCC. On the other hand, in addition to employment of these tools, Taipei Metro still aims to retain the flexibility and agility that come with human intelligence in responding to situations. The combination of both is the best operation model for Taipei Metro in the era of AI.

Compassion + Innovation - Taipei Metro Expands into Counselling and Advisory Services

The re-definition and valuation of the work performed by the OCC are crucial to the future development of the centre. Hsu said, "The international metro community and related organizations have been watching the development of artificial intelligence with great interest. But AI can take over the repetitive tasks, routine tasks and logical decision-making performed by human only to the extent that its development allows."

If the repetitive tasks can be handed over to AI in the future, the objectives of the duties and responsibilities of the employees will focus on human-oriented services and innovations to respond to challenges. As smart as AI can get, a human touch is irreplaceable. Services delivered with compassion are not AI's strongest suit at this stage of the development. Employees can work on improving the skills on easing the tension among passengers during the wait time, for instance, in the event of a system failure. As the

▶Typhoon Nari caused serious damage to MRT.

technology progresses, the number of employees to be replaced by AI five years or ten years down the road remains unknown at this moment. When most of the ground operation jobs become automated, the redundant control operators may move on to provide advisory services. Hsu said, "The advisory services are growing rapidly at this time. A great percentage of demands comes from China. We also work with Taichung Metro, Taoyuan Metro and Singapore on several projects. In the future, we expect to send our advisors to provide services on-site. As advances in AI technology decreases the need for human labour, we can still work on the advisory services in the field of transportation. I am sure we can do well in that."

Hsu also pointed out that the transportation industries in China, backed by the heavy industries, are experiencing impressive growth. But the country still requires introduction of foreign experience to handle human-oriented dimensions of the operation, including organizational management or ticketing. Language is one competitive edge Taiwan holds in vying for this market. The TRTC has had previous relationships with Xian Subway System and Shenyang Subway System. A project with Qingdao Subway is currently under way.

Staying Relevant in the AI Age: Four Characteristics of a Desired Talent

What are the required qualifications if one wants to join the OCC? According to Hsu, a master's degree or higher is the essential requirement. The TRTC does not specify any restriction in respect to graduate departments or specializations because a candidate will be required to undergo a series of training and selection processes. The OCC is a constant high-pressure environment. One is expected to respond to a situation within 3 to 5 seconds immediately after the report. Therefore, an ideal candidate must be able to handle high-pressure work environment with restraint and clarity of the mind. A qualified OCC person becomes informed of the situation and sends out the instruction in response of the latter in a timely and decisive manner. Furthermore, teamwork is essential to the performance of duties and responsibilities of an OCC operator. Therefore, a candidate must be a team player to fit in the OCC team.

Taipei Metro is committed to a human-oriented operation model. Commenting on the rise of AI, Hsu stated his thoughts, "AI is a programmed logic reasoning tool. The human brain has many limitations. The OCC has developed many system programming languages and databases supporting many aspects of the operation. It is probably okay to consider those as artificial intelligence in its embryonic form." As AI takes over many tasks originally performed by human labour, Taipei Metro will have more resources devoting to passenger services and culture development activities such as seat yielding courtesy and creation of a family-friendly environment. The service innovation may extend to cover background music and introduce many humanistic elements to Taipei Metro, bringing joy to the often dull and bleak system. Hsu emphasised that the true value of the OCC lies in the creation of a public transportation service with compassion. AI can hardly replicate and compete to this end. *CPC*

Current Fervor for Beep to Pay

Ultimate Ways to Tap in the Mobile Payment Market

In an age permeated by beep-to-pay options, consumers can enjoy the convenience by simply tying their smart phones to a credit card or payment system of choice. In the morning, you can beep to pay for your taxi ride to work. At noon, you beep to get your lunch. In a sluggish afternoon when you need an instant energy boost, pay for a cup of coffee at a convenience store with a simple beep. In addition to all these, you can even reserve movie tickets and pay with your smart phone! Consumers no longer need to rummage through the bag for cash or credit cards. Instead, one can simply aim the phone to the screen to complete transactions of many sorts.

A simplified payment process also brings great benefits to the vendors. The technology reduces the likelihood of dealing with fraudulent bills and saves time giving change and signing credit cards receipts. It takes off the pressure from cashiers when faced with long lineups. As many international mobile payment solution providers have made plans to tap into the Taiwanese market, Taiwan vendors are working to make mobile payment options available to their customers in the hope to capitalize on the future opportunities offered by the mobile economy.

Invisible Cost to the Vendors

The convenience of the mobile economy is available to the customers only on the condition that the vendors are willing to invest in mobile payment devices to create a technology-enabled consumer infrastructure. Transactions conducted through contactless payment systems such as Android Pay, Apple Pay and Samsung Pay require point-of-sale (POS) terminals with near field communication (NFC) capability. Approximately 140,000 out of 300,000 POS terminals in Taiwan are NFC-enabled. A POS terminal that is not NFC-enabled processes only traditional magnetic strip payment cards. Samsung Pay has also developed the magnetic secure transmission (MST) allowing a Samsung Pay device to process magnetic strip cards.

The diversification of mobile payment options leads to complicated POS terminal setup and rising maintenance cost. Small vendors need time to understand and adapt to the change and challenges posed to the mobile payment market in Taiwan. Some vendors remain skeptical about the transition not least because of the increasing fixed cost for installation and employee training. Other vendors believe that cash payment is much easier as, with mobile payment systems, the money will not be credited to the vendor until several days
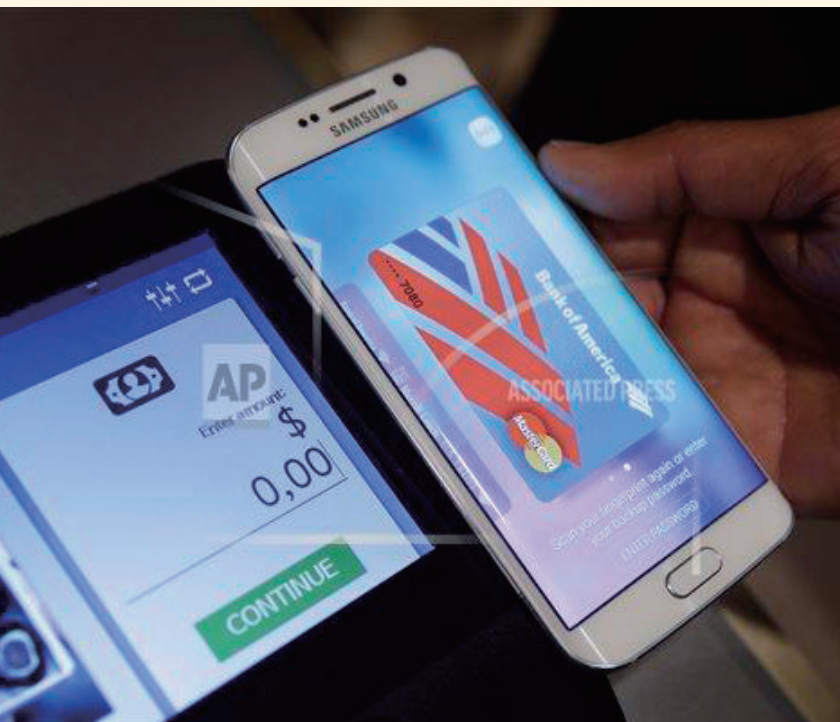
► Three major mobile payment systems, Android Pay, Apple Pay and Samsung Pay, have all been introduced to the Taiwan market. The arrival of these solutions gives rise to a general interest in mobile payment.

after the transaction occurs. Another concern is that vendors will be subject to added percentage transaction fees owing to the mobile payment solution providers and the increasing taxes.

Parties that benefit from a mobile payment system include vendors, credit-card-based fund transfer solution providers (e.g. Visa), banks, and mobile payment solution providers. The system must have a large user base to generate earnings as the revenue will be distributed amongst many players in the system. It is possible to conclude that the availability of mobile payment services depends on the consumers currently showing a wait-and-see attitude and vendors wishing to test the water to shed the doubts and misgivings about the new service.

Understanding the Consumer Behavior

New payment system options are introduced to the market over time as the breakthroughs in mobile technologies occur on a continual basis. Vendors and banks must stay innovative and adaptable as new consumer tools become available. But the challenge does not stop there. A wide array of payment options gives rise to new consumer behavior and generates a largely invisible but tremendous amount of data relating to personal consumption. The big data about Taiwanese mobile payment users is not directly accessible by vendors despite the fact that many mobile payment solution providers do offer

customer consumption pattern analysis and marketing event as features to the vendors that use as reference to facilitate sale. The limited availability of the data cripples the vendors' ability to understand and control consumer behavior. Therefore, the adaption to a mobile-payment-enabled economy involves more than a process of technological transformation to meet the latest technical requirements. An understanding of an operating model that conveys profitability is also essential.

Safety First

Innovative payment applications also create opportunities for growth in sale and revenue. Take long line-ups at the checkouts during the peak hours in a supermarket for example. Some people are deterred by the wait and unwilling to spend half an hour in a lineup for the cashier to ring out a carton of eggs. They may move on to another store and become a lost customer to the vendor. A vendor that keeps customers waiting for checkout may lose the customers forever after several unpleasant experiences. Mobile payment allows the vendors to accept payment from customers all the time, making the shopping experience easier and more efficient. Customers can place the order quickly, anytime and anywhere.

However, safety must be placed before anything, including a speedy transaction. Customers cannot enjoy the convenience of a payment tool in absence of safety. Therefore, all mobile payment solutions are subject to professional reviews for safety and security by the Financial Supervisory Commission (FSC), mobile payment solution providers and financial institutions before introduction to Taiwan. The mobile payment solution providers and banks conduct countless tests on any FSC-approved mobile payment system before introducing it to the market.

The current mobile payment market flourishes with the launch of a wide range of mobile payment solutions that make consumers' experience much easier and user-friendly. Despite the cost incurred to the vendors, all parties in the marketplace are expected to get on the bandwagon of mobile payment before being withered away to irrelevance. **CPC**

Taishin Bank

3 Pay + 1 Pay - Diligent Players Raking in the Chips from the Mobile Economy

The global mobile payment wars are heating up. The domestic financial institutions are all geared up and get a foot in the door to capitalize the promise of boundless opportunities offered by the mobile payment revolution. Among the aspirants to harness the market potential, Shih Hsiao-Ping of Taishin Bank has been actively engaged in strategic and resource allocation. "In adopting to the emerging consumer behavior, we can and we will do better and faster," said Shih. The bank will ensure the front-end payment processors are compatible with international mobile payment services. Contactless point of sale (POS) terminals will be installed in as many brick-and-mortar retail stores as possible for the customers' convenience.

Taishin Bank will spare no effort to secure its position as the payment processing partner of Apple Pay, the game changer in the mobile payment market. Since September last year, immediately following the FSC's announcement to accept applications, the bank has successfully gone through the application process with no delay and become the first domestic bank officially approved to provide payment processing services for Apple Pay

Taishin Launches Its Own Mobile Payment System Amid a Turf War

Needless to say, Apple Pay is not the only mobile payment service providers active on the market. Samsung Pay, a leading mobile payment service provider, is now available in 15 countries with more than 900 partner banks. The service has extended to cover many corners around the world. Taiwan is the 16th country to which consumers can access Samsung Pay. Commenting on the process of forming a partnership with Samsung, Shih said, "We worked with Apple Pay before the talk with Samsung Pay began. We had the know-how to link accounts to mobile payment solutions when Samsung Pay subsequently entered Taiwan."

Android Pay officially launched in Taiwan on June 1. Similar to Apple Pay, all brick-and-mortar merchants with NFC-enabled POS terminals support Android Pay. Android Pay uses the market-leading services offered by Google as a leverage to promote the mobile wallet. One of the features include an app consolidating all store loyalty cards issued by retail companies that support Android Pay into the smart phone and allowing the consumers to better manage reward points. The app even integrates the Google Map, through which the phone automatically reminds the user of the loyalty membership when the
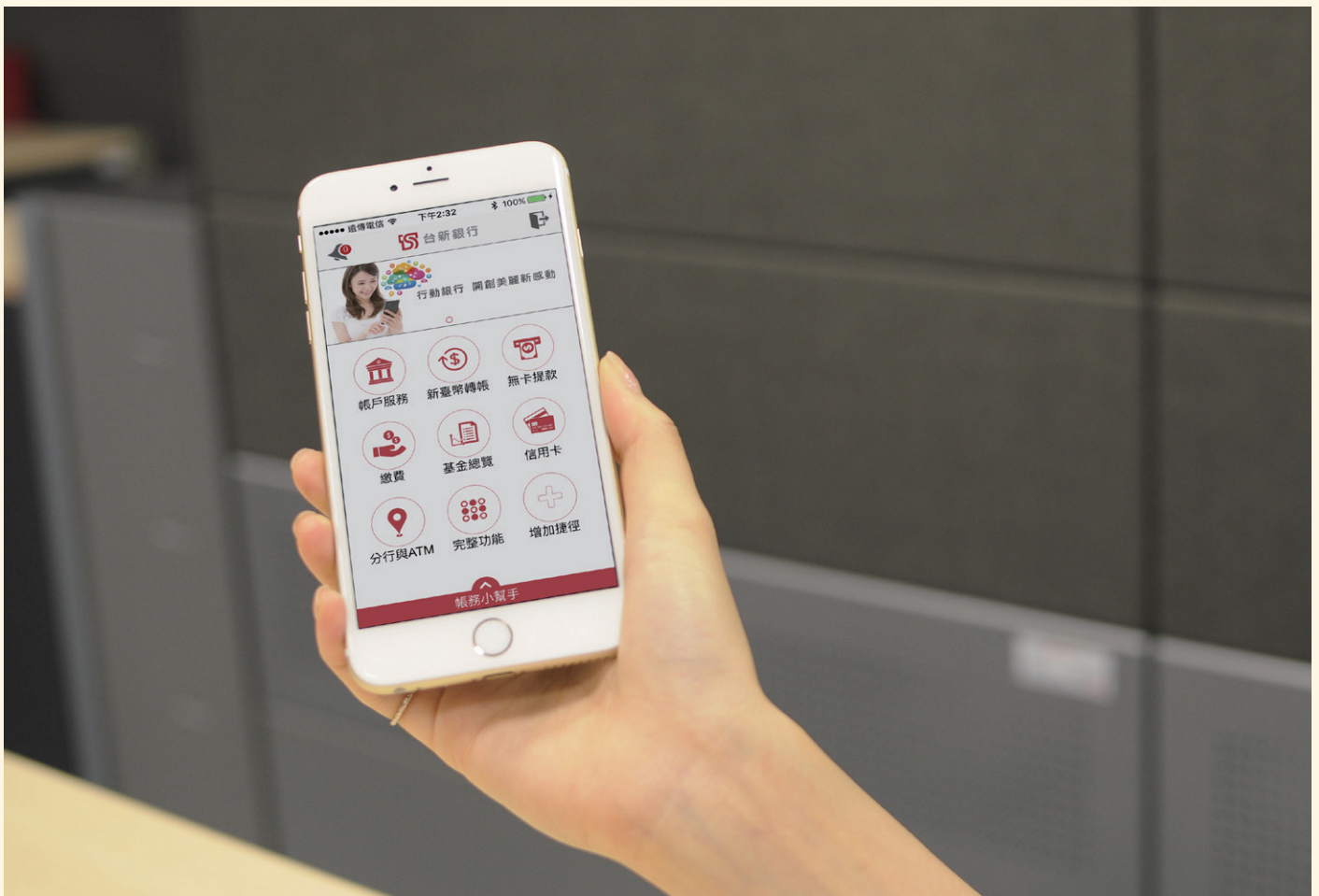
► Taishin Bank geared up to secure its position in the mobile payment market.

person walks into a corresponding physical store.

"Three Pay's" go out of their way to win over customers in a heated turf war. Shih Hsiao-Ping, in addition to providing a detailed analysis of the features and benefits of each mobile payment option, took the opportunity to remind the interviewer that Taishin Bank, a long-standing and very qualified player in mobile payment, has launched the mobile wallet app, LETSPAY, as early as 2016. Users can complete the payment transactions in partner stores by tapping the device. LETSPAY has many exclusive offers

available only to its users from time to time. Users can skip the line-ups at checkout counters in partner hospitals and split bills with friends. Many more features and surprises are available and waiting to be explored.

What's more, Taishin Bank has extended its mobile wallet service to Korea by partnering up with Hana Bank. This year on, LETSPAY users can pay for shopping using the app in Korea and enjoy many special offers. PAY +, an enhanced mobile wallet by Taishin Bank, is set to launch in June or July this year. Users of the new app

are provided with a virtual account linked to the mobile wallet along with the user-designated credit card. Perhaps the greatest advantage of the new app is that it links to credit cards issued by Taishin Bank and other financial institutions. Consumers will benefit greatly from the removal of institution-specific limitation.

Cross-industry Cooperation and Integration of Virtual and Physical Networks

A survey conducted by 451 Research reveals that close to 40 percent of smart device users still have questions about how secure mobile payments really are. In response to the concern, Taishin Bank works closely with the Payment Service Provider TSM (PSP TSM) to streamline the process of credit card application and linking to a mobile wallet. Through PSP TSM, a user's credit card credentials are securely downloaded over the air and stored onto the secure element in the user's smart phone. The technology enables a higher level of security for payment transactions and allows consumers to shop with more confidence.

For the arrival of mobile payments, there is certain level of expectation and excitement on the consumers' end. What do the physical retail stores think of the trend?

Mobile wallet providers must walk hand-in-hand with partner stores through the transition period to make the service relevant and successful. Taishin Bank partners up with Shin Kong Mitsukoshi Department Store, RT-Mart, Family Mart, PX Mart, Mr. Brown Café and TKEC to launch the mobile payment service in more than 100,000 shops and stores. Mobile wallet users that have a linked account will be able to check out with their phones when they shop in these locations.

"For shops that already have a POS terminal, it does not take much work to convince them to add mobile payment as an in-store payment option. On the other hand, the traditionally cash-only vendors are anxious about adopting a new payment model. But we have been very active in promoting the service. Many vendors have expressed their interest in working with us. The truth is, the convenience of mobile payment will bring in more customers. An expanded clientele, why not?" explained Shih Hsiao-Ping. *CPC*

Facebook Under the Heat

Moderation Guidelines Leaked
Intricate Decision-making Moment for Zuckerberg

In May this year (2017), the Guardian, a British newspaper, leaked internal rulebooks from Facebook, revealing the guidelines and policies of the social media giant uses to moderate the content shared on its platform. The leak has unleashed a series of heated public debates. Some critics believe the moderation rules are ambiguous and opaque. Some others think Facebook is not doing enough to keep control of its content. Spending time on Facebook has become an essential part of the daily routine for people living in the digital age. Many use the social network as the primary source of news and information. Among the plethora of information circulating on Facebook at any one time are contentious ideas and expressions such as fake news, sexual content, violence, hate speech, and live-streaming videos of murders. Allowing such content poses a threat to the safety of the community users. But what qualifies as sufficient actions to tackle dangerous content but does not alarm free speech advocates concerned about censorship? Social media companies often find themselves in a muddle when comes to content control.

To Remove or Not to Remove, a Difficult Question Even for a Robot

Facebook, as the world's largest social networking service provider and the quintessential player of the platform economy, has more than 1.8 billion users, exceeding the population of China. The user-generated content on the site include posts, pictures, videos, and live-streaming videos through which the world unravels to users at their fingertips as users are connected to a large network of information. As a matter of fact, the platform economy flourishes on indiscriminate openness and accessibility

►Facebook, with its video-streaming features, has become one of the primary tools for people to catch up on the lives of family and friends.

to people from all walks of lives and contents of all variety. Diversity and opulence of the user-generated content not only attract users to read and share but also encourage them to contribute more content, thereby helping the platform grow. But in addition to matching demand and supply for the use of information, a social networking platform is required to police the site for inappropriate or offensive content. Content moderation may reduce the information flow and increase the cost. However, a hands-free approach means rampant dissemination of venomous material and provision of a haven for heinous acts preying on users. The platform that adopts this approach will invite public denunciation and, in the worse scenario, face legal consequences. Social media facilitates the formation of many echo chambers inside which ideas or beliefs reverberate in the online enclosure. Specific ideas or radical discourses are likely to be reinforced by communication and repetition inside a community of like-minded people. Ill-intended people may systematically exploit the echo chamber effect in the online communities for their own purposes and to the detriment of the society.

Facebook constantly takes the heat for its content moderation process. The social media company faces censure for delay or failure to remove inappropriate content, as well as removal of content that should not have been removed. In April this year, an American man from Ohio live-streamed himself randomly shooting elderly people on the street. The video was later deleted, but Facebook was criticized for failing to react swiftly to the episode. In contrast, Facebook removed from its website last year the iconic Vietnam war photo, the Napalm Girl, that shows a naked child fleeing for her life. The deleted photo was later restored but criticism against Facebook for excessive censorship continued. The sheer amount of content generated by such a large user base makes moderation extremely challenging. In addition to hiring a large staff of moderators to review the contents shared on the site, the cash-rich and technically advanced social networking platform may develop AI-assisted content police. But the decision between removing and allowing "inappropriate" content is not always so clear-cut. The boundaries are often blurred with a lot of grey areas in between. As smart as a robot may be, handing out a decision based on the facts and criteria, an interpretation of the general context (big picture), and compassion for people is beyond its design.

Cost and Challenge in Respect of Moderation

Social networking platform services often require users to agree to a rule of conduct and terms of use in the form of a Terms of Service (TOS). Users are obliged to comply with the TOS as soon as they sign on the service. Take Facebook as an example. If an user complains, "How can you delete my post without asking for my permission?", Facebook can simply make a curt reply, "It is all in the agreement you signed." Facebook's terms and policies, including the Statement of Rights and Responsibilities and the Community Standards, are available on its website. Article 3 of the Statement of Rights and Responsibilities require users to refrain from posting content that is hate speech, threatening, or pornographic; nor should it incite violence or contain nudity and graphic violence. The users agree not to use Facebook to

do anything unlawful, misleading, malicious, or discriminatory. Facilitation or encouragement of any violation of Facebook Statement of Rights and Responsibilities and the applicable policies by users is also prohibited. Furthermore, Article 5 of the Statement gives Facebook the right to remove any content or information an user posts if Facebook believes that it violates the Statement or the website's policies. Article 14 of the Statement authorizes termination of part of all the services to an user when the user violates the letter or the spirit of the Statement, or otherwise creates risk or possible legal exposure for Facebook.

Content moderation is a costly pursuit. Social networking service providers always hope to stay clear of the need to police the content and information posted on their websites even though almost all providers use the user agreement to give themselves right to perform content moderation. The social media companies mostly follow a hands-off approach when platform is in its nascent stage of development. The lax attitude stems from the concern of finding the company in a presumed position of power and responsibility in respect to content moderation if the company does show any inclination to regulate the user-generated content on its website. The platform providers may take actions to tackle inappropriate material to fulfill their commitment to self-regulatory schemes and corporate social responsibility; however, they prefer a model giving them the rights but not the responsibility for the material. In the most ideal scenario, the platforms have the power to monitor, review, delete the content and information created and shared by users but are not responsible for the outcome of their

action and inaction in respect to such control. However ideal as it may be, social networking service providers are ultimately subject to public criticism and government regulations. Removal of user-generated content alarms the free speech advocates about censorship, creative freedom and digital human right violations. Allowing inappropriate material increases the risk of exposure to denunciation of the platform as an accomplice aiding the criminals or joint responsibility for an user's action should the platform's permissive attitude leads to an event threatening the safety of the community.

In response to the current challenges, platform providers are expected to adopt a realistic approach by establishing content moderation criteria that are legal, proportional, and openly accessible by anyone who wishes to understand and provide feedback on possible improvement options. There must be a procedure for an user whose content is deleted to appeal the decision and, if successful, restore the deleted material. The moderation criteria will be susceptible to controversies of all sorts nonetheless. For instance, a content policy usually specifies that material judged to be ex facie illegal be immediately removed. In this light, live-streaming videos of murders and killings are prohibited outright. However, in a situation where a victim of crime live-streams a video of shooting a break-and-enter robber out of self-defence, and in which case the video sends out a signal for emergency assistance and serves as the evidence supporting justification for the criminal conduct, it is nearly impossible for the platform to discern and acknowledge the extraordinary circumstance and react accordingly as the event occurs. *CPC*

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