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June, 2016
Rethinking Customers From the Beginning – Moving Toward Productivity 4.0

Text by Dr. Chang Pao-cheng, President of the China Productivity Center and the Learning and Development (Nengli) Magazine

Recently, I led a group visiting businesses in Germany to learn how these businesses are putting into practice Industry 4.0. Observing Porsche’s elegant production line, each step of the process feeds into the others to create a superior environment for production that is person-centered, rapidly responsive, and customizable to customer requirements. The line’s operational considerations of production management start from the needs of the end user and provide a superior and humanized work area to optimize production efficiency. Another company is Germany’s largest supplier of business applications and ERP software: SAP. SAP uses big data to analyze soccer players’ lifestyles, physiological data, match performance, fatigue, and other indicators. It provides soccer coaches with these comprehensive physical performance reports to use as a reference when assigning players to different positions or replacing them during play. Not only does such scientific data management allow players to perform at their peak level, but it also protects them by helping them avoid injury from overexertion. The software provider SAP also embodies a type of efficiency that takes people first, responds quickly, and customizes products for the needs of customers.

Pay Close Attention to the Transition from Product to User Experience

Both of these case studies show that Industry 4.0 differs from reforms of the past in that it moves the focus from the process of producing products to the user’s experience of using the product, even identifying needs or demand that customers have difficulty discovering themselves. That is to say, regardless of whether we’re talking about manufacturing, commercial services, or agriculture, all businesses must orient their operational paradigm toward end-users’ requirements for value as their first consideration and then provide customized, rapidly-adapting products and services.

Nevertheless, today many businesses misunderstand Industry 4.0 as simply meaning buying a bunch of industrial robots to replace human labor or having to invest a great amount of capital and time to completely convert the factory over to smart automated production. Falling into this myth is falling into linear thinking and will cause one to worry that his or her resources are insufficient; thus unsure, he or she will hesitate and miss the opportunity to build the company’s ability to respond rapidly or forecast market upgrades and transformations—truly a shame. I think back to the 1980’s, when the China Productivity Center was guiding companies through automation, and we were busting the same myth. Throughout every process of change, it is certainly not necessary to upgrade all hardware equipment and systems; the key is to look at the requirements of the change from the perspective of improving management. For B2B tool manufacturers, at the same time as selling their products to auto manufacturers, upgrading their own manufacturer “to B” perspective “to C” and thinking about end-user experience to find areas for design improvement is the first step toward 4.0. Textile mills are another example: how can they meet consumers’ varied demands and create a differentiated and customized apparel experience for them? This is the first step in thought toward 4.0. We simply must understand that we cannot achieve Industry 4.0 just by single-mindedly pursuing big data, the internet, and
robots—this is a myth we must break. Only by considering the end users in the market first can there be demand for smart factories and smart services.

**Self-Evaluate Before Leading Into Automation**

The Executive Yuan approved the “Productivity 4.0” development plan in September 2015 in order to come into line with international developments. In order to assist the small- and medium-sized businesses of Taiwan in following the Productivity 4.0 plan, the China Productivity Center is currently developing a set of comprehensive indicators and measures for use in evaluating enhancement of production capacity in manufacturing, commercial, service, and agricultural industries. We hope to assist businesses in Taiwan to begin with a correct understanding and to systematically introduce solutions for adjusting the companies to these concepts. We hope to thereby effectively come into line with the rest of the world and increase our competitiveness. The following three suggestions are items to remember as this article concludes: 1) For most small- and medium-sized businesses, Productivity 4.0 is still a new concept, and we suggest that relevant government bodies, legal persons, and associations should use appropriate methods to continuously transmit the development concept of Productivity 4.0 to civilian businesses. 2) Companies should evaluate themselves according to their current level of ability and use effective tools and standards to precisely clarify the level of their own business operations. 3) The process of increasing production capability should be considered comprehensively so that every part can fit together into an integrated solution.
The Humanistic Spirit of Productivity 4.0

Text by Huang Li-qi

Since May of last year, searches for “Productivity 4.0” have, according to Google Trends, been climbing every month, and the popularity of the search term has not yet decreased. Why? Because of many factors including the ongoing lethargy of the world economy, the saturation of Taiwan’s export market and over-concentration of products, and the slowness of Taiwan’s upgrading of industry, businesses and citizens are all expecting the government to come up with a good plan to stimulate the economy. Also, Taiwan’s population of workers (those aged 15 – 64) will continuously drop after reaching a peak in 2015, and this could produce a production crisis in the future. In preparation for this turning point, the government of Taiwan (ROC) is developing cyber-physical systems through Productivity 4.0 to spur on cross-disciplinary level of cooperation that spans vertically across service, sales, and production. It is also following the lead of the spirit of Germany’s “Industry 4.0” to create a high-quality employment environment that puts people first and promotes industrial innovation and transformation.

Productivity 4.0 uses technology like the worldwide web, the internet of things, smart robots, and big data to encourage a change in economic patterns, to transform from the “product” centric mass-production commercial model of the past to a new service centric model of concentrated brainpower and production of small amounts of a variety of products or a variety of products in small amounts. In other words, in a world where economic languidness is the new normal, the amounts that consumers can spend are continuously decreasing and will eventually reach a point where spending will be equal to income. Cautious consumers will cause businesses to gradually adopt a marketing tactic of providing free products and charging for service in order to stimulate consumption.

Although technology appears to drive Productivity 4.0, it’s more important not to overlook the humanistic spirit behind it. As businesses march into the new era of smart network innovation, they cannot just pay attention to technical marvels like big data, internet plus, robotics, 3D printing, and artificial intelligence that cause unease in people’s minds; more importantly, they must consider how to tap into the emotional needs deep within customers’ hearts.

Taiwan Colour & Imaging Technology Corporation (TCIT), which we visit and interview in this issue, applies recognition and video analysis technology to the analysis of customer actions, providing customer-level information such as sex, age, and anonymous identification such as movement tracing, and stopping times and browsing times. Through such analysis and measurement, the company helps businesses to learn about customer needs and provides those in the retail business a more accurate way to serve and meet the needs of customers. But, this advanced technology relies on specialized and perspicacious research personnel. Therefore, TCIT views talent as a treasure, and lets its staff find their own areas of excellence and areas where they can best contribute value in order to attract people who like to innovate and think deeply. TCIT may be burning up money every day during its early stage of development, but without regret; the investment has resulted in earning TCIT’s facial recognition technology an important place in the world.

Hiir, Inc., is another company in this issue. Today, when so many apps are competing for attention, most of them boast that they can help to formulate sales strategies and greatly increase the precision of sales activities through analysis of customer behavior using the large amounts of data they have collected from customer contact and accumulated in
the cloud. However, the problem is that big data cannot answer the question of whether customers will be moved by these measures. To this end, Hiiir has established a department with designers at the core that also includes visual designers, user interface/experience designers, data analysts, development engineers, product managers, sales personnel, and content editors. The department focuses on innovative service design to develop a new kind of commercial model and then consider what kinds of new products and services the new model may generate. Most importantly, the department uses the combined talents of the team to develop new features in the subtle functions of the user interface to provide users with an appropriate digital service.
Beat the Robots, Generate Greater Productivity for a Lower Cost,

Transforming into the Key Human Resources of Productivity 4.0

A study by BCG reports that by 2030 the maturation of robotics, artificial intelligence, and automated production will cause a gaping shortage of high-skilled workers in developed countries paired with a surplus of low-skilled workers. Therefore, how to transform themselves into production process designers, decision-makers—and even managers—who can achieve more productivity for a lower cost is a challenge that no worker can avoid.

Text by Huang Li-qiu

At the automated factory of Rethink Robotics, established by Rodney Brooks, founder of iRobot, the operation of production robots does not depend on programming language of engineers. Instead, workers on the production line teach the robots how to complete tasks directly. What is more, the production line workers need only one hour of training to learn how to teach their robotic co-workers. After learning, the robots can remove simple production obstructions and ensure the smooth operation of the conveyor belt and assembly line, leaving operations personnel free to adjust the production line according to customers' orders and create stable profit for the company. This description of factory automation comes from the book *The Second Machine Age*, an example of humans and machines working together in a quality work environment.

Ever since the Ford Motor Company’s introduction of the assembly line in 1908 spurred on the automated assembly line production model, the trend toward robotic replacement of human labor has become increasingly clear. For example, in 2012 Amazon acquired the technology of the Kiva robot, designed specifically for carrying out product selection for customer orders in warehouses. According to CNN reports, hundreds of Kiva robots, controlled by information systems, can use artificial intelligence to identify products by frequency of request, weight, shelf location, and personnel position and accurately shuttle them back and forth at Amazon’s sprawling logistics centers. With the help of its robot army, Amazon produced an annual turnover of over US$421 billion, over three times the GDP of a few small African countries. Unwilling to let Amazon keep the limelight, Japan’s Canon announced that it was planning to fully automate production at four of its factories in Japan by 2018 in order to lower costs. The world’s largest contract manufacturer, Foxconn, also announced early that it would replace human labor with over a million robots to increase production efficiency.

A New Wave of Competition in the Manufacturing Industry

In response to the dual pressures of aging leading to a shrinking workforce and intensifying competition among global manufacturers, many countries are seeking to ensure the competitiveness of their industries or businesses by actively promoting smart automation and strengthening their use of smart robots, the internet of things, and big data. At the 2011 Hannover Messe (exhibition), Germany introduced Industry 4.0, a concept centered around establishing cyber-physical systems (CPS) and smart factories. Development of Germany’s Industry 4.0 opened up a new wave of global manufacturing competition. According to PricewaterhouseCoopers, 235 German companies in industries such as manufacturing and engineering, automobiles, processing, electronics and electrical systems, and data and communications are implementing Industry 4.0. The survey “The
Industrial Internet,”^1 reports that the CEOs interviewed will on average invest 3.3% of annual turnover in the next five years companies that can provide Industry 4.0 solutions, using strategic alliances to enhance their own competitiveness. The order of investment priorities is 1) digitalization of value chains; 2) product development/engineering and design; 3) Production/manufacturing; 4) service; and 5) distribution. The reasoning behind this is to meet customer demand for “small quantities of many varieties” or “many varieties of small amounts” of products and, through linking the many functionalities of value chains and digitizing them, achieving digital ordering, development of customized products, automated transmission of product information, and previously linked production control and production systems, and then to take a further step to integrate all these elements with customer service. The ultimate goal is complete horizontal integration including inventory, supplier-provided production plan data, customers, and other partners in the value chain.

According to the report, the goals of increased efficiency and lower costs can only be achieved when a value chain achieves complete horizontal and vertical digitalization. The goal of so-called “horizontalization” is to increase customer satisfaction by coordination and optimization around customers and the efficiency of the company and its suppliers in purchasing, manufacture, logistics, and production control. The goal of vertical integration is to create optimized production systems, prevent system failures, establish a good analysis capability to increase product quality and flexibility, and to lower costs.

In addition to Germany’s Industry 4.0, the United States is launching a reindustrialization (AMP)^2 plan to guide the return of the manufacturing industry to the United States through 3D printing, big data manufacturing systems, and advanced robotics. Japan, meanwhile, is combining its superior robotics technology with the Internet to promote the factory of the future where people and machines coexist and work together harmoniously. South Korea is using information and communications technology, the internet, and robotics technology to develop the smart factory of the next century and is actively promoting Daegu as the center of its robotics industry. As for mainland China’s implementation of “development of high-end equipment manufacturing” from the twelfth five-year plan, it is actively developing equipment for robotic automated production and on-site large-scale assembly work as well as high-end equipment such as robot parts/modules.

Pulling Force + Pushing Force: A Special Formula for Upgrading

The vicissitudes of the world economy—the slowing of mainland China’s growth, Japan’s implementation of negative interest rates, the imminent possibility of the European Central Bank loosening monetary policy—clearly show that this year the global economic environment is just as dangerous as ever. Even though the state of the global economy is due to weakening external demand, the slowing of economic growth also reflects medium- and long-term structural problems in Taiwan’s economy such as the over-concentration of exports and lack of industrial upgrading. In general, the whole world hopes to actively develop smart technology to increase its pulling force to mitigate the pushing force of the progressive reduction available labor. On the other hand, after their manufacturing has already adapted to automation, mass production, and globalization, the major countries of the world are all actively

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^1 Maybe referring to the following: http://www.strategyand.pwc.com/reports/industry-4-0
^2 This reference seems to be addressing an amalgamation of reports and concepts as one. The closest references I can find are that AMP might be referring to the Advanced Manufacturing Partnership. See https://www.whitehouse.gov/the-press-office/2014/10/27/fact-sheet-president-obama-announces-new-actions-further-strengthen-us-m

which refers to the report “Accelerating U.S. Advanced Manufacturing” as “[t]he final AMP.”

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promoting network construction, implementation of smart manufacturing, production, and sales as a quick response and forecasting system.

In view of this, the government is organizing the relevant departments and commissions to create a quality work environment for the cooperation of humans and machines by leveraging advantages in industrial technology and thereby facilitate the movement of industry from Productivity 1.0 (labor-intensive), Productivity 2.0 (technology-intensive), and Productivity 3.0 (knowledge-intensive) on to Productivity 4.0 (“smart” systems and technology-intensive). The plan prioritizes the transformation of the electronic information, “metal transport tools,” mechanical equipment, food manufacturing, textile, logistics, and retail industries as well as the flagship agricultural industry to strengthen the international competitiveness of Taiwanese industry.

Because of changes in the nature of production across the global manufacturing industry and a large quantity of customer-specific requirements, companies must rely on smart robotics to satisfy orders for more varied products with short lifecycles. They must frequently change production lines to meet requirements and use a huge amount of data to analyze information and move toward a manufacturing of predictive production in order to add more value and productivity to the industry. Yet, the domestic industrial sector is largely composed of individuals and small- and medium-businesses that still need to coordinate and combine their ability to increase production efficiency through automation. Currently, they must rely on imports for key robotic components, leading to a high implementation cost and making it difficult to come completely in line with new production models.

Data show that there are around a hundred domestic firms involved in the industrial robotics industry (including parts, systems integration, and trade agencies) with an output value of NT$46 billion and about 30 domestic firms involved in the service robot industry (including components) with an output value of NT$6-7 billion. Compared with Japan, mainland China, and South Korea, Taiwanese businesses are not suited to go it alone; they must fight together to flexibly meet market demands and cumulatively carry out customized systems integration to start to build an innovative operational model that can be replicated and spread to bring about industrial advancement.

Operators Promoted to Managers

Taking a broad view, the human resource requirements of Productivity 4.0 are going to be totally different from those of the past, at every stage of industrial production and at every level of personnel, especially requirements relating to the transformation of core industrial technology and cross-disciplinary integrative thinking. In his TED talk “The Workforce Crisis of 2030 – and How to Start Solving It Now,” Boston Consulting Group Senior Partner and Managing Director Rainer Strack says that technology will replace many jobs and gives the example of the auto industry: “In 1980, less than 10 percent of the production cost of a car was caused by electronic parts…, [but] it will grow to more than 50 percent by 2030. And these new electronic parts and applications require new skills…, [for example, those of] the cognitive systems engineer who optimizes the interaction between driver[s] and electronic system[s].” This implies that the imbalance of labor skills will intensify. Surveys by BGC also show that by 2030 Brazil, Russia, and China will all face labor shortages. Thus, how to jump from a workforce of laborers to an upgraded workforce of production process designers, decision makers, and even managers in order to avoid replacement by robots, artificial intelligence, big data, or automation has become a critical challenge facing governments and

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3 Transcript available at https://www.ted.com/talks/rainer_strack_the_surprising_workforce_crisis_of_2030_and_how_to_start_solving_it_now/transcript?language=en#t-470121
businesses. In this issue, scholars and entrepreneurs share how to “beat the robots,” “generate greater productivity for a lower Cost,” and “transform into the key human resources of Productivity 4.0.”
Participation, Innovation, Sharing: The Product 4.0 Strategy of Smart Innovation

Wanting to defeat collective wisdom through individual effort is like trying to break a rock with an egg: it cannot succeed. Companies can only succeed if they join one of the two innovation ecosystems that are currently forming.

In 2011, the well-known U.S. glassware company Corning issued the video A Day Made of Glass. The video used an exciting story to give us a view of the magic of technology and stimulate imagination about the wonderful life of the future. In that enticing world, screens are omnipresent, and information can be retrieved anytime and anyplace; receiving or sending information is as easy as a wave of the hand. With a gesture, a traffic map is sent from a mobile phone to a car’s instrument panel, and with a pinch the recipe for Sichuan spicy boiled fish is transmitted from a tablet to the screen on the cupboard.

With such rapid progress in information technology such as touch interfaces, wireless broadband, and cloud computing, the 4.0 Era of smart technology has already arrived, and humans’ methods of communication have undergone profound change. Ubiquitous displays have become the primary communication tools between people, and not only at home and work. Screens are everywhere: in the restaurant, at the market, in hotels, hospitals, and beauty parlors. Behind the glass is the great computing power of the smart cloud, gathering and displaying things that people like and helping them to enjoy their lives and manage their work. In the near future, we’ll be able to turn a whole glass wall into a screen: monitors of extreme dimensions could be the blackboard teachers use or the interactive board for telemedicine. It could even be the informational wall through which the zoo displays Jurassic dinosaurs.

Cornell is only a glassware company, after all, so the 4.0 world they describe has its limits. Still, even if that seems unbelievable to us, if you add in all the other elements pushing technology forward, the world of the future seems ever more like a science fiction movie: consider Tesla CEO Elon Musk’s SpaceX Mars colonization plan, or Google X’s list of 100 shoot-for-the-stars ideas—among them a space elevator! The only plausible prediction is that countless more marvelous technologies await us in the near future, in addition to those the media already frequently reports such as self-driving cars, robots, 3D printing, the automation of knowledge work, and virtual reality. Think, it’s just like reading an exciting novel. Innovation stems from endless collision and evolution. When various kinds of technology stimulate each other and merge, numerous 4.0 products and services that significantly change human life will be developed and behind these developments will be the Intelligent Network that connects everything.

The time will come when information can be transmitted even more rapidly between people, between people and machines, and between machines, which will help to promote the linking together, mixing, and integration of knowledge and information. Imagine, for a moment, this new age of so much new and varied information: if this is humanity’s second Renaissance, the second great explosion of knowledge in history, what new types of culture and technological innovation will the smart internet bring? That is precisely the thread of
development that we most want to explore.

A Free-for-all Open Innovation Ecosystem

What about the second Renaissance is different from the first? The first renaissance was driven by aristocratic families and centered around literature, painting, and architecture. It was comparatively limited in scope and manifested in isolated points of creativity. The creative power was concentrated among a minority of elites and was principally manifested through the literary and artistic masters like Dante, Boccaccio, Shakespeare, Da Vinci, Michelangelo, and Raphael. The second Renaissance of our imagination, on the other hand, is in the form of a collective linked together by the internet to collaborate and create together, where innovators can emerge from the masses of common people just as well as from the high-level elite.

Renaissance Europe produced many resplendent cultural treasures. Perhaps the second explosion of human knowledge we await will promote the development of a cross-regional and cross-disciplinary global culture and technology that will achieve a better sort of lifestyle for humanity? The answer lies with each small and seemingly unimportant person.

Humanism was the core spirit of the Renaissance and held that the evolution of culture should be centered around humanity and not God. It affirmed the value and dignity of human beings. It proclaimed that the purpose of life was to seek out happiness in mortal life and advocated the liberation of the personality while opposing ignorant and superstitious theological thought. It held that humans are the creators and masters of their lives.

Even though the center of the second Renaissance may well be technology, the principal idea of people-first cannot be overlooked. Thus, as businesses advance into the innovative era of the smart internet, they cannot pay attention solely to Internet Plus, robots, 3D printing, artificial intelligence, or any of the other technological miracles that cause turmoil in people’s minds. They must at the same time consider originality in “software” such as music, literature, art, and religion. This is because pure technology by itself is rational and rigid, incapable of resonating with customers’ deepest emotional aspirations. Perhaps the recent fad of everyone talking about big data is a necessary step, but if it takes a wrong turn and becomes unfair, then a superstitious “big data” could be just as unacceptable as a god of superstition. Focusing only on rationality at the expense of emotion is just as flavorless as eating a meal without any garnish.

Evolving from Isolation Toward Openness

If innovation cannot rely solely on big data, then by what means should a business carry out development of products and services? The key is to possess an attitude of openness and inclusiveness: widely incorporating the limitless resources and powers of the smart internet, linking together the knowledge and unique ways of thinking across different fields, and facilitating the evolution of the company’s innovative ecosystem from isolation to openness. Find ways to bring in novel ways of creative thinking from outside the company, and allow the creative power both within and without the company to fuse into one creative power to together create a wonderful innovative experience for customers.

Taiwan Semiconductor Manufacturing Company’s (TSMC) chairman Morris Chang explained his thinking in the Economic Daily News, “In the current environment of so many different types of and such comprehensive competition, the competition originally purely among products has expanded into a competition among industrial ecosystems. Therefore, products themselves can no longer be relied on to gain a market advantage; instead, the only key to victory is to create a complete industrial ecosystem.”

The Open Innovation Platform (OIP) TSMC
established in 2008 is Morris Chang’s most important strategic fixture. It is the most important weapon to win against the great competitive strength of Samsung. OIP is to TSMC as the Apple Store and iTunes are to Apple. When superior products alone cannot win, the only opportunity to defeat competitors is to provide and coordinate a wide variety of customizable products and services. On that basis, TSMC has poured its energies into creating a complete industrial ecosystem to service advanced manufacturing processes. The OIP integrates automated electronics design tools, silicon know-how, and back-end service modules such as packaging and testing to serve multiple companies. Such diversified service would be unachievable by TSMC alone and can only be realized together with its strategic partners. Only through this collaboration can TSMC assist chip design companies to rapidly complete design and production of a product and get it to market, together furthering the collective innovation of every link in the semiconductor supply chain and enabling the whole industry to create and share even greater value.

Classmate Xiaoming: Inspiration for the Mainland Post-95ers

Morris Chang believes that Apple’s most important innovation was not just creating wonder products like iPod, iPhone, or iPad but was the innovation they brought to the user experience. This focus brings customers back to the core of business operations and inspires us to carefully reconsider the keys to Apple’s success: not price, not technology, and certainly not an ability to analyze big data. Apple’s success lies in its ability to design an experience that provides value to customers. It’s not that big data cannot be used, but there must be adherence to a basic principle of “user experience design at the center and big data as a supplement.”

Making customers the core does not mean inquiring of them about everything, nor does it mean price war; rather, it implies a “value war.” Businesses must observe the user experience from an all-new angle, and only then can they create an innovative commercial product like the iPhone. Apple may be considered a model for the product 4.0 development model; achieving that high level of user experience design is truly difficult.

Nevertheless, there are many companies taking the same road as Apple, and TSMC is a leader among them. Of course, not every product can have a 4.0 innovative ecosystem built around it like iTunes or OIP. Most products still mainly provide a single function and cannot combine multiple functions into one device as the iPhone does, serving as a phone, an e-reader, TV, radio, video recorder, camera, notebook, and alarm clock. Still, even if we may be unable to create the same sort of multifaceted innovation ecosystem, we should at least follow in the spirit of open collaboration and prioritizing value for the customer.

After food-industry leader Uni-President entered the mainland China market, the company found it difficult to differentiate its products because of the imitation, replacement, and overtaking strategies of its competitors, resulting in a state of intense price competition that posed a bitter challenge to the company’s sales and profit. In order to extricate itself from this sea of ruthless competition, Uni-President adopted a high-value strategy, starting over its thought process from the ground up to develop a new product that could capture the taste of Chinese consumers and hopefully gain the approval of customers and create a new high-grade product image. Uni-President’s general manager of the China region, Hou Jung-Lung, explains, “We looked closely at our business and saw that it has advantages including research and development, innovative technology, and a good corporate culture. We realized that none of these support a price war, and that was an epiphany; we resolved to go back to what we actually do well.”

The Classmate Xiao Ming Tea that has recently become popular on the mainland is a masterpiece of
Uni-President’s new strategy. This tea beverage with such a colorful personality came on the market in March 2015 and immediately became a hot topic in the market and the media. Using “serious humor and a low-key cold brewing method” as the theme of product design, Uni-President did not emphasize the refreshing or thirst-quenching features of the product but rather created a brand image of more cute, more fun, and more cold as its selling point. It uses the exaggerated expressions and actions of cartoon characters to convey this image, achieving the same successful results as Weili Food’s “Little Sister Xiao Junya” but in a different way.

Classmate Xiaoming was not successful by chance but arose from Uni-President’s conversion of deep insight on target customer value into a unique product concept. Only in this way could Uni-President satisfy the customers’ tastes and catch their attention. Classmate Xiaoming’s target demographic is young people born after 1995 (in mainland China they’re called post-95ers), and Uni-President’s creative team fully utilized Product 4.0 development principles, opening themselves up and entering into the interior world of the target generation and uncovering their distinctive inner thought processes, along the way developing a “seriously humorous” product position.

Before Classmate Xiaoming formally entered the market, Uni-President actively invited post-95ers to participate in the development and evaluation of the product concept to help the development process stay on the right track. After the product came to market, the post-95ers became co-sponsors of “serious humor.” They used blogs, microblogs, WeChat, and other “We media” to react to Classmate Xiaoming’s humorous expressions and motions on his microvideos. The microvideo “Be a little more serious; we’re being funny!” drew hundreds of imitators to post and share videos, achieving a snowball effect of posts that saturated the market.

Only by getting close to the post-95ers demographic, responding to the young people’s desire to express themselves, and grasping their motivation for acting, could Uni-President call on the post-95ers to throw themselves into the Classmate Xiaoming humor movement and contribute their creativity to become partners in brand creation. Humorous movies, humorous posters, humorous packaging, humorous contests—the point of all these different promotions was to change passive consumers into active consumers, to get a peer group to support and inspire each other. Uni-President utilized the leveraging power of “We Media” as a marketing tactic to multiply the results of their efforts and effectively expand the results of brand shaping.

Addressing the Community Maker Movement

Learning, creating, and enjoying together is the standout characteristic of 4.0 consumers. They are no longer a passive group who accepts what is given them but are active “makers.” The costs and skill barriers to consumers’ own creating are becoming lower and lower in the wake of the appearance of interactive communities, smart manufacturing, 3D printing, open-source software, and cheap, available hardware. Further, all these rich resources are open, and many makers are happy to publish their designs and creations: many online communities have sprung up where people share their experiences in the maker movement, and any individual can participate to the degree that suits his or her available skills and time.

The spirit of the maker movement is one of curiosity, fun, interaction, and collective enjoyment that gives normal people a chance to experience the pleasure of design and creation. This spirit drives the creation of creative community platforms that allow makers to display their work and share the intimate details of their creative experience with fellow enthusiasts and thereby create a space where they can create for themselves and interact with and
learn from each other.

Broadly speaking, any scientific, engineering, artistic, or industrial arts project that requires handiwork may match the area of expertise of a maker, to the point that even “Be More Serious, We’re Being Funny!” imitation video clips may be viewed as a rough manifestation of the maker movement. Those videos were created by a half processed and half spontaneous process stimulated by a commercial promotion, so they certainly don’t count as part of the maker movement as it is strictly defined.

The emergence of smart production is one of the principle reasons for the rise of the maker movement. In the past, a production line could only produce one type of product, but Industry 4.0 production is highly flexible and can produce according to the needs of individuals. 3D printing is the most important technology contributing to this flexible production: past production methods were fixed, but now combinations of varied products can be produced by the same smart production systems. As long as consumers can provide a design consistent with basic standards, a factory can rapidly adjust its production line to create completely differentiated products. The pinnacle of Industry 4.0 is rapid, low-cost production, for instance a maker submitting a blueprint for a car in the morning, having the plans transmitted to a smart production service system, and then in the evening having the self-made car personally delivered without human assistance.

The most important condition for ensuring the success of smart creativity is playful creation in a pleasurable environment and passion is the strongest driver of creativity; the world’s largest such fair, Maker Faire, matured in this sort of happy environment. First gaining notoriety in San Francisco in 2006, Maker Faire-like events are now held in over 131 cities around the world. With attendance at such events reaching into the millions, they have already attracted the attention and approval of such well-known enterprises as Google, Facebook, Intel, and NASA. Large producers actively participate in Maker Faires in order to establish links with grassroots creativity and make connections with the new generation of creators in order to stimulate new thinking on product creation.

Product 4.0 is an all-new strategy for businesses to use for innovation, and it emphasizes the development model of “all participate, all innovate, all enjoy.” One manifestation of this is large companies’ launching of innovation ecosystems and using their broad capital resources to financially back them. Another is small actors’ spontaneous creation of innovative ecosystems, using ubiquitous internet connectivity to send out a spiritual call. Even while companies seek cutting edge big-data, internet of things, and smart manufacturing technologies, they had best not forget to involve themselves in these two camps of innovation ecosystems, for it is very possible that the next industry-subverting disruptive innovation may grow out of their fertile soil and give birth to the next unrivalled genius like Da Vinci or Steve Jobs.
Enhancing the Image of the Company Without Spending Money

Apart from Parody and Humor – Stopping Harmful leaks from Internal Online Communities

There’s a popular saying “Good things don’t get out the door, but bad things are spread for thousands of miles.” Management of online communities should not be limited to those external to the company; internal online communities are also quite important, and they have an inestimable effect on the company’s stable growth. I believe that managers should seriously consider the potential for public relations cost savings and increased managerial effectiveness that can result from internal social networks.

Interviewee by Liu Wei-lin
Text by Su Mei-zhen

As I’ve been providing customers with social media sales strategies over the last few years, I’ve noticed something: the typical company will at some point face a marketing scandal, but no matter how much they budget to counter such threats or how big their sales are, sometimes brute strength just cannot compete with the deadly effect of just a few leaked words from a company employee. Especially in the last few years, as you can see in newspapers and magazines, several large companies have had this problem. Reporters catch the scent of accidentally leaked information and can set off rounds of public criticism that may in a single day destroy the value of the millions or tens of millions the company has spent on advertising to build its image. There’s a popular saying “Good things don’t get out the door, but bad things are spread for thousands of miles.” Any internal worker complaint has the possibility of ending up on social media, from the most trivial gripe over a change in uniform or salary and benefits not conforming to labor law. The potential negative effects of such publicity should not be underestimated.

Revelations by the Whole Staff May Develop into a Severe Public Relations Crisis

Whether speaking of political and artistic figures or the markets, the source of many shocks is often attributable to a member leaking internal information that others did not know about. People do this is because they feel some sort of dissatisfaction, usually over a small matter that, on examination, could be solved with communication, but—since it wasn’t resolved in a timely manner—it may set off a tidal wave. A simple verbal leak may not be too credible, but if it is backed up by witnesses’ Facebook posts as evidence (God’s gift given through large groups of internet users and media friends), it can be extremely damaging and even create a public relations crisis.

This got me thinking more deeply about managing a company’s internal online communities. After all, this sort of incident is unavoidable—we can’t very well just keep our employees off Facebook. Social media operations are now the primary method of marketing, and businesspeople use these channels to transmit a great quantity of information and to build positive interactive relationships with users. Social media is not just a marketing method but also a public relations tool. Still, social media operations should not be limited to external networks; management of internal online communities is also quite important. Lately it is becoming more and more popular to use LINE (a chat app) groups to discuss projects, and new
clients will suggest on our first meeting that we start a group to facilitate communication. The most famous example of this is the current Taipei municipal government: their use of LINE groups as a supplement to official memoranda to communicate about projects of all sizes is not only convenient but has led to a great increase in efficiency.

Companies have always had a need for and lacked this type of communication. Even though there have been regular meetings, they tend toward formality and make it difficult to communicate about core issues. Companies have noticed the importance of this communication and are slowly starting to establish internal company online communities, perhaps a LINE group or maybe a Facebook group. Whatever their format, they must be private and not open outside of the company; this way employees can have a certain degree of free communication and share their feelings, all good ideas.

Who Will Lead and Manage?

A company’s internal online communities should absolutely not be run or moderated by the boss or special assistant to the general manager. These people are stuck with the association of being centers of authority, and any attempt of theirs to create a happy atmosphere, no matter how humorous and good-natured they may be, will come off as affected. So, who should fill this role? What kinds of traits should this person have? If there is to be a clear demarcation between management and labor, I believe that you should do the following: think about that group of workers who seem to generate a dark cloud around them that encourages dissatisfaction and resentment, and then pick your internal online communities’ manager from among that group! Surprised? To put it another way, such a person will tend to be biased toward the workers in labor relations matters, be well-liked by co-workers, and have a certain level of persuasiveness relative to others. The candidate must also be a deliberate and capable communicator. Since he or she will be chatting as an equal with everyone else in an informal setting, it is critical that he or she have no actual power of management.

Content Creates the Atmosphere

The source material of posts is critical for making a company’s internal online communities as vibrant and active as online communities. It must be genuinely entertaining enough that participants will let their guard down but should avoid morphing into something people just use to chat without any connection to their work. Use “unofficial” methods to convey company news, like comic strips and memes to remind people of today’s company announcements. Fun and funny content will get a better response and encourage more activity. You can also use Facebook’s poll function, for example, when the annual company employee dinner is coming up: take votes on whether you should serve shrimp fried rice or Guangdong fried rice. This method is quite crafty because all the options have been prepared in advance and are already acceptable to the company, but the poll still creates a sort of democratic atmosphere and allows employees to feel like they are being listened to and have the power to choose. You could say it’s a way of making management look good.

Currently, most of the online communities set up by shop and commercial brands are company-external fan groups that can’t help but focus on a public relations image. Even if they use editors to energize the group’s atmosphere, the content of the messaging can’t help but appear packaged, causing people to doubt its sincerity. Unlike external online communities, the purpose of an internal online community is not to add fans or sell anything. Instead, internal networks try to win over the feelings of staff and can be more heartfelt. They can dispense with the formal language used with customers, organizational hierarchical speech, and the tone used with clients. Instead, they can use the sort of dialog used among normal people or friends.
Participants can vent directly, and benign humor and sarcasm won’t wreck the general atmosphere. Additionally, people today often prefer to communicate through text rather than in person or over the phone; even those who may feel more inhibited in real life or who are not as good at expressing themselves on the spot can use the network to express themselves.

**Humor and Joking Coalesce Into Energy**

The primary purpose of an internal online community is emotional connection. I suggest that you use the methods of informality, warmth, and even humor to unite the hearts of your workers. For example, the general manager can appear at the annual company dressed up in an unusual way. If workers find it entertaining they will share it, resulting in a reduction in distance between them and the management. Maybe the general manager is ordinarily unlikeable, but when he or she dresses up like a dinosaur for the company dinner, suddenly he or she has become a little cuter—precisely the sort of messaging that internal online communities need to convey.

So, how large should the online communities be? Typically, 10-20 people on the smaller end and up to a couple thousand in larger companies is reasonable. In large companies, groups of over ten thousand should probably be organized into sub-groups to avoid the proliferation of meaningless content. Also, there is a danger arising from where many gather and speak freely. If a co-worker starts an argument, in order to avoid bringing the resulting discord into the real-life work environment, you absolutely must not think you can mediate the dispute in front of everyone on the network. Doing so will only complicate the matter; instead, immediately suggest discussing the matter offline—a smarter approach.

As for the tools available for creating an internal online community, Microsoft companies all use a social networking service called Yammer, which has been called “the Facebook for business.” Its appearance and display of statuses is similar to Facebook’s, and it enables businesses to communicate internally and share text, pictures, and videos. However, the content is completely restricted to the network; none of the discussion or shared content can be known by outsiders so as to protect the leaking of confidential commercial information. Of course, if anyone is intent on leaking something they will find a way, and there’s no way to guard against it completely. Therefore, content management is still a matter of concern. Like many online applications, Yammer offers a free version and a paid premium version, and if you want to save money, currently Facebook groups offer all the necessary functionality.

The benefit of managing internal online communities cannot be immediately manifest, and it’s even more difficult to show businesspeople concrete gains from it, as there is practically no sales increase to speak of (though if you really want to talk about benefits analysis, perhaps the employee turnover rate is relevant). Therefore, many companies have not yet actively invested in this area. However, from a long-term perspective, the establishment and operation of internal online communities will have an inestimable effect on the stable growth of companies, and I believe that managers should seriously consider the potential for public relations cost savings and increased managerial effectiveness that can result from internal online communities.