

Innovative traditional industries sail towards a new blue sea

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Due to the ever-changing technological development, a great number of materials have made many breakthroughs. Certain traditional products applying new materials presents more functions, styles and also become user-friendly. Indeed, these changes have won customers' favor and also bring these enterprises more new business chances.

Innovation and flexibility feature the competitive advantages of Taiwan's industries. Supposed the traditional industries would apply new materials or latest technologies and present their product differences and characteristics, they might find a new blue sea of market in the future.

It is important that our enterprises shall not remain on the level of manufacturing, particularly the original equipment manufacturer (OEM). Mr. Bai the director of Taiwan Textile Research Institute (TTRI) thinks that OEM obtain a lower value. Only with the help of technology, they can add values. In the past, manufacturing put focus on engineering and producing process. Nowadays, enterprises need to specialize not only in manufacturing but also design and marketing. Only doing so, they can compete at the international markets. Taking Taiwan's textile industry for an example, it is significant to pay attention to annual fashion and styles

which include the changing colors as well as designs. Therefore, before starting manufacturing, they need to realized customers' need and the futuristic fashion streams.

He also points out that the ongoing competition is no longer the sort of products competitions but innovation and future of the competing companies. In the recent years, there are quite a few of innovative new materials of the textile industry in Taiwan, covering aquatimo® a kind of wet-absorbing and cooling nylon and LUMI LONG® a sort of light-reserving fiber developed by TTRI. LUMI LONG® is currently applied in slippers, light cover and night home-use decorative products. Also we know S.Cafe® a kind of coffee-mixed yarn invented by Singtex® Industrial Co., Ltd. and the recycled fiber innovated by Da Ai Technology Co., Ltd.

Following the constant developing technology and materials, lots of traditional products are made from new materials added with more functions such as antibacterial, lightweight and other features. For example, moisture-managing textile products provide light, comfy and convenient dressing. And the materials like carbon fiber and aluminum alloy are used in bicycles and wheel chairs. They help lighten the transportation tools which make people's life more pleasantly and easily. The following cases are the successful ones that enterprises

has transformed or enhanced with the help of new materials.

**Characteristic A:
Energy-saving and environmental
Recycled and reused materials are
marvelous for innovative products!**

Talking about energy saving and environmentalism, Da Ai Technology Co., Ltd. is counted as the pioneer of Taiwan's textile industry working together with the technology industry. It makes good use of the recycled plastic bottles and turn them into an environmental yarns. Then these yarns are produced into environmental blankets. From recycling, plasticizing to the final sales, this forms a complete and sound supply chain. And the so-called environmental textile production technology is to directly apply the recycled plastic bottles; through physical methods, these bottles are turned into pet chips, environmental yarns, knitting fabric to the final product. Compared with the original yarn, this producing method can saving 84% energy and achieve 77% carbon reduction.

LUMI LONG is a sort of fabric which gives light without consuming electricity. This is an innovative breakthrough within the textile industry. Mr. Bai expresses that this new material only needs sunshine or fluorescent light for

10 minutes and then it would illuminate for 6 hours at least. This product is absolutely safe without any poison. Besides, it is washing-endurable. More importantly, TTRI has simultaneously integrated the manufacturing technology among the upper, middle and lower stream and bring it into commercialization, inspection, verification, marketing and the supply chains all at once. Then LUMI LONG can really enter the commercial world.

What's more, Jiu Ling Co., Ltd. developed a new material: recycle the packaging buffer material called EPP, that is, expanded polypropylene and through a melting method and extract PP and remold PP into to other kinds of plastic utilities. For example, at TaiSPO 2014, Jiu Ling exhibited its leisure assembled chair which is not only safe, convenient, water-proof and also very lightweight. Ms. Hung as the president's assistant said that its weight is 300 grams but the dead weight capacity is 200 kilograms. Another product is a dual-density helmet with two different layers, two density materials; one is a protective layer against external crushing force and the cushion layer to absorb the crushing impacts.

Characteristic B: Lightweight Developing new material to be lighter and more user-friendly

Lightweight has been the main stream of current product development, including bicycles, wheelchair, notebook, umbrella and shoes, etc. Taking bicycle for example, GIANT in 1992 succeeded developing an integral carbon bicycle. It has won widespread applause and created a new value of bicycle. In addition, there is another lightweight-oriented company, Kang Yang.



The CEO, Mr. Chen, expressed that from the beginning, they set lightweight as their target. In order to find a way to reduce the weight of wheelchairs, they strived for a new material. In the end, they decided to adopt alloy structure and replaced the traditional steel pipe structure. Nevertheless, the strength of Taiwan's alloy materials are solid enough and most of them are applied in the decoration of aluminum doors and windows. It took them two years to study and look for material suppliers. Finally they obtained the aerospace-level alloy material in 1990 and succeeding reducing the weight from over 20 kilograms to 10 kilograms. What's more, their wheelchair can load over 100 kilograms.

New Bon Int'l Co., Ltd. has produced professional umbrellas for more than 20 years. It is also another successful example of lightweight development. Mr. Wang acts as the general manager of the 2nd generation at this company. He initiated to renew the outlook and upgrade the quality and functions. He explains that in the

early times, the umbrella fabric was either nylon, polyester, pongee, satin or T/C. The material of umbrella bone was PVC, PC, etc. On the way to improving the material quality, he decided to use not only recycled PET for the umbrella fabric but also carbon for the umbrella bone.

Moreover, Hueite International Co. manufactured lightweight professional weaving shoes since its early establishment. Mr. Ho, the general manager, indicates that shoes are one of the important daily wearing such as F.KniT, professional weaving shoes. They are integral and lightweight. Averagely a pair of shoes weights 200 grams. But their professional shoes weight 100 grams less. And they have high air breathing and water resistant characteristics. Besides, no matter gentlemen shoes, doll shoes, high boots or low boots all have high-tech weaving shoe fabric. Thus, they are able to produce 100 different styles of shoes with diverse colors, lightweight and comfort.

Characteristic C: Function

User-friendly: Hot-selling products

- Deodorizing and antibacterial

Mentioning about deodorizing, quite a few of people would get rid of be called as stinky men, stinky socks, or any stinky-related nicknames. In the past, people could only take more showers or change clothes to improve the awkwardness of spreading odor. However, with progress of textile technology, plenty of manufacturers have developed new underwear and socks with deodorizing function, including bamboo charcoal fiber has received widespread acceptance from a decade ago until now. A couple of years ago, Singtex® Industrial Co., Ltd. succeeded producing environmental café fiber, S.Café ®. It provides characteristics like odor-controlling, quick-dry and anti-ultraviolet. Within two years of its new release, they have received orders of international brands from 60 countries such as Nike, Adidas and The North Face.

Bae Shiow Co., Ltd., a professional hat manufacturer, started to apply the moisture-absorbing, quick-dry, anti-bacterial functional fabric in various styles of hats in the recent years, apart from the basic anti-ultraviolet and water-resistant functions. The hats keep hikers, mountain climbers or other athletes from whole-head sweating. In consideration of convenience, the material of a hat rim was changed into foaming rubber so that a user can easily fold and put it into a pocket or pants' pocket.

Additionally, Hui-Liang Industrial Co., Ltd., a subsidiary company of Nam Liong Enterprise Co., Ltd., has applied Japan's latest technology fabric, be*quem and produced quick-deodorizing apparel in these years. This fabric can restrict the growth of bacteria by creating a weak acid environment with the help of hydrogen ion to transform

odor molecule. In a consequence, odor is terminated. As the deodorizing test indicates that the fabric after fifty times of washing still can reach 90% deodorizing effect to fight against major odor components of human body including ammonia, acetic acid, isovaleric acid as well as 2-Nonenal which the elderly particularly have.

- Warmth retaining and heat generating tech

Due to the extreme climate over these years, once the winter temperature drops suddenly, heat generating clothes have become hot sales either at the convenience or clothes channels such as UNIQLO, aPure, Far Easter Textile, lativ, 7-select and other clothes brands. They all promote heat-generating clothes. A few of customers think once they put the clothes and they would be able to fight against coldness. But the real heat-generating clothes shall be the ones which can increase the temperature and sheds out warmth. Currently, most manufacturers use acrylate which can create co-vibration with the body moisture to generate heat. Besides, Asiatic Fiber Corporation release heating neck scarf, heating vest, heating gloves and other heating related products. For example, its heating vest is loaded with a heating pad and rechargeable lithium batteries and it heats effectively and evenly. The temperature could be increased up to 51 or 55 degrees Celsius. Apart from repetitive usage, it is also washable, foldable and durable.

Hotcup, a self-heating cup, is produced by Feat-Tek Corporation. This invention is the most convenient, safest and economic heating apparatus to prepare food. A hotcup without any use of fuel or electricity can heat up all kinds of brewed beverage or food. In fact, the idea of this product is to put a super heating pad between two specially-designed

heat-resisting PP cups. As long as to add some water in the outer cup and press the inner cup a bit, the super heating pad would absorb the water immediately and generate heat promptly. A user can easily enjoy a cup of tea or coffee, instant porridge, soup, or food at any time or any location. The inventor, Mr. Wang, expressed that he adopts the concept of a heating pad and uses calcium oxide as the basic material plus other harmless natural minerals. He transforms the heating pad which generates low-level heat and extends for a long period of time into a super quick heating pad with high temperature. His invention has earned many Japanese customers' favor, particularly for those who go fishing or camping.

- Combination of different materials

Moreover, in the fashion of doing fitness and body sculpture, treadmill has become a basic fitness equipment either at a fitness center or at home. Though its development has been more than one fourth of a century, 80% components of its body structure are steel or other metals and the rest 20% is the different outlook designs and differentiations of the control panel.

In pursuit of product differentiation and characterization, Mr. Zhen, as the deputy of general manager of Afarsports Ltd. states that the company has been established over 18 years; its initial products include treadmill, stationary fitness bike and multifunctional fitness; its major markets cover 75 countries around the world across 5 continents. The company has researched soft-touch treadmill applying a softening concept in combination with PVC and flexible running belt plus unique three-layer anti-shocking design so as to protect a runner's knees and

reduce the buffering power. This treadmill is well-designed for those above 45 years old.

Besides, the flexible running belt allows the user to do fast walking with bare feet and joyfully achieve the fitness effect in an easy and cheering mood. At Taipei International Sporting Goods Show 2014, it made its initial presentation and won All Star Awards 2014, gaining tremendous attention from overseas buyers and major media press.

Characteristics D: Crossing-industrial integration

Large united power and grab immense business opportunities

The traditional industries have made strides towards the way of energy saving, environmental, lightweight or function development. If they can work with different industries, there might be more chances to explore new market. For example, physiological intelligent clothes is one of the latest global wearing technology. TTRI has researched and developed a series of monitoring fabric products for the elderly care or physical therapy purpose such as physiological intelligent clothes, Bluetooth blood oxygen saturation gloves, 5-in-1 physiological monitoring clothes, posture detecting vest, mobile electrical cardio gram braces, intelligent cardio rehabilitation device, etc. Supposed, in cooperation with medical and healthcare industry, they find a tremendous potential business when the aging era is upon us.

From the above-mentioned cases, nearby a dozen, we could find and test that as long as a product has multiple functions, good design or user-friendliness, they would easily catch customer's eyes winning favors. As a result, there will be more orders and business. Embracing the characterization of traditional industries, if small-and-medium enterprises can work with Taiwan Textile Research Institute (TTRI), Industrial Technology Research Institute (ITRI), Footwear & Recreation Technology Research Institute, and other research institutes to empower themselves, they may find they can compete with other bigger enterprises and save lengthy research and development. More importantly, they can also unit with the same industrial companies like Taiwan Outdoor Group (TOG), A-Team (Taiwan Bike Association), etc. so as to complete and strengthen the domestic supply chains and further integrate international marketing, moving towards international brands.

At last, in the phase of moving the traditional industries and bring more innovative development, Mr. Jong-Chin Shen as Vice Minister of the Ministry of Economic Affairs encourages the local traditional industries can take in new thoughts and apply new technologies like cloud system, 3D printing technology, low-carbon production and so on. As to textile, metal, mechanic, jewelry and other related industries, they could integrate the old skills or techniques into new technology. They may save molding cost by using 3D printing technology as the initial mold to print an end product at the spot to impress the buyers. He believes that this futuristic technology will assist the whole industrial designs and competitiveness.