Asiaceutical Insights

Quarterly

Quarter 4th, 2017 · Issue 14

China Double 11 Shopping Festival Insights

Artificial Intelligence + Medicine, Catastrophe? Future!

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Creating Nature & Health

Creating Nature & Health

Functions and Applications of Bromelain

- Medicine:Anti-inflamation
- Dietary Supplement:Digestive aid
- Food: Protein hydrolysis

Functions and Applications of Actinidin

- Dietary Supplement: Digestive aid
- Cosmetics: Antioxidant, anti-aging, nourishing and beautifying skin
- Food: Meat tenderizer, fresh cheese production

Functions and Applications of Papain

- Cosmetics: Striping of stratum corneum, whiting and nourishing skin
- Food: Meat tenderizer
- Leather tanning agent and others

Functions of Inulin

- Balancing the intestinal dysbacteriosis
- Enhancing mineral absorption, especially Calcium and Magnesium
- Improving mouthfeel as fat replacer
- Controlling blood sugar

Applications of Inulin

- Dairy product
- Bakery
- Confectionery
- Beverage
- Infant formula
- Cereal
- Ice cream
- Dietary supplement
- Functional beverage

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2018 Innovation Summt in Health Industry

HEALTH TRENDS IN CHINA

The fifth

Organizer: Herbridge Media

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Participants 300＋

CONTEN

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Guiding natural ingredients industry development
Transmitting Asia Nutrition Market News

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UNPA Special Section

China Double 11 Shopping Festival Insights

[Briefer] Both Chinese traditional supplements and foreign health foods achieve excellent performances in the"Double 11"sales battle

Both Chinese traditional supplements and foreign health foods achieve excellent performances in the health product market in the "Double 11"sales battle.

The shopping spree of "Double 11"ended, leaving Jack Ma's Feng Qingyang", "The Art of Guard and Defense" and Tmall's "Double 11" Night Carnival as the quotable topics of conversation for people. And what excites consumers the most is shopping on "Double 11". The event began as a self-mocking celebration of single people and later became a shopping carnival within and beyond China. After nearly 10 years of development, "Double 11" has now become the global focus of attention.

Alibaba reported ¥168.2 billion in sales for the big promotion by 12am, November 12. JD.com also announced the sales data of "Double 11" for the first time this year-a cumulative order amount of ¥127.1 billion.

Except for Tmall.com and JD.com who released transaction data, other e-commerce platforms did not disclose any figures, such as Gome, but all said sales rose significantly compared with last year.

The Top 10 Health Foods Sold Online on "Double 11"

What is the sales data of health food? According to Ebrun's statistic analysis of data, the top 10 online health food stores (Tmall+Taobao) with most business volumes on "Double 11"of 2017 are as follows:

Ranking	Brand name	Transaction index of 2016	Transaction index of 2017	Year-on-year growth
1	ChemistWarehouse oversesas	1860920	2202004	18.3%
2	Swisse official overseas flagship store	1049071	1633518	55.7%
3	Tmall global official direct-sale store	-	1625532	-
4	Movefree official overseas flagship store	982157	1413217	43.9%
5	By-Health official flagship store	784289	1361356	73.6%
6	Muscletech flagship store	966059	1349350	39.7%
7	Simeitol flagship store	-	1328581	-
8	Ali Health overseas flagship store	-	1179187	-
9	GNC official overseas flagship store	843717	1083539	28.4%
10	Nature's bounty overseas flagship store	-	907829	-

Note: Transaction index refers to an indexing indicator calculated by the number of transaction behaviors such as transaction amounts and orders paid in the statistical period.A higher transaction index means more transaction behaviors.("—" means the brand was not in the Top10 list of 2016, thus without data comparison.) What is clear from the figures is that By-Health and Simeitol(the agent for some of foreign products) are the only two brands of the top 10 selling domestic health food products, with their transaction index accounting for 19% of Top 10 on the list, down 12% compared with last year (The domestic brands on the top 10 list of 2016: By-Health, Conba, CPT and Beijing Tongrentang made a total sum of transaction indexes accounting for 31% of the total). The share of China's health foods significantly decreased compared with last year.

The top 3 best-selling products of each brands

The top 3 best-selling products of each brand based on their total sales are as follows:

Ranking	Brand name	Popular products（main functions)
1	ChemistWarehouseoversesas	Swisse Ultiboost Calcium+Vitamin D（calcium supplement）
		Blackmores Natural Vitamin E Cream（moisturizing & nourishing）
		Cenovis Vitamin C（immunity enhancement、skin whitening）
2	Swisse official overseas flagship store	Swisse Ultiboost Calcium+Vitamin D(calcium supplement）
		Swisse Ultiboost Liver Detox（liver detoxification）
		Swisse Ultiboost High Strength Cranberry（female urinary system health）
3	Tmall global official direct-sale store	Swisse Ultiboost Calcium+Vitamin D（calcium supplement）
		Swisse Ultiboost Hair Skin Nails（facial Care）
		Swisse Ultiboost Liver Detox（liver detoxification）
4	Movefree official overseas flagship store	Schiff Move Free Joint Health（joint health）
5	By-Health official flagship store	Liquid Calcium（calcium supplement）
		Protein Powder（immunity enhancement）
		Vitamin C（补充 VC）
6	Muscletech flagship store	Muscletech Performance Series（muscle building）
		Muscletech Essential Series Platinum（body shaping and muscle building）
		EPIQ（relieve fatigue）
7	Simeitol flagship store	Shandong Shenghai Collagen Solid Beverage（beauty food）
		Xianle Collagen Oligopeptide（beauty food）
		Shandong MassGgainer（muscle building）
8	Ali Healhnth overseas flagship store	Swisse Ultiboost Calcium+Vitamin D（calcium supplement）
		Blackmores Healthy Joints（joint health）
		Swisse Ultiboost Liver Detox（liver detoxification）
9	GNC official overseas flagship store	GNC Grape Seed Extract（skin whitening and spot fading）
		GNC Co Q-10（heart health）
		GNC L-Carnitine&Burn（fat burning, weight loss and body shaping）
10	Nature’s bounty overseas flagship store	Nature’s Bounty Co Q-10（heart and brain health）
		Nature’s Bounty Calcium Plus Vitamin D3（calcium supplement）
		Nature’s Bounty Lutein（eye care）

The most popular main function raw materials in China

As seen from the popular products, joint health, liver health, beauty and body care, immune health are still the focuses of health food products. The main function raw materials are as follows:

》Joint Health

Calcium: It’s the most concerned functional component on “Double 11”. “Swisse Ultiboost Calcium + Vitamin D”, in particular, took the top spot of almost all the overseas flagship stores. Calcium, often described as “biological element”, is a lifelong substance for people from infants to the elderly, with a variety of health benefits, especially for human bones and joint health.

Glucosamine and chondroitin sulfate: They are golden partners in joint health, as well as the leading product of Movefree official overseas flagship store. However, most of these domestic raw materials are targeted at low-end products with a low added value.

Curcumin: Curcumin has also started to be active in the field of joint health in recent years. Studies have shown that curcumin is able to regulate the reaction of targeted inflammatory molecules, activate fibrinogen, alleviate joint pain and improve joint mobility. The arrival of curcumin is likely to inject new vitality to the joint health area. Besides, dimethyl sulfone, collagen, hyaluronic acid and vitamin D3 also play an important role in joint health.

》Liver Health

Silybum marianum: Silybum marianum ranks second after calcium in the health benefit of the Double 11 ranking list. It is also one of the necessary ingredients for liver health products, especially Swisse Ultiboost Liver Detox, which reigns supreme.

Turmeric: It contains the active constituent curcumin that helps protect liver and alleviate hangover. It is generally used in dietary supplements in the form of tablet in Europe and the US, and used more in functional foods and beverages that dispel the effects of alcohol in Japan.

》Beauty and Body Care

Collagen: Although collagen products have dropped in popularity over the previous year, it's still a popular ingredient in the products of women's health, especially SIMEITOL that breaks into the top 10 for the first time. The flagship product of this brand is micromolecule collagen powder, holding a skin care philosophy of "nourishing the skin and getting beautiful internally and externally". This is totally in line with the current concept of beauty foods and gets an accurate approach to the market.

Whey protein: The muscle building powder is the leading product of By-health, Muscletech and SIMEITOL on the"Double 11"festival. The main component whey protein can provide the human body with good protein, and also contains a variety of nutrients such as calcium, magnesium, phosphorus. In addition to the application in baby formula, whey protein also contribute a lot to the sports nutrition products with the effects of muscle building and weight losing.

》Immune Health

With the pursuit of functional food, more and more people are careful about diet adjustment to obtain the best immune effect. People also develop a growing awareness on immune health maintenance that is by no means finished in one day. In spite of many components that enhance immunity, products rich in vitamin C, by contrast, are easier to be accepted by consumers, making it a flagship product of By-health and ChemistWarehouse.

The Top 10 Chinese Traditional Supplements Sold Online on "Double 11"

Although foreign health food brands occupy a major share in China's e-commerce platforms, the domestic nourishment brands play a dominant role in the traditional nourishing products. With the development of people's health awareness, Chinese traditional supplements are also favored by consumers. As seen from the table below, bird's nest products have undoubtedly attracted much attention. Yan Palace, Zuo Shi, Yin Yi and Aisan all take bird's nests as their flagship products; Dong-E E-Jiao, PanLong YunHai and Beijing Tongrentang take donkey-hide gelatin, pseudo-ginseng, and Goji berry as the leading products respectively.

Ranking	Brand name	Transaction index
1	Yan Palace official flagship store	1,714,902
2	Dong-E E-Jiao Drugstore flagship store	1,477,844
3	Zuo Shi flagship store	1,146,401
4	Yin Yi Bird's Nest	968,736
5	PanLong YunHai Drugstore flagship store	893,753
6	Aisan Bird's Nest flagship store	854,247
7	Beijing TRT Health flagship store	806,972
8	comvita flagship store	801,961
9	Bai rui yuan flagship store	695,985
10	Lou Shang overseas flagship store	635,840

Though this year's "Double 11" is over, the research, innovation and sales of the products still go on. It is known that Alibaba will continue its overseas layout of promotional events of "Double 11" after an offer of discounts on more than 100 Chinese brands to foreign consumers this year. It is believed that more domestic health products will join the tide of "Going Global".

Administrative Provisions on the Filing of Export Food Manufacturers has been issued

AQSIQ has issued *Administrative Provisions on the Filing of Export Food Manufacturers* (full text as attached) on November 24th, 2017, and the regulation will be implemented from January 1st, 2018. The regulation has accelerated the filing process and shortened the time spent on the filing in multiple sections, and clarified entity responsibility of companies.

China's nutrition and health industry plays a very important role in the global industry. Many industrial enterprises continuously optimize themselves while actively get involved in overseas expansion. Hence, the issuing of the regulation is no doubt a good news for health products export companies.

In 2016, industrial giant Aland had completed 3 overseas investments including acquisition of Bloem Health Products B.V. in Netherland, buying nutrition products business of Perrigo, and acquisition of Brunel, the largest dietary supplement manufacturer in U.K. as well as Biocare, a well-know British band.

Another giant,SIRIO PHARMA, has invested RMB1.2 billion in early 2016 to establish its second venture base in Ma an Shan, Anhui Province. By the end of the year, the company annouced its successful acquisition of a european softgel manufacturer, Ayanda GmbH&Co.KG.

Administrative Provisions on the Filing of Export Food Manufacturers

China has implemented administrative system on the filing of export food manufacturers

Requirements and process of filing: the export food manufacturers in application for filing shall submit documents and credentials such as business license and legal representative information to local inspection and quarantine department, and the company shall be liable to the truthfulness of them. The validity period of the Filling Certification is 5 years.

The export food manufacturers shall apply for extension at the local inspection and quarantine department 30 days before the expiry date if needed. The inspection and quarantine department should make decision before the expiry date. This regulation is going to be implemented from January 1st, 2018, and at the same time, the Administrative Provisions on the Filing of Export Food Manufacturers carried out on July 26th , 2011 by AQSIQ will be abolished.(For more details in english version,pls send your email address to gloria@herbridge.com)

China manufacturers of infant formula milk powder are exposed to unprecedented opportunities

On January 1st, 2018 (two months later), the transitional period of formula registration management of Infant formula milk powder will expire. Where is the milk powder industry heading in the post-registration period? Gao Hongbin, former deputy director of Ministry of Agriculture and president of Dairy Association of China, coupled with some insiders believed that China's manufacturers of infant milk powder were faced with unprecedented opportunities.

Gao Hongbin explained that 3 major reasons - the overall two-child policy, the decreasing breast-feeding rate, and the rising price of milk powder- has caused boost of demand,while the "registration policy" weeded out inferior ones and the number of suppliers has decreased.

Formula Registration Management of Infant Formula Milk Powder (also called the "registration policy") carried out on October 1st, 2016 is considered as "the strictest new policy for milk powder in history". This policy has reduced the risk of quality safety risks and improved the industrial concentration by solving the problem of excessive, casual and frequently changed formula of infant formula milk powder.

Ma Fuxiang, Deputy Director of Special Food Registration Administration Division of China Food and Drug Administration introduced on the forum that up to November 14th, 598 formulas of 93 manufacturers of infant formula milk powder (including 486 formulas of 70 domestic manufacturers and 112 formulas of 23 overseas manufacturers) have been permitted.

How should supervision departments and businesses in the post-registration period adjust themselves to the new situation? Liu Senmiao, general manager of milk powder business department and vice president of Jun Le Bao Dairy Group expressed in his speech that besides our excellent quality, domestic milk powder should comprehensively surpass overseas ones in confidence, brand, and market, which means efforts must be made to “improve consumer confidence”, “increase market share in first-tier cities” and “enhance international influence”.

Ma Fuxiang introduced that China Food and Drug Administration will properly connect formula registration and other supervision tasks, further open up and improve relevant matters, clear up the relation between formula registration and filing, improve the information system through intelligent management, complete issues related to on-site inspection, and make plans to conduct inspection and supervision to companies that have gotten the license.

Gao Hongbin believed that leading manufacturers of infant formula milk powder should seize the opportunity when inferior brands were weeded out of the market, and those leading ones should make great progress in enhancing brand influence both at home and abroad by consolidating middle market and expanding high-end market.

Healthy nutritional products become new growth point of maternal retailing

With the strictest new policy for milk powder in history being gradually pushed ahead, there are only less than two months for the registration application of infant milk powder formula. So far, over 400 formulas of infant milk powder product have been permitted by China’s Food and Drug Administration as the formula registration list are disclosed. The clear-up of infant milk powder formula market is gaining momentum under the registration policy, which not only directly influences the milk powder industry, but also brings changes to maternal stores whose major business is milk powder.

It’s urgent for maternal stores to develop diversified profit model.

We can’t ignore changes along with the new milk powder policy even though it’s a good thing in terms of regulating the milk powder market. The milk powder market was cleared up and the profit margin fell after the new policy was carried out, so the model of relying on milk powder products was outdated. According to industry statistics, 103 domestic infant formula milk powder manufacturers have in total nearly 2000 formulas, some of which even have over 180 formulas. After the new policy takes effect on January 1st, 2018, original equipment manufacturers (OEM) and fake overseas brands will be weeded out of the market, so the brand quantity will decrease from 2000 to 500, that means, over 70% of milk powder brands will be weeded out. In the short term, the demand will exceed the supply in China’s milk powder market.

Up to November 14th, 598 formulas of 93 manufacturers (including 486 formulas of 70 domestic manufacturers and 112 formulas of 23 overseas manufacturers) have been permitted under the infant formula milk powder registration policy.

According to Gao Hongbin, the infant formula milk powder registration policy is going to terminate at the end of 2017. If this is true, infant formula milk powder market will have 25% extra share due to the products weeded out by the registration policy. And this accounts for 1/4 of the total market, which is amount to 30 billion RMB. At that time, the infant formula milk powder market of over 70 billion RMB is going to be shared by nearly 100 manufacturers.

In 2016, the pass rate of infant formula milk powder spot inspection is 98.7%, which is at the leading position in food products. Companies have put much emphasis on the improvement of milk origin. The percentage of companies that had over 100 dairy cows raised from less than 20% to 53%, and the number of milk station decreased from 23 thousand to 6130. The Ministry of Agriculture has altogether conducted 180 thousand times of spot inspections for 9 consecutive years, the pass rate of which has reached 100%. The amount of protein, milk fat, TPC and the average somatic cells reached the international level, which laid a solid foundation for producing premium milk powder. Besides, the strictest supervision and management was implemented. Each lot will be under both national and company test.

For maternal stores, milk powder sales accounts for 40% of the total sales volume, and sometimes the percentage even reaches over 60%. Obviously, milk powder is very important, especially for small-scale maternal chain stores or individual ones, because milk powder accounts too much (some even accounts for 70%) and their profits rely too much on milk powder for lack of comprehensive category.

The profit model of relying on milk powder promotion will become ineffective, so maternal stores must quickly react to the big change in the market. Therefore, the clear-up effect brought up by the new policy of infant formula milk powder is also a great challenge for maternal retailing industry.

He who does not think of the future is certain to have immediate worries. Where shall maternal stores go at the time of clear-up? Enriching product category instead of relying on milk powder, upgrading product portofolio, expanding new categories, and develop diversified profit model are urgent priorities of maternal stores.

Healthy nutrional products are supposed to become new growth point of maternal retailing.

Apart from milk powder, what kind of product is going to drive new growth for maternal stores in the future? In fact, relative topics have been discussed in the industry. At the end of last month, during the CBME 2017 Autumn Seminar, many famous maternal brands and distributors like H&H Group, Kidswant, Li Jia Baby, and UBM China (the host of CBME Autumn Seminar) deeply discussed "the next growth pole of maternal stores", and they considered healthy nutritional products to be the new growth point of maternal retailing, placed with great expectations.

Can healthy nutritional productsreally become the new growth point? Gong Kangkang, general manager of UBM China (Hang Zhou) pointed out on the seminar that according to relative data, sales volume of non-maternal stores is occupying an increasing number of store sales, and a systematic research on maternal retailers also indicated that sales of healthy nutritional products(for women and adults) have come to the top among non-maternal products. Actually, the future potential of this product is beyond estimation.

In recent years, as people's consumption idea changes under the strong power of consumption escalation, healthy nutritional products have become increasingly popular, and the massive health industry is turning into the new engine that drives China's economy. So healthy nutrtional products, as important components of massive health industry, are also faced with increasing demand. However, according to the latest report by 21-Century Economic Research Institute, due to consumption escalation and the second-child policy, China's maternal market has entered into a high-speed growth age, so China's maternal market has been very promising with an estimated consumption increase of 30 billion RMB each year.

Besides, according to the latest release by the State Council in September 2017, Cross-Border E-Commerce Trade Regulations of China initially carried out on April 8th, 2016 has been updated again, so the implementation of the Regulations will be delayed to the end of 2018. This means that some overseas healthy nutritional products can enter Chinese market as import retailing goods, which is estimated to be a good opportunity for premium and mature healthy nutritional products brands to enter Chinese market, and this will better satisfy diversified demands of domestic consumers.

The introduction of healthy nutritional products by maternal distributors will bring about huge market space and power. Especially, hot moms, the main consuming group of maternal stores will bring about explosive growth for healthy nutritional products in maternal stores. According to relative data, the 1980s and 1990s have entered into baby boom in recent years to become young parents. Their purchasing power greatly increased compared with the last generation, because most of them are well-educated and well-paid with improved consumption ideas,

Under such background, current moms, who are controlling households, are willing to spend for their kids, themselves and other family members. And this has made it possible for moms to buy healthy nutritional products for babies and even for adults in maternal stores. As is pointed out on the CBME Autumn Seminar by Luo Fei, CEO of H&H Group, "mom economy" will become the next golden opportunity.

Under the background of consumption escalation, healthy nutritional products emerging at the turn from "baby economy" to "mom economy" will become the next growth pole. With an increasing and upgrading mom's demand, there will be a huge demand for health care products for pregnant women and for babies in the market. "Mom economy" will bring about a huge market valued over 1 trillion RMB. Levering "mom economy" has become the key to make a breakthrough in promoting the sales of healthy nutritional products in maternal stores.

Obviously, we can't make healthy nutritional products development the new growth point of maternal retailing at once. How to increase consumer return rate and buying frequency by "de-luxurization"of nutritional products? How to train shopping guides to offer better and more professional advice and guidance about health and nutrition for consumers? How to deal with the lack of healthy nutritional products category? All those problems need to be solved one by one.

The future has come! healthy nutritional products will become the new growth point of maternal retailing industry. How should the maternal industry, brand businesses and distributors seize the new and huge growth opportunity of healthy nutritional products? We believe that more brands and distributors will think about it and explore in the future. ■

A Development Trend of China's Widely-used Registered Health Food Materials

The official website of China Food and Drug Administration(CFDA) health food evaluation center recently released the *tender notice of special research projects on the catalogue of health food materials and health functions,* opening a public bidding to domestic universities and colleges, research institutions, business corporations and corporations of public institutions for the research on the health food materials catalogue. The project is designed for a further study on expanding the scope of health food registration and regulating the list of materials that can be used for health food.

The projects are a series of studies on the 26 materials (series) mentioned in the *tender notice of special research projects on the catalogue of health food materials and health functions* for the source of raw materials, quality conformance of raw materials and products, and to build the evaluating methods for the product quality conformance.The materials include ginseng, American ginseng, ganoderma, fish oil, co-enzyme Q10 and lycopene, which have previously been most widely speculated by the public.

A history and frequency analysis of the use of materials

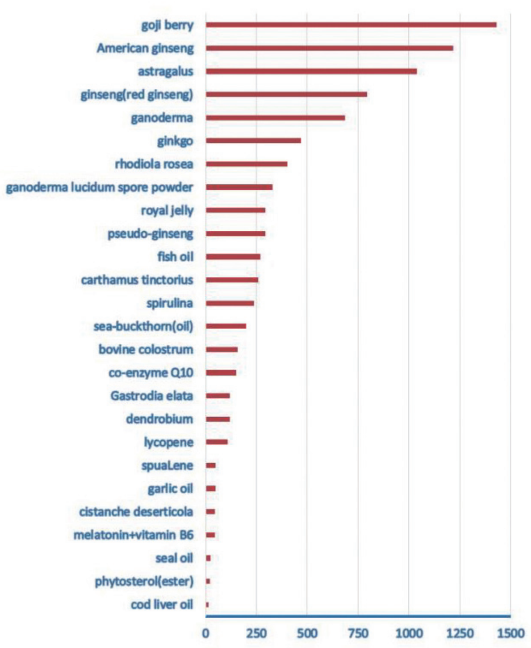


Diagram: The use of 26 materials(series) in the health foods

The number of health foods approved (unit: PCs)

Data sources and charting organization-Shuzheng Consulting

Figures from Shuzheng Consulting's Blue Cap database suggested that the 26 materials included in the study are all used much among the 15,728 health foods that have been approved and announced; among which, the goji, American ginseng and astragalus are used in thousands of products each, and the less-used materials like garlic oil, spuaLene and melatonin+vitamin B6 are applied in nearly 50 products approved each. These materials also have long been used, with most of them used in the products approved in 1996-1999, and lycopene and phytosterol used in the products approved in 2002 and 2003 respectively.

Obviously, the selection of these materials for research projects is not based simply on the frequency of use in health foods. Why then these materials are included in the catalog of this study, and what is the basis and condition of the use? The above-mentioned questions will be analyzed and open for your opinions.

An analysis of the basis for the use of the materials

The supply of the basis for the use of the materials is vital in the review of health food. The basis for the use of the 26 materials (series) included in this study may fall into the following categories:

The 1st category

New food materials and notice of the Ministry of Health on further regulating the management of health food materials (No.51 [2002] of the Ministry of Health)", which is often called Announcement No.51 in the industry includes sea-buckthorn and goji, listed in A list of items that are both food and drug and ginseng, American ginseng, gastrodia, pseudo-ginseng, carthamus tinctorius, astragalus, dendrobium, rhodiola rosea and others, listed in the " *List of items available for health food* .

The 2nd category

National Health and Family Planning Commission of the People's Republic of China (originally the Ministry of Health) approved novel food (now the new food ingredient) or common food ingredient. Fish oil and phytosterols in 26 materials (series) are among the novel foods announced by the Ministry of Health in 2010; spirulina was announced as common food in 2004.

The 3rd category

The dedicated files, such as the *Notice of the Ministry of Health on restricting the production of health food with liquorice, ephedra herb, desert cistanche, Saussurea involucrata and their products as the materials* (No.188 [2001] of the Ministry of Health) specifies in detail the requirements for use of the desert cistanche and its documents required. After the implementation of the *Health food registration administration method (for Trial Implementation)* in 2005, the CFDA (formerly SFDA) has issued several documents on the use of various types of health foods and materials. For example, ganoderma is among the *List of fungal species available for health food of the Regulations of Application and Evaluation on fungi health food (for Trial Implementation)*; the compatibility of materials, functional validation and the supply of relevant data for co-enzyme Q10 are stipulated in the Notice on the Related Regulations of Registration, *Application and Evaluation of Health Food Products with co-enzyme Q10*; the regulations concerning melatonin can be found in the *Regulations of Application and evaluation on Amino Acid Chelate and other health foods (for Trial Implementation)*.

In summary, the ingredients (series) included in the public bidding all have a history of consumption at home and abroad and a reliable safety, such as ginseng, goji berry,etc.; the functional composition is relatively definite, such as fish oil and garlic oil; the dose-effect relationship is fairly clear , such as lycopene, co-enzyme Q10, phytosterol,etc.

However, at the same time, the writer have also noticed that some of the ingredients used long and more frequently in health food were not brought into in this study,e.g.,glucosamine and chondroitin sulfate which are commonly used in the products to increase bone density, grape seed extract, commonly found in the products with antioxidant properties and so on.

CFDA is making a further research as preparations for the announcement of the next ingredient catalogue, and is going to study the registered products based on the principle of single material and homogenized compatibility.From the view of the requirements of the material research, CFDA hopes the research projects will bring about a standardized management of the material use level, corresponding health functions, production processes, testing methods and other product technical requirements on the registered products to ensure the consistency of quality of the products in the catalogue.Whether the 26 materials(series) can,at last, be listed in the catalogue lies in whether the findings meet the expectations above. ■

New Censorship and Publishing Standards of Advertisements on Health Food is Coming

The advertisement and publicity of Health food and formula food with a special medical purpose shall be made in a scientific and accurate way and shall not contain the followings contents:

1. Any assertions or assurances in terms of efficiency;
2. Recovery rate or effective rate;
3. Comparisons with other medicines, medical devices,health foods or formula food with a special medical purpose in efficacy or comparisons with other medical institutions in service;
4. Recommendations or proofs with advertising spokespersons;
5. Contents in violation of scientific laws or guarantees to cure all diseases or adapt to all symptoms or either expressed or implied;
6. Necessary for normal life or for the treatment of illnesses or others either expressed or implied;
7. The so-called "research findings" "experimental or data proofs" which are not able to confirm its science;
8. Descriptions of features or function mechanisms of the products with technical or unscientific terms rather than the registration or filing documents of the products taking advantage of the consumer's unawareness of specialized knowledge or professional expertise;
9. Ability either expressed or implied to cope with stressful modern life or the pressures of further studies or examinations, to improve academic performance, to make one's energy up, to heighten competitiveness, to grow the height, or to increase brainpower,etc.
10. "Safe", "safe and without side-effect ", "little side-effect" or a safety assurance either expressed or implied with a claim of "natural" ingredients;
11. Advertising claims of certain ingredients for exaggerated advertisements of functions not specified in registration or filing documents of health foods or drugs which mislead patients or customers;
12. Direct or indirect encourage a indiscriminate use or overuse of drugs, health foods,or formula foods with special medical purposes;
13. Advertisements of health foods or formula foods with special medical purposes that aimed at a larger group of suitable crowds or target users or that express or imply suitability to all symptoms or groups of people;
14. Advertisements of health foods or formula foods with special medical purposes that involve disease-preventing or treatment functions, contain medical terms or terms that easily confuse the product with drugs or medical devices;
15. Health food advertisements that involve healthcare functions that have been canceled after an adjustment on the health food functions by relevant departments of the State Council or exaggerate functions of health foods.

No healthcare functions or contents that easily confuse promote food products with health foods or formula foods with special medical purposes shall be made in food advertisements with exception of health food advertisements. ■

President of Xiwang Food lifts his stakes twice in 1 week

The president of Xiwang Food, bullish on the long-term investment value of the company, bought additional shares twice in 5 days; Aland announced a brand strategic plan called "Go Further" and received a capital injection from Goldman Sachs to expand opportunities in China; PwC's "One Belt One Road" Big Health industry investment white paper shows that private enterprises dominated the overseas merger and acquisition market for the past three years; The 3 products of Neocate and Abbott are approved for registration as formula foods for special medical use for the first time.

Xiwang Food released an announcement on the evening of November 16th that Wang Di, the chairman of the company, bought 238,600 shares (0.052% of the total shares) through the centralist bidding system on the evening of November 16th. Prior to this purchase, Wang Di didn't own any share of the company directly.

Additional shares of Ali Health paid by parent company for ¥1.7 billion

Ali Health (00241.HK) announced on the evening of November 17th an allotment of about 442 million shares to Ali JK, subsidiary of its ultimate major shareholder Alibaba Group Holding at ¥4 per share, a 4.31% discount on yesterday's closing price ¥4.18, receiving ¥1.769 billion in net proceeds. The rationed shares make up approximately 4.5% of the share capital after the expansion of the company.

Ali Health amends the annual caps of the service agreements signed with Alibaba

Ali Health (00241.HK) issued a public notice on November 21, stating as the directors expected the current annual cap of the continuing connected transactions for the year ended March 31, 2018 will not be sufficient, it proposed to amend the service framework agreement, service agreement and logistics service framework agreement signed with Alibaba Group Holding.

AUSupreme expects a reversal in interim results from HK＄700,000 to HK＄1.2 million, a turn from losses to gains

AUSpreme (02031.HK) issued an announcement on the evening of November 15th that it expected to reach a consolidated net profit attributable to equity holders of the company of HK $ 700,000 to HK $ 1.2 million for the six months by September 30th , 2017, compared with the loss of about HK $1.988 million over the same period of last year.

Dong-E E-Jiao raises products prices

On the morning of November 20, Dong-E E-Jiao (000423) issued a public notice on the decision after studies to raise the factory prices of main products-Dong-E E-jiao and Compound E-jiao Slurry by 10% and 5% respectively from the date of publication, as well as the appropriate adjustments in retail prices, in order to guarantee the high quality of donkey-hide gelatin products and the research on the application value of health sector, and improve the technological standards based on the company investment and the market supply and demand.

Aland announces "Go Further" strategy, hoping to win the future market in China with a brand new layout

November 17, Aland announced the brand strategic plan "Go Further" at the brand launch event in Shanghai. Aland president Chang Liang and the representatives of Goldman Sachs Asia announced that the world's leading investment bank Goldman Sachs will provide Aland a cash infusion to help it fully expand opportunities in China.

PricewaterhouseCoopers publishes white paper on "One Belt One Road" Big Health industry investment

PricewaterhouseCoopers released the "*White Paper on Investment in the Big Health Industry in the 'Belt and Road' Initiative*" on November 21.According to the white paper, the overseas investment deals in the medicine field by mainland Chinese firms have shown a substantial increase since 2014, with private-owned enterprises leading the overseas merger and acquisition market and making the total investment volume 20 times more than that of state-owned enterprises for the past 3 years.

3 products approved for registration as formula foods for special medical use for the first time

On November 21, China Food and Drug Administration released the registry catalogue information of the formula foods for special medical use. This is the first batch of registered products to be issued after the release of "*Measures for the Administration of the Registration of Formula Food for Special Medical Use*" in July 2016. The 3 registered products are all baby formulas for special medical use under the brands Neocate and Abbott, with the registration valid until November 19, 2022.

Table 3: Variation in the market capitalization of enterprises concurrently engaged in health food business (unit: 100 million RMB)

no.	Abbreviation of the enterprise	Stock code	Market capitalization by last week's close	Market capitalization by this week's close	Variation in the current market capitalization
1	Kangmei Pharmaceutical	600581	1181.3	1074.9	-9.01%
2	China Resources Pharmaceutical	03320.HK	544.3	528.5	-2.90%
3	Baiyunshan	600332	522.5	522.5	0.00%
4	Dong-E E-Jiao	423	404.2	410.7	1.61%
5	Jointown	600998	340.3	317.3	-6.76%
6	H&H	01112.HK	235.5	246.5	4.67%
7	Joincare	600380	203.3	185.9	-8.56%
8	Neptunus	78	160.4	149.8	-6.61%
9	Harbin Pharmaceutical	600664	148.2	148.2	0.00%
10	North China Pharmaceutical	600812	85.6	82.5	-3.62%
11	Jiangzhong Pharmaceutical	600750	88.1	81.5	-7.49%
12	Shouxiangu	603896	90.9	76.6	-15.73%
13	Yongan Pharmaceutical	2365	75.8	72.8	-3.96%
14	Renmintongtai	600829	71.0	71.0	0.00%
15	Tianmajinghua	2453	44.5	44.5	0.00%
16	Yedao	600238	41.1	38.5	-6.33%
17	Qidiguhan	590	35.2	34.2	-2.84%
18	Yisheng Pharm	2566	32.1	30.2	-5.92%
19	Tianmushan Pharmaceutical	600671	28.0	28.1	0.36%
20	Kingworld Medicines	01110.HK	6.0	5.9	-1.67%

*As Harbin Pharmaceutical Group is planning for significant matters, Hayaogufen and Renmintongtai have been in a stock suspension since September 28; Tianmajinghua announced on the evening of October 23 that the company planned to take up an asset acquisition,which caused a stock suspension since the market opened on 24; Baiyunshan announced on the evening of October 30 that the company was planning for significant matters involving major assets restructuring, leading to a continuous stock suspension since the market opened on 31.

Table 2: Variation in the share prices of enterprises with health food as the main business (unit: RMB/share)

no.	Abbreviation of the enterprise	Stock code	Closing price last week	Closing price this week	Variation in the current share price
1	Kingdomway	2626	18.03	19.43	7.76%
2	Xiwang Food	639	18.88	18.88	0.00%
3	By-Health	300146	14.60	14.23	-2.53%
4	Jiao Da Onlly	600530	7.37	7.37	0.00%
5	Sinolife United	03332.HK	1.17	1.13	-3.42%
6	Besunyen	00926.HK	0.46	0.47	2.17%
7	AUSupreme	02031.HK	0.37	0.37	0.00%
8	Real Nutriceutical	02010.HK	0.28	0.27	-3.57%

*Jiao Da Onlly announced on the evening of 12 that the company was planning for significant matters involving asset purchase through shares issuance, which caused a stock suspension since November 13, 2017.

Table1: Variation in the market capitalization of enterprises with health food as the main business (unit: 100 million RMB)

no.	Abbreviation of the enterprise	Stock code	Market capitalization by last week's close	Market capitalization by this week's close	Variation in the current market capitalization
1	By-Health	300146	214.6	209.2	-2.52%
2	Kingdomway	2626	111.2	119.8	7.73%
3	Xiwang Food	639	85.8	85.8	0.00%
4	Jiao Da Onlly	600530	57.5	57.5	0.00%
5	Sinolife United	03332.HK	11.1	10.7	-3.60%
6	Besunyen	00926.HK	7.5	7.6	1.33%
7	Real Nutriceutical	02010.HK	4.4	4.3	-2.27%
8	AUSupreme	02031.HK	2.7	2.7	0.00%

*Jiao Da Onlly announced on the evening of 12 that the company was planning for significant matters involving asset purchase through shares issuance, which caused a stock suspension since November 13, 2017.

Table 4: Variation in the share prices of enterprises concurrently engaged in health food business (unit: RMB/share)

no.	Abbreviation of the enterprise	Stock code	Closing price last week	Closing price this week	Variation in the current share price
1	Dong-E E-Jiao	423	61.80	62.80	1.62%
2	Shouxiangu	603896	65.00	54.76	-15.75%
3	H&H	01112.HK	37.07	38.79	4.64%
4	Yongan Pharmaceutical	2365	38.60	37.05	-4.02%
5	Baiyunshan	600332	32.14	32.14	0.00%
6	Jiangzhong Pharmaceutical	600750	29.35	27.17	-7.43%
7	Tianmushan Pharmaceutical	600671	22.97	23.10	0.57%
8	Kangmei Pharmaceutical	600581	23.88	21.73	-9.00%
9	Jointown	600998	20.07	18.71	-6.78%
10	Qidiguhan	590	14.68	14.28	-2.72%
11	Renmintongtai	600829	12.24	12.24	0.00%
12	Joincare	600380	12.92	11.81	-8.59%
13	Yisheng Pharm	2566	9.70	9.12	-5.98%
14	Yedao	600238	9.17	8.58	-6.43%
15	China Resources Pharmaceutical	03320.HK	8.66	8.41	-2.89%
16	Tianmajinghua	2453	7.79	7.79	0.00%
17	Harbin Pharmaceutical	600664	5.81	5.81	0.00%
18	Neptunus	78	6.06	5.66	-6.60%
19	North China Pharmaceutical	600812	5.25	5.06	-3.62%
20	Kingworld Medicines	01110.HK	0.97	0.96	-1.03%

*As Harbin Pharmaceutical Group is planning for significant matters, Hayaogufen and Renmintongtai have been in a stock suspension since September 28; Tianmajinghua announced on the evening of October 23 that the company planned to take up an asset acquisition,which caused a stock suspension since the market opened on 24; Baiyunshan announced on the evening of October 30 that the company was planning for significant matters involving major assets restructuring, leading to a continuous stock suspension since the market opened on 31.

Health products companies attention please! Here comes the giant in Q4.

Recently, China Resources Sanjiu Medical&Pharmaceutical Co.,Ltd(hereinafter referred to as "CR Sanjiu") disclosed that the company will launch new products of health business in Q4,2017 including vitamins and minerals and natural extracts,etc.,covering the mainstream category of health products market.In mid-September, CR Sanjiu spent nearly RMB400 million to acquire a 65% stake in Shandong Shenghai Health Products.

According to CR Sanjiu, the company's self-diagnosis and treatment businesses now include OTC business, OTX business and health business of "999" brands. The overall development idea is to cultivate the brand's OTC business, expand the business of health and OTX, and upgrade the business from OTC leader to self-diagnosis and treatment leader of the industry.

Shandong Shenghai Health Products Co., Ltd. owns a total of 45 domestic health food products (see the attached complete list), including 16 nutrient supplement products, 29 functional health food products including two bi-functional products, covering 9 kinds of health functions such as immunity enhancing(18 products), reducing blood fat (3 products), improving sleep (2 products), relieving physical fatigue (2 products), improving memory (2 products) and losing weight (1 product). It is understood that currently Shenghai is still stepping up for dozens of blue cap transferee issues,thus their actual number of products is likely over 80.

USANA China Coach Change

Q3 global revenue increased while net profit went down

On October 24, local time, USANA released the Q3 Report of 2017: The company achieved a revenue of 262 million U.S. dollars, up 3% over the same period of last year, while its net profit was 23.77 million U.S. dollars, down by 21%.

USANA Health Sciences, Inc.
Consolidated Statements of Earnings
(In thousands, except per share data)
(Unaudited)

	Quarter Ended		Nine Months Ended	
	1-Oct-16	30-Sep-17	1-Oct-16	30-Sep-17
Net sales	$ 254,219	$ 261,765	$753,182	$ 774,151
Cost of sales	44,979	47,135	133,869	133,691
Gross profit	209,240	214,630	619,313	640,460
Operating expenses				
Associate incentives	112,816	116,010	335,541	350,195
Selling, general and administrative	60,591	67,263	176,986	193,653
Earnings from operations	35,833	31,357	106,786	96,612
Other income (expense)	268	690	(9)	1,632
Earnings before income taxes	36,101	32,047	106,777	98,244
Income taxes	6,003	8,278	28,618	29,858
NET EARNINGS	$ 30,098	$ 23,769	$ 78,159	$ 68,386

Greater China performance topped the world

USANA Greater China achieved revenue of 130 million US dollars in Q3, which means an increase of 5.5%, while the proportion of business has increased to 50.1%.

USANA Health Sciences, Inc.
Sales by Region
(unaudited)
(in thousands)

	Quarter Ended							
	1-Oct-16		30-Sep-17		Change from prior year		Currency impact on sales	% change excluding currency impact
Asia Pacific								
Greater China	$ 124,470	49.0%	$ 131,273	50.1%	$ 6,803	5.5%	$ 201	5.3%
Southeast Asia Pacific	54,351	21.4%	52,310	20.0%	(2,041)	(3.8%)	(1,197)	(1.6%)
North Asia	11,555	4.5%	15,708	6.0%	4,153	35.9%	(243)	38.0%
Asia Pacific Total	190,376	74.9%	199,291	76.1%	8,915	4.7%	(1,239)	5.3%
Americas and Europe	63,843	25.1%	62,474	23.9%	(1,369)	(2.1%)	1,198	(4.0%)
	$ 254,219	100.0%	$ 261,765	100.0%	$ 7,546	3.0%	$ (41)	3.0%

Coach change in China

Recently, Shi Binhai was officially appointed as the president of BabyCare Ltd. (hereinafter referred to as Babycare) and will take overall responsibility for business expansion and operation strategy in China to effectively promote the important functions, processes and systems of all markets in China.

2017 Yearly Outlook

The Company is updating its consolidated net sales and earnings per share for 2017 as follows——

Consolidated net sales approaching $1.030 billion

Earnings per share of approximately $3.70

Zheng Qunyi is Appointed as the President of Herbalife China

On October 13, Herbalife (NYSE: HLF) announced the official appointment of Dr. Zheng Qunyi as President of the Herbalife Group (China).

Rich Goudis, global CEO of Herbalife, said that Dr. Zheng's professionalism in nutrition and his confidence in Herbalife China makes him well-suited to lead our Chinese team and bring it to a new level. Herbalife China is the fastest growing sales area of the company, also an integral part of Herbalife's global strategy. We believe that Herbalife China will help more consumers have healthy and positive lifestyles and achieve steady growth under Dr. Zheng Qunyi's leadership. "

Zheng Qunyi himself said: "I have been to many countries around the world and I should say that no country or region can be as viable as today's China. But health problems, including obesity and under-exercising, are also serious problems China is facing today. I am very happy to be in a new role and look forward to contributing to the nutritional field in China so that more people will have a healthier body and a happier life."

Zheng Qunyi is a member of China's "Thousand Talents Program"; an executive member of Center For China And Globalization (CCG),a specially invited expert of "Hundred Talents Program" in Hunan Province; and also a member of Hunan's Second Academician Expert Advisory Committee. As part of the Herbalife nutrition management team, he joined Herbalife in 2010 as vice president of natural product manufacturing, making a significant contribution to Herbalife's "From Seed to Table" concept and has formed Herbalife Lebysop Hunan) Natural Products Co., Ltd. Prior to joining Herbalife, he was President and Chief Executive Officer of Pure World, Inc., president of a US public company, Kent Financial Investments and Kent Investment Holding.He is a Ph.D. of Organic Chemistry Engineering from Hunan University,also a Ph.D. in Chemistry of the University of Colorado and a postdoctoral fellowship at Cornell University in New York. He is also a Distinguished Professor at Hunan University, Central South University and Hunan University of Chinese Medicine. He has published several books and has more than 20 U.S. and International patents.

The 10 Major Events Affecting China's Health Food Industry in Future

2017 is nearly finished. What were the great events in the 3rd quarter just past that dominated the health food industry?

01 Influence ★★★★★

Nine Ministries Cracks Down on Health Food Fraud and False Advertising

A joint statement of *The Clean-up Plan on Fraud and False Advertising in the Food and Health Food Industries* issued on July 13th by nine ministries (the Food Safety Commission, the Ministry of Industry and Information Technology, the Ministry of Public Security, the Ministry of Commerce, State Administration for Industry and Commerce, General Administration of Quality Supervision, the State Administration of Radio Film and Television, China Food and Drug Administration, Cyberspace Administration of China) unveiled a forceful crackdown on false advertising, marketing fraud of the health food by year-end targeting the entire link of production, operation and sales of food and health food, the most intensified action in the industry following the "2013 crackdown on 4 illegal practices" and the longest-running specific project with the most departments involved and the widest scopes covered in recent years.

02 Influence ★★★★★

National Nutrition Program (2017-2030) Issued

The *National Nutrition Program(2017-2030)*, issued on July 13th by General Office of the State Council, was the first top-level design released on the future development of national nutrition and health, proposing "incorporating nutrition into all health policies". Nutritional science is the driving force and source of health food development and technology innovation, and the health food industry, in turn, is also an important industrial form of nutrition science and will become the pillar industry of national nutrition and health in the future.

03 Influence ★★★★

Public Opinions Solicited on Standards for the Examination and Publication of Drug Advertisements

September 29th , State Administration for Industry and Commerce issued *Censorship and Publishing Standards of Advertisements on Drugs, Medical Devices, Health Food and Formula Foods with Special Medical Purposes(Consultation paper)*, which tightened the rules on the health food advertisements published, a replacement, if approved, of Interim Provisions on Advertisement Censorship of Health Foods.

04 Influence ★★★★

National Standard on Health Food GB16740 to be Amended

September 29, National Health and Family Planning Commission issued the *2017 National Food Safety Standards Initiation Project (Consultation Paper)*, including two significant national standards of health food products: *National Food Safety Standard for Health Food (GB 16740-2014)* and *Good Manufacturing Practices on Health Food (GB 17405-1998)*, with National Institutes for Food and Drug Control and China Health Care Association as responsible organizations. The existing regulation of GB16740-2014 was released prior to *Amendment to the Food Safety law*, and GB17405-1998 was issued nearly 20 years ago, both the content and indicators may be substantially adjusted.

05 Influence ★★★★

Formula and Process of Registered Health Food Across China Open to Public

July 27, Guangdong Food and Drug Administration published the filing information of the health food product “SUNOTA folic acid supplement” (food and health food registered no. G201744000001), the first registered health food announced after the formal implementation of the “two-track system.” Statistics showed that, by September 30th, 57 health food products have been approved to put on file nationwide, with 48 announced, covering all the archival-filing materials, including the details of product ingredients, production technology, technical requirements and test reports.

06 Influence ★★★★

CR Sanjiu Acquires a 65% Stake of Shandong Shenghai

China Resources Sanjiu Medical&Pharmaceutical Co.,Ltd(000999) announced on September 12th the acquisition of 65% stake of Shandong Shenghai Health Products Co., Ltd. Shandong Shenghai is expected to see a rapid growth in the sales volume of health food after the acquisition, relying on CR Sanjiu’s great strength in terminal channels. This is a massive buying of a health food company by the pharmaceutical company after Pfizer’s acquisition of Treerly, setting up a benchmark for the pharmaceutical companies to enter the “Big health” and attracting more attention from the capital on the industry.

07 Influence ★★★

26 Groups of Materials and 10 Categories of Healthcare Functions Expected to Go To Catalogue

Public tenders were opened for the 18 special research projects on the catalogue of health food materials and health food functions, covering 26 groups of materials and 10 classifications of healthcare functions. The special subject of the research on the health food materials catalogue include the following materials: sea-buckthorn(oil), ginseng(red ginseng), American ginseng, gastrodia elata, pseudo-ginseng, ganoderma, ganoderma lucidum spore powder, goji berry, spirulina, ginkgo(ginkgo extract),carthamus tinctorius, astragalus, dendrobium, rhodiola rosea, fish oil, seal oil, cod liver oil, garlic oil, bovine colostrum, royal jelly,phytosterol (phytosterol ester), lycopene, co-enzyme Q10, melatonin + vitamin B6, squalene and cistanche deserticola. The 10 health food functions on the project list are antioxidation, relieving visual fatigue, defaecation, assisting to improve the memory, weight loss, auxiliary protective effect on chemical liver injury, Improving growth and development, removing chloasma, improving digestion, and Increasing bone density.

08 Influence ★★★

State Council Outlines Health Industry Development Action Framework

The State Council held an executive meeting on August 30th, which called for a heightened urgency for health care service industry and finalized for the first time 6 major measures to promote the development of health care service industries, with a priority of studying and formulating an action plan for the development of health care industry, scientifically defining the concepts, establishing the long-term mechanism about the support, promoting an effective integration of medical health with aged caring, tourism, sports and internet in a bid to build a full-featured and well-constructed industrial supporting system.

09 Influence ★★

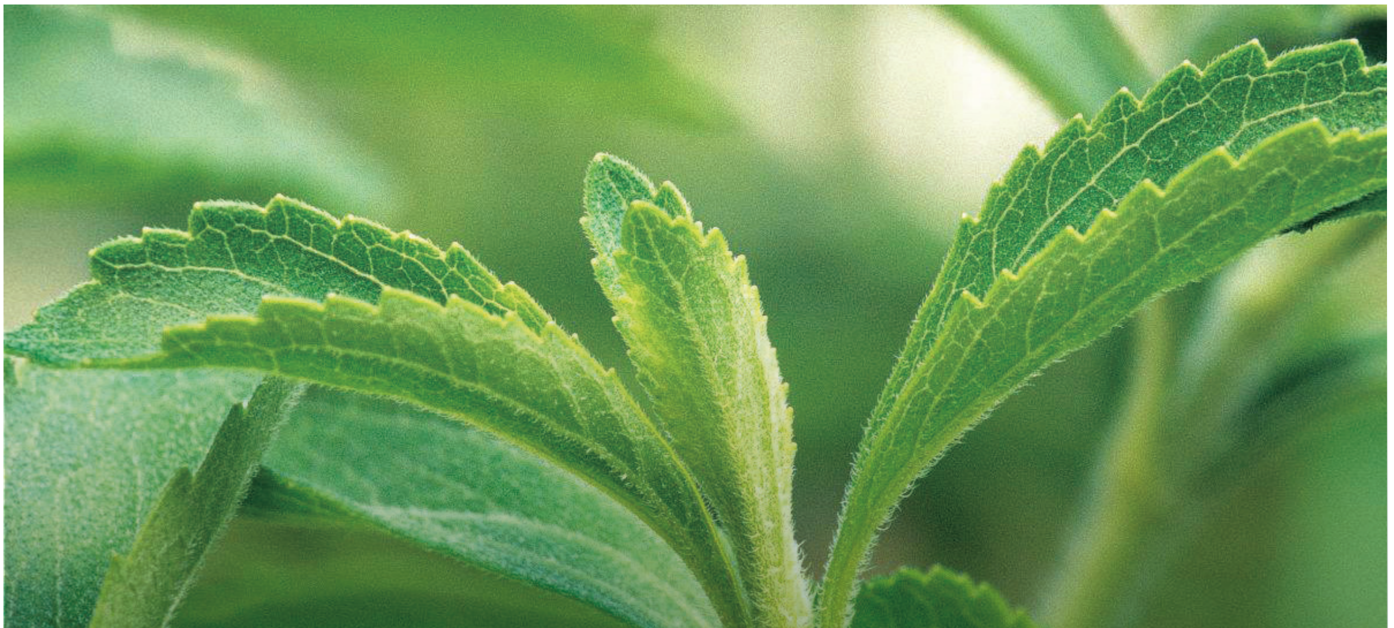
Regulatory Transition on Cross-Border Electronic Commerce Extends to the End of 2018

The State Council held an executive meeting on September 20th to call for an establishment of a comprehensive pilot region for cross-border e-commerce and an extension of regulatory transition to the end of 2018 on the cross-border e-commerce. At present, cross-border e-commerce has become a major strategic channel for overseas healthcare products to enter China. Another limited extension of the transition period indicates the government’s practical attitude in the management of the development of cross-border e-commerce business and also allows companies more preparation time. At the same time, the regulators are also expected to focus on the baby formulas, health foods and other products which require strict controls on the security-risk factors in the next rule-making.

10 Influence ★★

The First Plan for Production and Examination of Sports Nutrition Published

July 17, Beijing Food and Drug Administration released *Plan for Production and Examination of Sports Nutrition (hereinafter referred to as Examination Plan)* on the official website, the first normative document on admission of sports nutrition. The *Examination Plan* regulates the enterprise production, tagging and labeling and the use of additives, and is the necessary condition to finalize the *General Rules on Sports Nutrition.* ■



Drives the future! Stevia gets official approval for extended range of application.

Instant interpretation of provisions issued on December 29, 2017

On December 29, 2017, National Health and Family Planning Commission No. 13 Announcement of 2017 was promulgated :

To expand the scope of use of steviol glycosides, monascus yellow, cochineal, annatto and other natural source food additives.

Details are as follows:

Steviol glycosides

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Sweetener	01.01.03	modified milk	0.18	Calculated by equivalent weight of Steviol
	04.01.02.04	canned fruit	0.27	
	04.01.02.05	jam	0.22	
	06.04.02.01	canned whole grain	0.17	
	06.06	ready-to-eat cereals including rolled oats(flakes)	0.17	
	11.05	flavored syrups	0.91	
	15.02	mixed liquor	0.21	

1) Background information

Steviol glycosides, as a kind of food additive, had already been included in the National Food Safety Standard and Food Additives Application Standard (GB 2760) which allows its use in flavored fermented milk, frozen drinks, preserved fruit, cooked nuts and seeds, candies , cakes, condiments and other food categories.This application has expanded its scope of use in modified milk (food category 01.01.03), canned fruit (food category 04.01.02.04), jam (food category 04.01.02.05), canned whole grain (food Category 06.04.02.01), ready-to-eat cereals including rolled oats (flakes) (food category 06.06), flavored syrups (food category 11.05), and wines (food category 15.02). Codex Alimentarius Commission, the European Commission, the U.S. Food and Drug Administration, and Japanese Ministry of Health, Labor and Welfare allow it to be used as a sweetener in food products. According to the assessment result of JECFA, the acceptable daily intake of this substance is no more than 4 mg / kg · bw.

2) Process necessity

The substance is used as a sweetener in modified milk (food category 01.01.03), canned fruit (food category 04.01.02.04), jam (food category 04.01.02.05), canned whole grain (food category 06.04.02.01), ready-to-eat cereals including rolled oats (flakes) (food category 06.06), flavored syrups (food category 11.05), and mixed liquor(food category 15.02) to adjust product taste. Its quality and specifications should be implemented according to Food Additive Steviol Glycosides (GB 8270-2014).

Monascus yellow colorant

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Colorant	06.07	Instant rice and noodle products	Add as per production requirement	

1) Background information

Monascus yellow colorant, as a food additive, had been included in the National Food Safety Standard and Food Additives Application Standard (GB 2760) and is allowed to be used in cakes, cooked meat products, beverages, mixed liquor, jelly and other types of foods. In this application, its scope of use has been extended to instant rice and noodle products (food category 06.07). It is allowed by Japanese Ministry of Health, Labor and Welfare to be used as a colorant for food.

2) Process necessity

The substance, as a colorant for instant rice and noodle products (food category 06.07), is used to adjust the color of products. The quality and specifications should be implemented according to Food Additive Monascus Yellow Colorant (GB 1886.66-2015).

Cochineal

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Colorant	16.03	Collagen casings	Add as per production requirement	

1) Background Information

Cochineal, as a food additive, had already been included in the National Food Safety Standard and Food Additives Application Standard (GB 2760) which allowed its use in flavored fermented milk, modified milk powder, modified cream powder, frozen drinks, jams, candies, instant rice and noodle products, compound flavorings, beverages and other food categories.This application has expanded its scope to use in collagen casings (food category 16.03). Codex Alimentarius Commission, the European Commission, the U.S. Food and Drug Administration, and etc. allow it to be used as a colorant in food products. According to the assessment result of JECFA, the acceptable daily intake of this substance is no more than 5 mg / kg · bw.

2) Process necessity

The substance is used as a colorant in collagen casing (food category 16.03) to improve the color of the product.

Annatto

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Colorant	16.03	Collagen casings	Add as per production requirement	

1) Background information

As a food additive, annatto has been listed in the National Food Safety Standard and Food Additives Application Standard (GB 2760), and is allowed to be used in ripened cheese, processed cheese, margarine and similar products, frozen drinks, jam, chocolate and chocolate products, candies, instant rice and noodle products, bakery products, complex seasonings, beverages,and etc. This application has extended its use in collagen casings (food category 16.03). Codex Alimentarius Commission, the European Commission, the U.S. Food and Drug Administration, and etc. allow it to be used as a colorant in food products. According to the assessment result of JEFCA, the acceptable daily intake of this substance should not exceed 12 mg / kg · bw.

2) Process necessity

The substance is used as a colorant in collagen casing (food category 16.03) to improve the color of the product.

Soluble soybean polysaccharide

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Thickener	01.02.02	flavored fermented milk	6.0	

1) Background information

Soluble soybean polysaccharide, as a food additive, has been included in the National Food Safety Standard and Food Additives Application Standard (GB 2760), and it is allowed to be used in fat desserts, frozen drinks, rice products, wheat flour products, starch products, instant rice and noodle products, frozen rice and noodle products, baked foods, beverages and other food categories. This application has extended its use in flavored fermented milk (food category 01.02.02). Japan's Ministry of Health, Labor and Welfare allows it to be used as a food additive in food.

2) Process necessity

The material is used as a thickener for flavored fermented milk (food category 01.02.02) to improve product taste. Its quality and specifications should be implemented according to Soluble Soybean Polysaccharide (LS / T3301-2005).

Ascorbic acid

Function	Food Category No.	Food Name	Maximum Addition（g/kg）	Remarks
Antioxidant	02.01	Essentially water-free fats and oils	Add as per production requirement	

1) Background information

Ascorbic acid, as a food additive, has been included in the National Food Safety Standard and Food Additives Application Standard (GB 2760) and is allowed to be added as per production requirement in various types of foods. This application has extended its use in essentially water-free fats and oils (food category 02.01). The European Commission, the United States Food and Drug Administration, Food Standards Australia and New Zealand, Japan's Ministry of Health, Labor and Welfare, and etc. allow it to be used as an antioxidant in food. According to the assessment result of the JEFCA, the acceptable daily intake of this substance does not need to be limited.

2) Process necessity

The substance is used as a thickener for essentially water-free fats and oils (food category 02.01) to retard oil oxidation and deterioration. Its quality and specifications should be implemented according to Food Additive Vitamin C (ascorbic acid) (GB 14754-2010).

Information Source: National Health and Family Planning Commission Website ■

Pressure on Environmental Protection and Surging Price in Vitamin

Due to a strengthened environmental control, the active pharmaceutical ingredient producers stay on the edge of phase-out, from which the vitamin producers profit. Relevant plans released by 10 ministries such as Ministry of Environmental Protection and National Development and Reform Commission and 6 provinces and cities such as Beijing, Tianjin and Hebei stressed once again the supervision over the manufacturers of APIs which are going to cease operations. Beijing Business Today reporter found that the reduction or halting of production in API manufacturers has raised the prices of some of APIs,from which the vitamin producers benefit the most, seeing an increase in production performance in Northeast Pharm and other manufacturers.

Environmental control is heightening

The production of APIs often causes serious environmental pollution. Before the heating season started, the government ministries released plans for air pollution controls and stepped up efforts in environmental management. Recently, 10 ministries and commissions including the Ministry of Environmental Protection and National Development and Reform Commission, and 6 provinces (cities) including Beijing, Tianjin and Hebei jointly issued the *Crucial Action Plan for Comprehensive Governance of Air Pollution in Beijing, Tianjin,Hebei and nearby areas in Autumn and Winter of 2017-2018* (hereinafter referred to as the "Plan")in an effort to strengthen the environmental protection.

An improvement has been made significantly in strengthening environmental protection this year in comparison, with the governance scope of air pollution control expanding from 3 provinces(cities) last year to 6, which are now Beijing, Tianjin, Hebei, Shanxi, Shandong and Henan. The "Plan" explicitly refers to the pharmaceutical industries and specifies that the remediation will be basically completed by the end of October 2017 and the manufacturers which fail to complete the remediation shall be shut down and rectified according to the regulation; the approval and issuance of pollutant emission permits for the API production and other industries will be completed by the end of December 2017; the manufacturers which don't discharge pollutants according to the permit shall suspend production for rectification and get fined.

API manufacturers are the primary regulatory targets for the management of air environmental pollution. In 2016, the Environmental Protection Tax Law was introduced to change the environmental protection fee into Green tax and heavy taxes will be imposed upon heavy-polluting industries like API industry. The *13th Five-year Plan for Ecological Environment Protection*, introduced at the end of 2016, required the API manufacturing industry to promote reform of up-to-standard discharge for the industry.

Environmental management really has some impacts on the API manufacturers. North China Pharmaceutical announced in November 2016 that the company and its branches (subsidiaries) in Shijiazhuang City have suspended production in accordance with the "*Implementation Plan of Shijiazhuang Municipality on the Campaign Against Environmental Pollution*" and the requirements of the municipal government, with the APIs going to affect profit for the term of around ¥50 million.

At the same time, China Shijiazhuang Pharmaceutical Group, Shineway Pharm and Shijiazhuang No.4 Pharmaceutical said that they have received orders from the municipal government of Shijiazhuang and halted production.

Phase-out is speeding up

The elimination of domestic API manufacturers is accelerating on account of increasingly stringent environmental policies. Pollution control costs are gradually escalating, which caused a lack of investment in environmental control in some small and medium-sized pharmaceutical enterprises, resulting in reduction or halting of production because of substandard pollutant discharge. Small and medium-sized enterprises that are not able to upgrade their environmental protection equipment will be first eliminated.

According to public information, Taizhou, Zhejiang provice, is the concentration area of API manufacturers with more than 2000 pharmaceutical companies producing primarily APIs and pharmaceutical intermediates before the year 2001. Now only over 100 remained in the area after a shutdown of nearly 1000 pharmaceutical chemicals factories due to the strengthened environmental protection measures.

Under the increasingly strict environmental protection requirements, the backward enterprises with excessive emission, low-level and redundant industrial projects at the expense of environment are difficult to survive. The pollution treatments for the pharmaceutical companies cost up to hundreds of millions of Renminbi, forcing some of API manufacturers to consider a business transformation. Data shows North China Pharmaceutical opened the strategic transformation of "an innovation-driven development to achieve the transformation from APIs to medicine preparations" around 2011, followed by a focus on the 4 development fields which are "anti-infection, anti-tumor, cardio-cerebral vascular and immunoregulation". When China Shijiazhuang Pharmaceutical Group just went public, the main business is the APIs including penicillin, cephalosporin and vitamin C. Innovative drugs have now become the engine of growth for China Shijiazhuang Pharmaceutical Group.

Prices are soaring

With the tightening of environmental protection examinations, some API manufacturers were required to reduce or halt production, which led to an increase in the prices of APIs, bringing a direct impact on the business performance. As a result of rise in the price of vitamin, Northeast Pharm achieved net profit of ¥39.6967 million in the first half of 2017, an increase of 1162.03% from the same period of last year. Northeast Pharm said the price of leading product vitamin C has increased, and sales has somewhat decreased from the first quarter.

Garden Biochemical said primary product sales of IPO equity investment project products-cholesterol and 25-hydroxy vitamin D3 has risen significantly, which helped company achieve a net profit of ¥75.1889 million in the first half of this year, an year-on-year increase of 378.01%.Relevant data show that vitamin D3 prices rose from ¥70/kg since June to ¥425/kg in July, an increase of up to 456% so far in 2017, a record high in price. A number of companies have suspended offer for vitamin D3 for now.

How the price trend of vitamins affects the enterprises? What problems does the company face and what are the measures under the intensified environmental protections? Will the business performances keep rising due to increase in the price of vitamins resulted from production limitation or suspension? What are the future strategies for APIs and vitamin products? To the questions above-mentioned, Beijing Business Today reporter called and sent e-mails to the president secretary office of Northeast Pharm and Garden Biochemical, as of press time, unanswered.

Analysts said stringent environmental controls and examinations will be the norm in the second half of 2017. Currently the domestic market price has a strong supporting force and a certain amount of room to go up. Most of varieties of vitamins will continue the first-half trend to raise prices or to be within an expectation, which will contribute to a further improvement in the performance of vitamin enterprises in 2017.

According to Zhongkang CMH data in the first half of 2017, the sales volume of vitamin medicines, including vitamin B, vitamin A, vitamin AD, vitamin C, vitamin D, vitamin E, vitamin K, vitamin complex, vitamin and mineral compounds, reached as high as 19.3 billion yuan in the 5 terminal markets in 2016, an increase of 8.43% year on year. ■

Asian Market

Japan’s functional food labeling system Review

The functional labeling food system started from April 17, 2015 when the first product was announced. After 2 years and 3 months, the number of products accepted exceeded 1,000.

The number of companies which submitted applications has reached 300. Not only large enterprises, many small and medium sized companies, and companies in different industries had also made applications.

In particular, the market share of categories such as “eye protection”, “memory”, “mental fatigue” and “joints”, which are not yet accepted by the specific health food system, is continuously rising.

This article analyzes the 622 functional labeling food application cases which has been accepted by the end of July 2017 from the following three aspects of “functional appeal”, “related components” and “the applicants”.

The first functional labeling of food - Lion’s lactoferrin

1.Functional labeling product-tomato juice

2Functional Labeling Product-beer

Functional Labeling Product-canned fish

Following the resistance dextrin, number of GABA products exceeds 100

In terms of functional ingredients, resistant dextrins with high performance in the field of specific health food occupied an overwhelming majority and are used in all foods such as beverages, snacks, cooked or semi-finished products, seasonings,etc.

GABA,ranked the second, is recognized in specific health foods which has the role of inhibiting blood pressure. And in functional labeling with anti-mental fatigue as the main health claim,the number of acceptance of GABA products exceeds 100.

Ingredients recognized by functional labeling system such as Lutein(ranked 7), Ginkgo biloba(ranked 8), and glucosamine hydrochloride (ranked 10),etc.have increased.New potential demands are under continuous development.

Relative component ranking

Rank	Relative components	No. of products
1	Resistant dextrin	148
2	GABA	113
3	DHA	98
4	EPA	88
5	Bifidobacterium(Bifix,BB536,SP strain of lactobacillus gartenia,etc.)	66
6	Sodium hyaluronate	63
7	Lutein	57
8	Gingko Biloba Leaves flavonoids,polysaccharides	44
9	Ginkgo Biloba Leaves terpene lactones	43
10	Glucosamine hydrochloride	40
11	L-theanine	34
12	Acetic acid	27

13	Soy isoflavone	26
14	Glucosylceramide	25
15	Bilberry anthocynanins	24
16	Zeathanxin	23
17	Unmodified type II collagen	20
18	Astaxanthin	18
19	Salacia polyphenols(derived from salacia)	17
20	Coenzyme Q10(CoQ10H2)	16

Cognitive function and anti-mental fatigue products increased

In terms of functional appeal, resistant dextrins are widely used among the top 4 categories "sugar absorption and blood glucose levels","fat reduction (absorption inhibition)" ,"neutral fat" and "regulation of stomach and intestines".

Number of eye-protection related products with lutein, zeaxanthin, Bilberry anthocyanins as major functional ingredients also exceeded 100.

In addition, mental fatigue and stress related products have rapidly increased. As of this year, there were 52 cases of cognitive function and memory related products and 39 cases of mental fatigue related products.

Functional appeal ranking

Rank	Relative components	No. of products
1	Sugar absorption and blood glucose levels	187
2	Neutral fat	165
3	Fat reduction (absorption inhibition)	143
4	Digestive health(Intestinal environment)	136
5	Eye health(Fatigue,focus adjustment,blue light,etc.)	113
6	Blood pressure	95
7	Skin(water-retentive,Hydrator, heal dryness	94
8	Memory and cognitive function	70
9	Mental fatigue and stress	69
10	Joint health	58
11	Sleep	45
12	Fatigue	40
13	Bone health	34
14	Cholesterol	25
15	Blood flow and body temperature	24
16	Muscle	11
17	Eye and nose discomfort	10
18	Oxidation of blood lipid	2
19	Liver function	1
	Waste discomfort	

In terms of the number of products that companies applied for the listing, FINE, a company that focuses on medicine and drug stores and other pharmaceutical channels, took the first place by application of 62 items.

The second is Nippon Suisan, which takes common food as its key category and also varied.It has applied for 51 items and focused its sales on channels such as supermarkets and food systems.

Dongyang Pharmaceutical Co., Ltd. receives the largest number of approved cases for special functional health products.After the starting of functional labeling food system,it was once in the first place.It's functional labeling food OEM business has increased with ingredients such as resistant dextrins and gentian-derived isoflavones .

Consumer Affairs Agency,the monitoring organization for functional labeling food, have proposed strict posterior confirmation for the accepted products, and future policy changes and amendments deserve attention.

Applicant Ranking

Rank	Relative components	No. of products
1	FINE	62
2	Nippon Suisan	51
3	Dongyang Pharmaceutical	41
	Ezaki Glico	
5	Asahi Group Foods(food and health products)	30
6	UHA	24
7	Ito En	22
8	Morishita Jintan	20
9	FANCL	17
10	Mizkan	15
	Asahi Beer	
12	AEON TOPVALU	13
13	KAGOME	12
	Pokka sapporo(food and beverages)	
	KIRIN	
	Maruha Nichiro	
17	Mizkan Sanmi	11
18	OTSUKA PHARMACEUTICAL	10
	Fujifilm	
	DHC	

Korean health products market size increased 4.4 times in 10 years

File photo:a variety of functional health food in supermarket

Due to increase of income and health awareness,the demand for functional health foods is on the rise. According to a data released by the Korea National Statistical Office on the 4th, the functional health food market in South Korea has increased by 4.4 times in the past 10 years.

Data shows that in 2005 Korea's functional health food market was only 410 billion won, However, by 2015 it was 2.218 trillion won (about 127.7 billion yuan), with an increase of 4.4 times in 10 years. The market size of functional health food products increased year by year after exceeding 1 trillion won for the first time in 2008,and exceeded 2 trillion won in 2014.

Functional health products are divided into ginseng-related foods, health foods (including foods containing enzymes,aloe vera, etc.), and other health foods. By the end of 2015,ginseng-related food market was the largest with a value of 906 billion won, followed by other health foods (684 billion won) and health foods (628 billion won). ■

2016 Japan health food end-market scale classified by ingredients

Japan's health industry magazine recently released *results of survey on 2015 Japan Health food end-market scale classified by Ingredients.* Lactobacillus, Bifidobacterium (including yogurt and other ordinary food with health claims) market is reaching 600 billion yen, maintaining a steady growth.

The market of resistant dextrins, barley grass, glucosamine and DHA continued to grow. However, with the cooling of the mania from Asian tourists who are majorly Chinese, the market size of many ingredients has begin to decline.

Health food end-market scale classified by raw materials（Jan-Dec）

	Ingredient name	Market scale(billion Yen)	Year on year
1	Lactobacillus, Bifidobacterium	590	increase
2	Amino Acids	211	decline
3	Resistant dextrins	66	increase
4	Barley grass	58	increase
5	Collagen	52	decline
5	Prune	52	decline

7	Glucosamine	46	increase
8	DHA	41	increase
9	Black vinegar,aromatic vinegar	40	decline
9	Royal jelly	40	decline
11	Sesamin	39	increase
12	Plant fermentation essence	38	decline
13	Nucleic acid	32	decline
14	Bilberry	31	decline
15	Hyaluronic acid	29	decline
16	Kale	27	decline
16	Whey protein	27	increase
16	Tumeric	27	decline
19	Propolis	24	decline
20	Lutein	21	decline
21	Chorolla	19	decline
22	Noni fruit	17	decline
23	Catechinic acid	14	decline

Occupying the first place,the scale of lactic acid bacteria and bifidobacterium market has reached 590 billion yen, of course also include common foods such as yogurt with health claims, apart from dietary supplements. New words like “gut immune”, “intestinal activity”have been derived from lactic acid bacteria and bifidobacteria,and the importance of intestinal health has been well-known to the market. With the market recognization of bactericidal lactic acid bacteria, lactic acid bacteria and bifidobacteria have been applied to various common foods such as miso soup, fried noodles and snacks.

On the other hand, with the cooling off purchasing mania from Asian tourists, mainly Chinese tourists, the market saw a decline in raw materials in 2016. Collagen, enzymes (plant fermented essence), hyaluronic acid, etc. are the most effected markets, especially the enzyme market.

Nonetheless, the growing ingredients are resistant dextrins, barley leaves, glucosamine, DHA and whey protein. The reason is more complex: the increase of resistant dextrin is driven by many functional labeling food products using it as a functional ingredient, and the market recognition is getting higher.

Ranked the fourth, barley grass is the mostly used raw material in green juice.It has advantage in taste, turnover,number of product type, and price comparing with other raw materials. Green juice’s overwhelming sales channels are communication sales channels. Recently fruit green juices and other delicious green juices is getting increasingly popular.

Ranked the 8th, Market recognition of DHA is increasing, and as more and more functional ingredients are applied to functional labeling foods, over 100 functional foods have been labeled with DHA as a functional ingredient. ■

Artificial Intelligence + Medicine, Catastrophe? Future！

In recent years, the combination of artificial intelligence and medicine has given rise to numerous opportunities for innovation and startups, and also brought a new experience to medical treatment: computer vision can help doctors to read films during the examination of CT images. Machine learning can provide consulting services to patients on the medical process. “Voice medical records” free the doctor’s hands from writing medical records……

But medical industry, though with high threshold, multi process and complex issue, is the most special field that participates in the combination and application with artificial intelligence. The role of doctors, hospital management, the acquisition and use of medical data, etc., are all problems in technology advancement. Considering huge amounts of financial and human resources required, how much further should this cause go from future to reality?

What can AI bring to medicine?

The sub-forum”Wise Information Technology” was opened up October 13th on the Computing Conference which is known for cloud computing technology development.On the same day, Ali Health signed contracts with The First Affiliated Hospital of Zhejiang University School of Medicine, The Second Affiliated Hospital of Zhejiang University School of Medicine and Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine to jointly develop AI doctor’s assistant,”virtual patient” that can let medical staff practice, and “smart hospital” with the help of big data, cloud platform, entire process of mobile payment and others respectively.

“Our cooperation(plan) with Alibaba is to develop medical image reading robot, that is to say, let the robot read first CT,magnetic resonance and ultrasound images by big data analysis, or let the robot read films and records for a certain degree of diagnosis before doctor making a report.”Wang Weilin said the present AI computer vision technology can help doctors find suspected disease in advance during image screening of lung cancer, thyroid nodule and other diseases. An early detection of the problem helps reduce morbidity and mortality.

In fact, AI technology has got some achievements in aided diagnosis and therapy. Recently, China Youth Daily China Youth Online reporter saw that AI medical imaging auxiliary diagnosis system was able to achieve intelligent auxiliary diagnosis and inspection on chest CT and mammary gland molybdenum target images in Anhui Provincial Hospital, the first AI + medical “wisdom hospital”. According to Xu Geliang, the director of the hospital, the above-mentioned AI medical imaging auxiliary diagnosis system was developed jointly by the hospital and iFLYTEK, and was began to learned and put into use in June 2016. Since 1 year ago, the system, by studying 680,000 lung CT images, has assisted doctors to diagnosed CT images of some 11,000 patients in the CT Room of the hospital, with diagnostic accuracy rate of 94%.

In addition to computer vision, voice interaction between doctors and AI systems is also an important part of AI medical practice.Xu Geliang said, AI voice technology has been applied to a number of scenes such as ward rounds, ultrasonic examination, etc. An mobile app “cloud medical sound” which is used by the doctors of the hospital, not only support voice input of ward round records, but also track patients’ medical record information.

“The data entry of patients’ information, which used to take more than 10 minutes or even hours, can now be completed in an oral way.” Xu Geliang said the app “cloud medical sound” is used nearly 1 thousandtimes in the hospital every day.

Ali Health vice-president Zhang Liang believed that, with the support of accumulation of big data, AI + medicine is able to play a significant role in medical imaging, medication regimen, medical data, virtual patients,etc., such as simulating real patients

for doctors to learn the treatment and effect. “This is no longer a question-and-answer system but a brand new high-tech training system.”

However, in the medical industry, technology always needs to serve and help the doctor. Shenzhen Best Unimed Doctors Group Medical Co., Ltd.

founder Xie Rushi said that AI is a development direction of medical treatment service. However, technology should never replace doctors in any way,but sums up opinions and experiences of experts and doctors to improve efficiency.

“Is Watson (a cognitive computing platform developed by IBM) more rational? Is it going to be used? Decisions should be made by doctors.” In Xie Rushi’s view, AI is no more than a tool currently. It’s the doctor who leads medical conducts in the end.

Tao Xiaodong, general manager of iFLYTEK smart medical department, also believes the current AI is still at the stage of weak artificial intelligence and is not compatible with many of specific industry applications. “On the whole, the best way in the medical field presently is to take AI as an assisted diagnosis and treatment and adopt man-machine coupling.”

Data,data,data

AI + medical has become another big oppotunity for artificial intelligence to be applied to. But why this big oppotunity arrives today? According to Ali Health CEO Wang Lei’s analysis,the intelligence need of medical service has always been there. The reason why AI + medical becomes a big oppotunity today is that medical data’s collection, storage and processing capacity have developed to a certain stage.

Wang Lei believes that in the past few years, a large number of household appliances such as glucose meter, blood pressure monitor,bracelet and other devices have entered ordinary people’s life and collected a great dealt of data;hospitals are also aware

of the value of medical data and began to put medical data “on the cloud” (into cloud storage);the upgrade of cloud computing capability makes it easier to process the data which used to take a lot of time and effort; the new generation of AI technology, which is characterized by deep learning, has greatly changed the ability to process medical images and data.

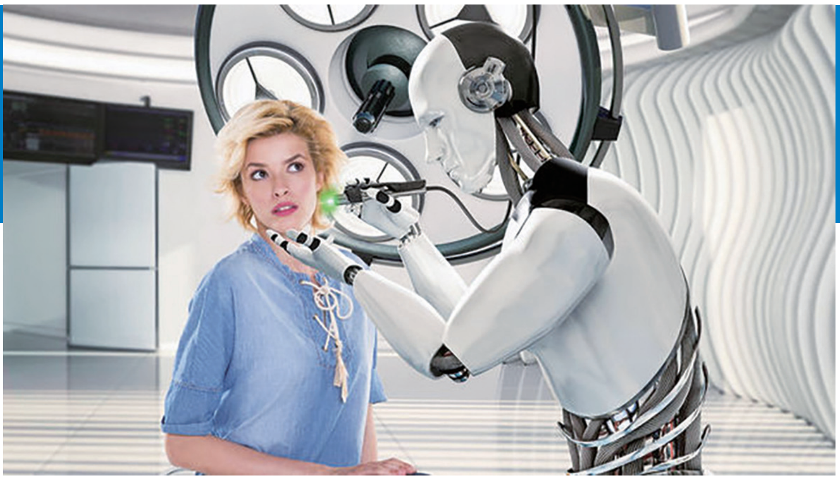
“This big oppotunity comes with more data, stronger computing power and more scenes.” Wang Lei said.

However, the acquisition and utilization of better medical data are not easy at all. A number of medical institutions and pharmaceutical companies have made some detours on the way of exploration of AI + medicine.

AstraZeneca IT department vice president Xu Jing said the biggest problem with AI + medical is the source and quality of the data at present. The medical data in China is often shared among hospitals, leaving information isolated islands between hospitals and families. The extraction and use of data is also concerned with a lot of manual operations even within the same hospital.

“Let me give you a very simple example. Although the information technology is quite popular today, somebody has to record and make the entry following the director on the ward rounds in the inpatient department.” In Xu Jing’s view, there are some serious problems in the quality of such handmade data.”

Chen Shengyu, vice president of Philips Healthcare Greater China, also shared the same problems with the utilization of medical data. “Different diseases or clinical examinations generate different data, which can be a serious problem if they are provided to algorithms without being standardized or structured.” According to his



observation, much of medical data has not been structured or standardized, making it the biggest bottleneck for the application of AI in healthcare industry.

Lu Xiaoliang, deputy GM of iFLYTEK smart medical department, has learned about the datamation and informatization of many hospitals. He found that all levels of hospitals in different areas have different intentions and investment in AI field. Taken all together, high-end private hospitals will be more motivated to get engaged in it owing to the high degree of datamation. iFLYTEK medical department is also considering cooperation with high-end hospitals such as United family," he revealed.

In addition to the source, access and utilization, the governance of medical data is also a major concern in the development of AI + medicine in the future. In China, there is no systematic regulatory requirement on the acquisition and utilization of medical and healthcare data which often contains a lot of individual privacy.

Song Xin, president of Medical & Healthcare Industry Branch of China Information Industry Association, revealed as Network Security Law was finalized and enforced, there will be a set of detailed supervision requirements on the collection, storage and market-oriented application of data and this will raise the bar for data integration.

Improving primary medical level is the key

In China, primary medical institutions are the nerve endings of the medical system, and the lack of hardware facilities and qualified personnel are the long-standing problems. As a result, many patients prefer to choose large or superior hospitals which are "more reliable" rather than go to the basic ones where they don't find it trusting in the level and capability. The graded diagnosis and treatment has not yet been fully implemented in many of places. In the case of imbalanced medical resources, whether AI + medical can take a greater role in the new reform of medical system may depends on whether the former helps improve the quality of "nerve ending".

Wang Lei said, how the application of AI + medicine specifically help the primary hospitals and improve the level of doctors is especially important. "It is an industry-wide challenge to turn a large amount of historical data and expert knowledge into mature products to help grass-roots doctors and junior hospitals of the medical treatment combination."

As one of the few grade 3 and first-class general hospitals in Anhui Province, Anhui Provincial Hospital started the system integration in August of AI imaging auxiliary diagnosis system, Anhui Province "medical imaging cloud" and Anhui Provincial Hospital medical treatment combination remote consultation platform, which provides intelligent auxiliary diagnosis and quality inspection services on chest CT and mammary gland molybdenum target images for 41 county-level hospitals in Anhui province.

According to Xu Geliang, the doctors of county-level hospitals may upload CT images directly to the provincial imaging cloud center for a result completed by the auxiliary diagnosis system in more than 10 seconds or even less, a supporting role in the diagnosis. In addition, the hospital affiliated to the hospital in Shannan Prefecture People's Hospital of Tibet, has also access to the platform. In addition, Tibet Autonomous Region Shannan Prefecture People's Hospital, supported dedicatedly by Anhui Provincial Hospital, has also accessed the platform.

Wang Weilin also expressed the hope for the improvement in the medical level of primary hospitals based on the cloud platform. One of his goals is to build an internal medical data "bank" in medical treatment combination that gathers medical data such as patients, diseases and treatment protocols before the desensitization and structured treatment. AI medical capacity is expected to cover lower-level hospitals radiates to a more grass-roots hospital. AI medical capability,originally limited to major hospitals, will cover more lower-level hospitals based on the platform.

He envisioned a "chain-like medicine" derived from this mode: it can optimize the quality of service in primary health care institutions, improve screening capabilities for high-risk diseases, relieve the imbalance in the distribution of social medical resources and improve the allocation structure.

But the concrete practice is still hard and long. After exchanging views with lots of grass-roots doctors, Lu Xiaoliang feels that it will take some time for the grass-roots doctors to accept, learn and use new technologies such as artificial intelligence. "We must have a clear understanding of this." ■

How to break through for the direct selling industry in the new economic era?

New retail, sharing economy ... In the new economic era, all industires have started the integration of online and offline, and direct selling industry is no exception. After many transformations, the direct selling industry began to enter the era of “direct sales + internet”. How to break through for the direct selling industry in the new economic era? To answer this question,three experts have put forward their own suggestions from different angles when interviewed by Nanfang Daily, such as proactively integrating into mainstream business and being product oriented,as the basis for their survival.

The value of social incubation of direct selling can not be ignored

Yang Qian, deputy director of the Research Center for Direct Selling at Peking University, said that for the Chinese direct selling enterprises, it is very important and urgent to get rid of the problem of pyramid schemes. The direct selling enterprises should get demystified, face the public with a more transparent attitude, and take the initiative to integrate into the mainstream business circle. At the same time, Yang Qian emphasized that direct selling is an industry with a long value chain. Whether it is a new retail or an unmanned one, the humanization and the joy brought by the service included in the value of consumption are irreplaceable. Direct sales can still make up for the services that e-commerce and retail shops can not provide. The value of social incubation of direct selling industry can not be ignored.

Direct sales industry attracts billions of funds

From a legal point of view, direct sales is a special way to sell goods. According to the direct sales management regulations, only manufacturers have the possibility to obtain direct sales license. In China, direct sales companies need to go through the administrative approval of the Ministry of Commerce to get the direct sales license.

“Direct selling companies are more typical entities, but the way in which products are sold differs from other entities in that they use non-employed direct sales personnel to sell their products while pyramid schemes are based on a pyramid fraud. MLM organizers set a so-called sales plan, and there is usually no product or the product is only used as a guise. “Yang Qian said that the public still has a some misunderstanding of direct sales and MLM. When direct marketing began to enter Chinese Mainland, there were indeed some illegal dealers who made fortune in the name of direct selling and were stopped by the government. Therefore, the community has a poor perception of the direct selling enterprises at the outset. On the other hand, the direct selling trades were indeed deteriorating. Fraudulent practices of some companies for increasing revenues had undermined the reputation of direct sales.

Although it seems that the direct selling industry has been wrapped in mystery, its role in promoting the social economy is still evident. “Direct sales industry has attracted tens of billions of capital investment, directly creating tens of thousands of jobs.” Yang Qian pointed out that at present, China’s direct sales industry has entered a legal orbit, approved by the Ministry of Commerce of nearly 90 direct sales companies. Among them, 57 Chinese-funded enterprises have greatly exceeded the number of foreign-funded enterprises in number and there are also some listed companies.

The model innovation of “real economy + retail service”

“Unlike foreign direct selling methods, China’s direct selling industry does not take the general retail model, but the real economy + retail service model.” Yang Qian said that the objective evaluation of the socio-economic value of direct selling industry is of great importance. He pointed out that the value of the direct selling industry mainly lies in four aspects: Firstly the value of the real economy: the development of the real economy is no doubt an important role of economic development. Secondly, the value of improving the industrial chain: the direct selling industry not only has large numbers of consumers, but also has a first-class manufacturing level, which determines that direct sales is an industry very long value chain;The third is the value of services. What makes direct selling industry different from general manufacturing is its direct service to terminal consumers. In today’s rapid development era of the Internet, whether it is the concept of “new retail” or “unmanned”, the humane and pleasure of service included in the value of consuming is irreplaceable,while direct sales can provide the service which e-commerce retail and shops retail shops can not; The Fourth id the value of social incubation. Direct marketing is the industry which uses social resources at the earliest,in another word, it is the earliest economy of social business platform. With entrepreneurship platforms provided by direct marketing industry, entrepreneurs can start from the sales of low-cost products, gradually accumulate experience and capital, and eventually have their own business.

How can direct selling companies break through existing difficulties? Huang Yingzi believes that the healthy development of the direct selling industry can not rely on “regulation” but “management, and “management” means that the industry should be self-disciplined. At present, the direct selling industry has not yet formed a nationally influential organization. And make the relationship within the industry clear is also important. “Huang Ying Zi always believe that being product-oriented is the fundamental survival factor of direct sales business. “Direct selling business covers a wide range of health products, skin care products, small appliances, and other six categories of products which can be sold through direct marketing channels.Companies must have the hit products that can survive and develop.” Huang Ying Zi said that the direct selling industry’s “sales” mechanism is a sharing mechanism, that is, direct sales companies will share the interests with consumers or distributors, and direct sales companies directly face consumers.The economic benefits mainly depend on the sharing among people. If the quality of the products of direct sales business is not good enough, it will be difficult to attract outsiders to buy, which will have great impact on developing new markets and finding new economic growth points for direct selling companies.

Direct selling enterprises can be more involved in public welfare

Direct selling companies have always had great enthusiasm for charity, their names are often seen in the major public welfare award-winning lists. According to Zhou Runan,director of Guangzhou Social Innovation Center, associate professor of School of Communication and Design, Zhongshan University, the biggest advantage of direct marketing companies is that they own strong human resources: a large sales force can be the first communication point, force, forming geometric diffusion.In the era of “public welfare 3.0”, direct selling companies will have a larger platform to get involved in the solution of social issues.

Influence of “People-oriented” public welfare

“Direct marketing companies are keen on public welfare, and I think this is related to the direct marketing enterprise’s organizational attributes and business ecology.” Zhou Runan pointed out that on the one hand, traditional enterprises pay more attention to one or more points in the business chain such as production, sales or service. However,the direct selling industry keens on the full coverage of business processes, producers direct docking consumers, and consumers also play a marketer role.As a direct-to-consumer biz, or a business model closely related to numbers of persons involved, direct selling has the natural advantage and needs of public service marketing; On the other hand, the direct selling industry is still bearing some social misunderstanding and even confusion with pyramid selling,thus the large direct selling companies also need to combine with public service to highlight corporate social responsibility and rebuild the public image.

“The biggest advantage of direct marketing for public service lies in its possessing of powerful human resource, and the huge sales force can be the first communication point, forming a geometric spread, covering large crowds and causing fission, to ignit the topic.” Zhou Runan said that good public service communication should be based on people’s real social needs rather than corporate marketing purposes. Good public service communication should also be based on human emotions instead of relying on the dissemination of ideas and channels.

Cross-over cooperation attemps in public welfare

Direct marketing companies play a unique role in the field of public welfare. How to continue to expand public service influence in the future development? “Stage 1.0 of public welfare development is traditional charity, the major relationship is between the donators and the recipients.Stage 2.0 is the public welfare of the present, and it is the professional public welfare for the service objects. Stage 3.0 is social innovation featuring cross-border cooperation. From simply giving to help recreate an ecosystem for reconciling public welfare and social issues. “Zhou Runan said that social innovation 3.0 has incorporated the core production processes of enterprises into the process of systematic solution to social problems and has broken traditional dualism of commercial and public welfare to achieve the ability and possibility of collaborative solution to the living problems, such as finding a suitable job for handicapped people in enterprises, in order to achieve the sustainability of public welfare. Zhouruanan suggested that direct sales companies should grasp the new trend in the field of public interest and make more attemps on cross-border cooperation.

“The current strength of CSR in China lies in the fact that a large number of small and medium-sized enterprises as welll as state-owned enterprises are beginning to have a sense of corporate social responsibility and are willing to put it into practice.” Zhou pointed out that many direct-selling companies have a sense of nourishing the society, but the problem is that there are more utilitarian thinking on fulfilling social responsibilities and it is largely thought of as part of branding or influencing external communications. Though undertandable, we should think more deeply about improving the ability of the enterprise system to solve social problems, and reducing the possibility of making social problems.

Zhou Runan finally pointed out that it is predictable that the shared economy will subvert the form and effect of corporate social responsibility. Traditional social responsibility is more of using a part of profits for the after-sales problem solving, the improvement of staff treatment and the maintenance of community relations.In the future, corporate social responsibility based on shared economy may consider the enterprise itself as the the starting point for solving social problems. Enterprises in the era of shared economy will become social enterprises themselves. For direct selling enterprises with strong social attributes, this is a new direction of development.

Construction of “Healthy China 2030” is heating up
Healthcare Industry Volume Will Exceed 10 Trillion by 2022

Healthy China, Health with you and me

September 29, 2017, the State Council Information Office published a white paper titled “Development of Health in China and Progress in Human Rights”, which said that a major progress has been made in building the medical and healthcare systems in 2016 and a basic medical and health service network covering both urban and rural residents has basically been established, with more than 980,000 of all forms of medical and health institutions at all levels, more than 11 million health workers and over 7 million beds in health institutions.China is seeing a continuous improvement in the development environment and conditions for the healthcare industry.

The health service industry has the following features: the medical service agency is the core; the health care products/pharmaceuticals, medical devices and diagnostic reagents/testing services are the supporting industries; and the commercial health insurance/commercial pension insurance, medicine service, medical information, mobile health care and online education are the supporting service system. The medical service agency, according to the life cycle,includes four types of institutions, which are health administration institution, hospital (general and specialized), rehabilitation center and nursing institution for the aged (geriatric hospital, nursing home and hospice).

Table 1: The main contents of health service industry

by service
Health examination,beauty care(including oral care),health consultation(sport,nutrition,psychological counseling and guidance in therapy and medication),health care service(targeted diagnosis for individuals,customized service, expert consultation and VIP service),escort nursing(non-medical service for the patient clients)
by service target
children’s health service, health service for middle aged and elderly people, female health service,reproductive health service,sub-health service,health service for high-income groups(gold collar workers),health service for white-collar(in the foreign company),community health service
by subdivision
medical treatment,insurance,fitness and exercises(fitness center,stadium,golf,bowling,sauna,gymnastics and martial arts),health care equipment(physical examination devices,sport measuring device,fitness equipment),healthy diet service,medical products,special equipment for physical examination,health service system(software and hardware),health information provider(media and internet consulting)

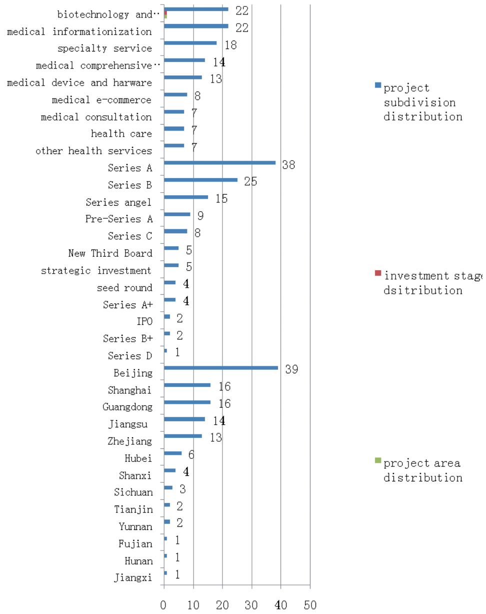
Development environment and conditions for the industry is improving

Infinite Vitality Bursting from Health Service Industry

Propelled by the capital, “Healthy China 2030”construction is heating up

Since 2017, the construction of “Healthy China” has been actively carried out throughout the country. From the perspective of investment and financing status, there were 118 investment and financing events in the medical and healthcare industry in the first half of 2017, among which 22 came from medical informatization, 13 came from medical devices, and 7, from the medical consultation and health care industry respectively. From the view of regional distribution, the first-tier cities such as Beijing, Shanghai, Guangzhou and Shenzhen are the concentration areas of financing events. For example, there were 39 in Beijing, and 16 in Shanghai and Guangdong respectively. The construction of “Healthy China 2030” keeps heating up.

118 projects in the healthcare sector got financing in the first half of 2017,



Supported by the policy, the development system health service industry is improving

Since 2012, China has kept stepping up the reform of the medical and health system, accelerated the comprehensive reform of public hospitals and promoted the price reform of medicines and medical services. The critical illness insurance for urban and rural residents has been fully implemented. The graded diagnosis and treatment system was actively built. And the policies on the production and distribution of pharmaceutical products have been improved.

October 29, 2015, Healthy China Construction was formally written into the communiqué of the Third Plenary Session of the 18th Central Committee of the CPC .

Since 2016, China has formulated and implemented a set of program plannings such as the"Plan for the Healthy China 2030", "National Fitness Program (2016-2020)", "the 13th Five-Year Plan for Hygiene and Health" and "the 13th Five -Year Plan for Deepening Reform in Medical and Health System", and laid out "three goals". Thanks to the policies, China is seeing an improvement in the development system of health service industry and the infinite vitality burst from the industry.

Three goals for Healthy China

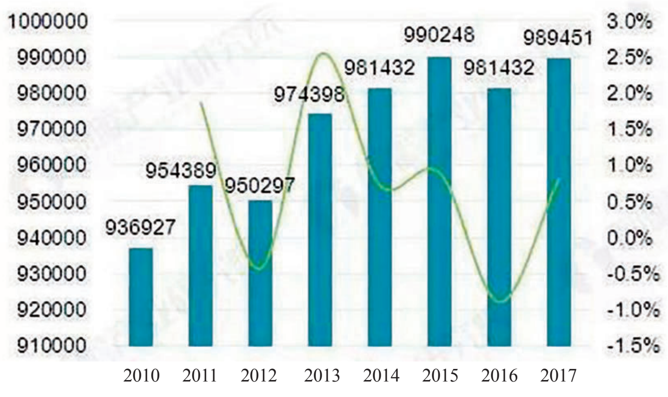
By 2020, China will establish a basic medical and health system covering both rural and urban residents, with the major health indicators among the top of the countries of medium and high income.

By 2030, the public health system will be more complete,with the main health indicators among rank of the high-income countries.

By 2050, a healthy country will be built to meet the need of Modern Socialist China.

Resources of health service system is increasing

From 2011 to 2015, China invested ¥42 billion, mainly supporting the construction of over 1,500 county-level hospitals, 18,000 township hospitals, over 100,000 village clinics and community health service centers. A significant progress was made in building the medical and health service system in 2016, including a basic medical and health service network covering urban and rural residents, more than 980,000 of all forms of medical and health institutions at all levels, over 11 million health workers and more than 7 million beds in public health institutions .



Medical institution (unit)

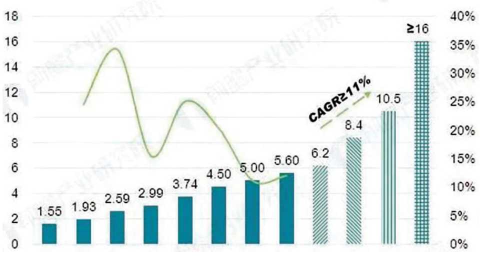
Year-on-year growth (%)

In 2016, there were 5,291,000 medical devices valued more than ¥10,000 nationwide, of which 125,000 valued more than 1 million yuan each. In 2016, the number of beds in the medical institutions increased by 395,000 from 2015, and the number of beds per 1,000 people reached 5.37 ,an increase of 358,000 in the hospital beds.

The market size of China's health service industry will exceed ¥10 trillion

With the sustained and rapid development of the national economy and the continuous improvement in the living standards of residents, the people's demand for health service is growing and the medical service market is expanding rapidly.

According to the Analysis Report on Market Prospects and Investment Strategic Planning for China's Health Service Industry 2017-2022 issued by Qianzhan Industry Research Institute, the market size of China's health service industry reached ¥5.6 trillion in 2016, setting a record high. In 2009-2016, the compounded annual growth rate of the industry reached up to 20.14%.



the market size of health service industry

year-on-year growth(%)

According to China's relevant policies and plans, the market size of China's health service industry will reach ¥8 trillion by 2020, and ¥16 trillion, by 2030. Combining the development status and the relevant policy planning of the health service industry, Qianzhan Industry Research Institute estimates that the industry is likely to see a CAGR of over 11% from 2017 to 2022 and a market size of more than ¥10 trillion by 2022.

Double 11 Health Consumption Preferences: Tibetan like oxygenerator, Inner Mongolian favor calcium tablets, Hebei people love bird's nest

Big data is best applied in traffic peak such as the Double 11 shopping fesitval. Your buying statistics are already calculated by the server of e-commerce platforms.

In the Double 11 this year,what are the favorite health product in China? What consumer preferences are shown in different regions and gender groups? Recently, Ali Health has released "Consumption Preference Map of Chinese Health Products" and "Map of Double 11 Health Consumption of Men and Women". Based on consumer data of the Tmall pharmacy, both maps revealed some the interesting consumer truth.

Strong demand on "wolfberry in the vacuum cup"

Consumption data from Tmall Pharmacy shows that people across the country have a high degree of commonalities in health spending: condoms, contact lenses, wolfberry, blood glucose supplies, honey and other categories has a large number of consumers and the biggest turnover, these categories are even called "National Health Rigid Demand " Wolfberry is among them- no wonder that it has become a symbol of mid-life crisis.

In addition to commonality, users in all regions have their unique material needs. The "Consumption Preference Map of Chinese Health Products" summed up in Ali's health survey reveals that residents in each of the 34 provinces, autonomous regions and special administrative regions have their own unique consumption preferences.

From Tmall's medical data, Shandong people, who live in a large donkey hide gelatin producing province, prefer to support economy of their hometown. Apart from those first-tier cities such as Beijing, Shanghai and Guangzhou, Shandong people themselves love to buy local specialty- donkey hide gelatin ointment. In contrast, the residents living in the nearby area of east China generally care more about beauty: Jiangsu, Zhejiang, Shanghai and Fujian have become the major consumption areas of products such as whey protein, collagen and grape seed vitamins,etc. - fitness, skin care and anti-aging demands are indispensable, so that the word of mouth saying "Jiangnan beauty" has been proved again by the e-commerce economy.

Let's turn to the southwestern region. In Sichuan, Chongqing and Yunnan Provinces, people love to buy joint-health specific products such as glucosamine, majorly due to the ups and downs of the topography and humid climate. The Tibetan people in the plateau across the province are in high demand for oxygen generators and oxygen bag products. Maybe the next time you go to Tibetan areas, you will find that the oxygen absorber used by Tibetan compatriots comes from Tmall Pharmacy.

In south China, people in Guangxi area have high enthusiasm on moxibustion products, and Hainan people's demand of plasters under the category of rheumatoid bone trauma suddenly boosts, may be the sea all arround and the humid air is the cause.

Men and women differ greatly in buying

"Map of Double 11 Health Consumption of Men and Women" that Ali released in the same period focused on the human body parts, and made a detailed analysis from the aspect of consumers' concerns.

According to the consumer data, the most concerned bodypart of men is muscle, and this also corroborated that fitness craze is coming.

From the aspect of body organs, men's high attention to the liver result in hot sale of liver protection tablets. In addition, male consumers contributed nearly 70% of purchases of condoms.

In contrast, for female consumers, the top five body parts concerned are eye, skin, intestine, lungs, and cervical spine. Among them, regarding the eyes,color contact lenses and eye drops are the girls' favorites, and others include collagen for improving skin elasticity, enzymes for promoting gut health and digestion, bird's nest for support Yin and lungs, and analgesic paste to ease cervical strain.

Stimulated by sufficient consumer products, consumer demand presents a linear surge. From the perspective of product building, the more precise the product classification are in the market, the more impact will be created to stimulate the demand of users. As the technology continues to be developed , the limitation of purchasing power has seen a trend of weakening.

Sales of Health Products in China Retail Pharmacies Are Slow

It is reported that within 10 minutes after the opening of the “Double-11” shopping festival at zero,November 11th, 41 cross-border health products including Ogilvy & Mather Gold pregnant women nutrients, Swisse calcium and etc.were already sold out. By 12:00am on November 11, among the Top10 sales brands on Alihealth platform, an Australian health products brand is the No.1 in volume. In the field of cross-border health products, such products in Alihealth’s overseas flagship store encountered mad rush.

However, compared to the popularity of online health products, offline health products sales have been in winter. It is known that pharmacies, as the main battlefield for the sales of health products, always maintain a low proportion of domestic sales of health products, and the overseas health products are even less visible in offline channels. Thus there is large space of growth for offline imported health products.

Insiders point out that it is difficult for imported health products to enter offline pharmacies because they have not applied for the Blue Hat Symbol “access card” , and the import health products companies are not familiar with the laws, regulations and administrative process China. The most important road block is that pharmacy consumer groups have little knowledge of imported health products.

According to a survey released by China Consumers Association in 2016, 41% of respondents think that the overseas health products are better than the domestic ones, doubles the number of consumers who think that domestic health products are better.

Although imported health products enjoys both higher online reputation and larger sales volume, in retail pharmacies, it is difficult for the core customers to buy the story.

Currently, pharmacies’ high-value customer groups are still the elderly, women and children. Among them, the middle-aged and the elderly contribute the majority of drugstore consumption. However, due to reasons such as language differences, purchasing channels, brand promotion and lack of introduction on functions, the middle-aged and the elderly show low awareness of overseas

health products brand with little understanding of imported health products. As a result of information asymmetry, business of imported health products at the pharmacy channel is still in its infancy, and there is a large potential for growth.

Precision Nutrition is Still in Early Stage of Development

As people are willing to pay more attention to their own health and nutrition, the focus of precision nutrition continues to heat up. In recent years, with the continuous improvement of people's living standard in China, the overall level of national nutrition has been significantly improved. However, China still faces the situation of coexistence of under-nutrition and over-nutrition, especially the prevalence and mortality rates of many types of major chronic diseases related to obesity and nutrition such as cardiovascular diseases, type 2 diabetes and certain cancers are on the rise.

In this context, precision nutrition has become the forefront and hot spots of research and industry development. It is understood that, unlike the precision medicine focused on diseases, precision health and precision nutrition is based on a variety of high-flux biotechnology and information technology, and is more concerned about prediction and prevention of diseases.

On the concept of precision nutrition, Zhang Xuguang, director of BY-HEALTH Nutrition and Health Research Center, introduced that the most basic principle of precision nutrition is to to give accurate nutrition and health intervention to the correct individual at the right time.

The latest precision nutrition concept is based on multi-level molecular information of multi-omics and new nutritional markers combined with other advanced technologies to analyze more systematically the impact of genetic and environmental factors on nutritional needs and health as well as the relationship and mechanism of interaction between genetic/environmental factors and the occurrence and development of disease, in order to provide a new strategy for promoting health and prevent nutrition-related major diseases.

Professor Chen Zhengming, director of the China project team at the Center for Clinical Trials and Epidemiology at Oxford University, said in an interview that individualized precision nutrition does not mean individualization--not that everyone is different. There are differences between people, but also commonalities, and the core of human life metabolism is the same. Moreover, extremely personalized products can not be produced as the costs will be too high.

In July this year, at the press conference of State Council's "National Nutrition Plan (2017-2030)" , the National Health and Family Planning Commission proposed to promote the development of the health industry and the nutrition industry on the basis of scientific nutrition with the help of cloud computing, big data and the Internet, to provide modern, accurate, scientific and convenient nutrition for health, and to achieve precision and modernization.

There are many basic tasks to be done for precise nutrition from research to application,e.g. basic research, mechanism research, group study and cohort research and the establishing of laws and regulations system. ■

Domestic High-end Water's Obstruction in Achieving Good Sales

domestic high-end bottled drinking water	Ganten Blairquhan natural drinking and mineral water 348ml	about ¥10/bottle
	NongFu Spring natural carbonated mineral water350ml	about ¥30/bottle
	Tibet 5100 glacier mineral water diamond package 500ml	about ¥10/bottle
imported high-end bottled drinking water	Evian 330ml	about ¥10/bottle
	Acqua Panna 750ml	¥19/bottle
	San Benedetto 750ml	¥16/bottle

Recently, Beijing Business Today reporter investigated and found that, contrary to the high positioning, the actual sales of high-end water is not that good.The launch of high-end drinking water products is the major move of the water companies in recent years, and bringing these high-end water products to high-level conferences is an important means for water companies to elevate the product grade. High-end water is only a side-line product for the domestic water companies, and medium-to low-end water is the main business, industry insider said. Launching high-end water merely for pushing up the brand grade without sales for a long period will pose a big pressure on the company. How to expand the channel to promote sales in the future will be the matter that the company has to consider.

Sales in Depression

In spite of "upgrade" in the water products by the water companies, which is an irresistible trend, the sales of domestic high-end water is low.

A press survey found that out of 5 types of premium mineral drinking water sold inTmall NongFu Spring official flagship store, the one with most number of payments are paid by 13 customers only, and the one with the highest monthly sales has 21 payments. In addition, the 5 NongFu Spring premium water products are all shown out of stock in the region of Beijing. In NongFu Spring self-run flagship store on JD.com, of the 6 types of premium water shown on the page, 4 are out of stock in Beijing though without sales posted. The sales of Ganten's premium product Blairquhan is not good either, 10 sold in a month in

Tmall Supermarket and an accumulation of more than 80 reviews only on JD.com. There are only 22 reviews for Tibet 5100 glacier mineral water diamond package 500ml at 5100 glacier water official flagship store on JD.com.

The poor sales of premium water is relevant to the high price. Beijing Business Today reporter visited BHG, Yonghui, Carrefour, Jingkelong and other supermarkets and found that domestic high-end water sells for a relatively high price. Ganten Blairquhan natural drinking and mineral water 348ml × 15 bottles sell for ¥148 inTmall, about ¥10 / bottle. NongFu Spring natural carbonated mineral water 350ml × 24 bottles sell for ¥720, around ¥30/ bottle. Tibet 5100 glacier mineral water diamond package 500ml × 24 bottles, sell for ¥239, about ¥10/ bottle.

Reporter found domestic high-end water is priced at a similar level to the imported ones, some domestic products even higher than imported one. Evian 330ml sells for about ¥10; Acqua Panna 750ml sells for ¥19;and San Benedetto 750ml sells for ¥16. In the price range of above ¥20, Sirma 330ml sells for ¥22 and VOSS 375ml, a premium water introduced by Reignwood Group, sells for about ¥25.

A supermarket sales staff told the reporter that premium water has not become a rage until these years, but consumers rarely spend more than 10 yuan to buy a bottle of water at supermarket.

At present, Ganten Blairquhan, NongFu Spring and 5100 premium water all opened online sales on Tmall, JD.com and other channels, but they are only supplied to high-end supermarkets or star hotels at offline sales channel. These products have not been rolled out across the country, only available at some hotels.

Unlike domestic premium water that just started business, the imported premium water brand Evian broke into the domestic consumer market long ago after several years' experience of cultivating the Chinese market, available in convenient stores, supermarkets, hotels and online platforms. According to head of 5100 glacier water, the diamond package is not rolled out across the nation yet, only available in some hotels.

Upgrade brand

Sales may not be the main purpose for water companies to launch high-end water products, while pushing up the brand grade may be the intention of the domestic companies. Beijing Business Today reporter learned except China Resources C'estbon, domestic professional water companies have all launched high-end glass bottled water, such as NongFu Spring, Ganten, Tibet Water Resources and other companies.

Blairquhan-the premium bottled water launched by Ganten was the exclusive

official drinking water at fashion night of 2017 Paris fashion week. In fact, this is not its debut at fashion event. Blairquhan made its first appearance at international brand conference of Shanghai Fashion Week in April as Les Hommes's sponsor and industry exclusive water. t is that Nongfushangquan launched high-end bottled water is intended for high-end conference. Unlike Ganten Blairquhan aiming at fashion world, the premium bottled water launched by NongFu Spring is intended for high-level conferences. A variety of NongFu Spring products became designated water for G20 Summit last year, high-end bottled water being one of them. NongFu Spring said high-end glass bottled water products aim for high-end supermarket and catering as the main distribution channels.

Launching premium water and making its appearances at high-level conferences by water companies reflects the fact that domestic premium water market is occupied aggressively by foreign brands. With the prevalence of Big Health industry, high-end water market is expanding. Coca-Cola and Reignwood Group have started to lay out domestic high-end water market, followed by domestic brands' move to earn a place in the market.

As for NongFu Spring, consumers reach more products selling for ¥2, a low class product in consumers' minds. Apparently NongFu Spring is looking to get the label of "low-end product" removed when it put the launch of high-end product on the agenda to elevate brand image. In 2015, NongFu Spring proudly unveiled 3 new products, including glass bottled water, drinking water for baby and mineral water for student, which are generally priced higher than the ordinary plastic bottled water of NongFu Spring. Gaten, claiming to be "noble of water", was not satisfied with current status and launched Blairquhan, even though it has middle-end products priced around ¥3.

Industry insiders believe that domestic high-end water business started relatively late, and domestic consumer's awareness needs to be further developed. As a result, domestic high-end water brands need to be endorsed by making constant appearances at fashion events or high-end conferences.

A relevant person in charge of 5100 glacier water told reporter the launch of diamond package product is mainly to open up foreign market, as well as a move to go with trend of product upgrade.

More than a loss leader

Early last year, NongFu Spring attempted to promote the high-end water jointly with 12 restaurants with average spending of ¥300-600 per person. In addition, NongFu Spring also launches custom-made bottled products of the year during Spring Festival every year, with these products given away for free to earn a good fame.

China Brand Research Institute food and drink industry researcher Zhu Danpeng said the launch of premium water is not only a help to brand improvement but also a degree of complement to product line. Getting a fame by the loss leader which is a short-sighted strategy, high-end water products still need to make efforts to develop more channels.

Marketing expert Li Xingmin also pointed out that high-end water products are advertised mostly with price tag, status symbol and conspicuous consumption, with grade greater than content awareness. It's not easy to advertise high-end water, usually with good results when referring luxury locations or KOLs. High-end water must go beyond being a "loss leader" to making some efforts on sales by expanding consumption channels.

How the domestic high-end water companies break the market gridlock in the future? Marketing specialist Lu Shengzhen believed NongFu Spring has made great efforts in high-end water market by focusing on brand image instead of sales in terms of promotion of products.When competing with foreign high-end water brands, domestic brands must replace "price war", the conventional way in the market, with devoting themselves to developing high-end channels, and separating high-end water brands from mid-low end ones with different market developments. ■

UNPA ASIA REPORT

A special section produced by the United Natural Products Alliance

THE U.S. OMEGA-3 MARKET—AND WHAT IT MEANS FOR CHINA

Also:

Special Report: U.S. Dietary Supplement Market Trends

- The changing nutrition landscape
- Supplement use rising among U.S. consumers

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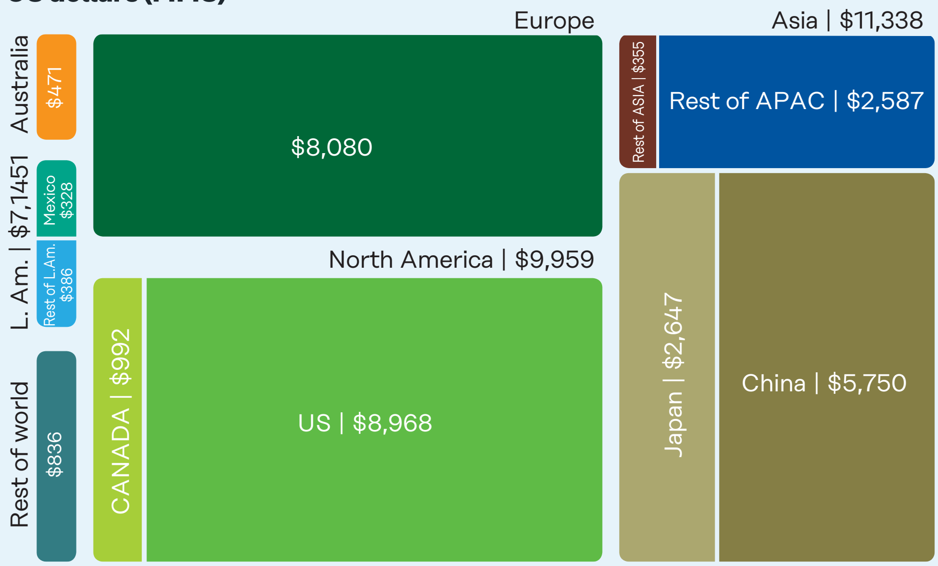
U.S. and China are top global omega-3 markets

2015 Global EPA+DHA finished product sales by region in millions of US dollars (MMS)



While the U.S. market is the largest global market, China is the second-largest single consumer of omega-3 products in the world, spending more than US$5.7 billion on omega-3 products, including supplements, infant formulas, fortified foods and other applications. Read more about the evolution of the omega-3 markets in both the United States and China, starting on page 10. Source: GOED

TCM in China sees sales of $130 billion

The Traditional Chinese Medicine industry grew by 20 percent in China this past year, according to the State Administration of TCM. With revenues of more than RMB860 billion (US$130 billion), the sector accounted for one-third of the country's total medical industrial output. The Chinese government passed its first law in 2017 on TCM to increase investment, training and growth, the agency said. **—Nutraingredients-asia.com**

China's Feihe International to buy Vitamin World

Chinese dairy products maker Feihe International Inc. will acquire the U.S. chain Vitamin World Inc. out of bankruptcy for $28 million, after the U.S. nutritional supplements retailer received no other bids, sources report. The deal makes Vitamin World, based in Holbrook, N.Y., the latest North American company in the vitamin sector to attract Chinese acquisition interest.

A growing awareness of health and wellness among Chinese consumers, combined with a lack of confidence in China's safety standards, has spurred the country's companies to look overseas to acquire supplement makers. **—Reuters**

China TCM company, Rong Yu, seeks to be first ASX-listed company

China-based TCM manufacturer Rong Yu Pharmaceuticals is aiming to be the first TCM company listed on the Australian Securities Exchange. Viewing Australia as an important market for its products, the company intends to raise US$15 million to $20 million in an initial public offering and then register its products with the Therapeutic Goods Administration, the agency that oversees dietary supplements in Australia. The registration will help provide a basis from which to exports its products outside of China, the company noted. **—Nutraingredients-asia.com**

Natural Products Center to collaborate with Beijing Hospital

The National Center for Natural Products Research (NCNPR) at the University of Mississippi and Beijing 302 Hospital of China have signed a memorandum of understanding to collaborate on the quality of Traditional Chinese Medicine.

The Institute of Chinese Herbal Medicine Beijing, located at the hospital, analyzes traditional medicines taken by hospital patients and screens for any contaminants that may have contributed to a patient's condition. As per the agreement, NCNPR will use its technology and expertise to help with the chemistry-related needs of this analysis.

"This certainly plays to the strength of our program at NCNPR," said Ikhlas Khan, Ph.D., the center's director. "Our experience analyzing complex natural products will allow us to look at the quality of the products used in Chinese medicine. **—University of Mississippi News**

Ikhlas Khan (center), director of the University of Mississippi National Center for Natural Products Research, meets with officials from Beijing 302 Hospital to set up a formal collaborations between the groups.

IBM and Walmart launching Blockchain Food Safety Alliance with Fortune 500's JD.com

In a move to apply Blockchain technology for food traceability to support offline and online consumers, IBM, Walmart and Chinese retailer JD.com, together with Tsinghua University National Engineering Laboratory for E-Commerce Technologies have announced a Blockchain Food Safety Alliance collaboration to improve food tracking and safety in China.

By collaborating with one of China's largest retailers, a Fortune Global 500 company, and their suppliers, the latest effort is touted as helping to bring a safer food supply to China, and an extension of the work initiated by Walmart and IBM earlier this year in the U.S. Ten food suppliers and retailers—including Dole, Nestlé, Tyson Foods, Unilever and Walmart—signaled their intention to collaborate. **—*Forbes* magazine**

USP test showed only one in four Reishi products as genuine

Only five out of 19 supplement products labeled as Reishi mushroom purchased in the U.S. could be verified as genuine Reishi mushroom, according to a new study from the U.S. Pharmacopeial Convention (USP) and the University of Macau, in China.

Using a "reliable and scientific toolkit," the team found that most products that failed the tests lacked characteristic triterpenoids and had a starch-like polysaccharide profile that was inconsistent with Reishi mushroom (*Ganoderma lucidum*). The researchers used highly accurate testing methods, including HPTLC, Colorimetric method, GC-MS, and High Performance Size-exclusion Chromatography. **—Nutraingredients-usa.com**

2018 Trade Shows & Conferences

NutraIngredients' Probiota & IPA World Congress 2018
February 7-9 • Barcelona, Spain

Nutraceuticals Europe Summit & Expo
February 14-15 • Madrid, Spain

UNPA FSVP Training
February 28-March 1 • Salt Lake City, Utah

Natural Products Expo West
March 7-11 • Anaheim, Calif.

International Conference on the Science of Botanicals
April 9-12 • Oxford, Miss.

SupplySide East
April 10-11 • Secaucus, N.J.

Vitafoods Europe
May 15-17 • Geneva, Switzerland

World Tea Expo
June 11-14 • Las Vegas, Nev.

IADSA 20th Anniversary Week
June 19-21 • London

SupplySide China
June 28-30 • Guangzhou, China

Institute of Food Technologists 2018
July 15-18 • Chicago, Ill

NBJ Summit
July 16-19 • Rancho Palos Verdes, Calif.

Vitafoods Asia
September 9-11 • Singapore

Natural Products Expo East & All Things Organic
September 12-15 • Baltimore, MD

SupplySide West
November 6-10 • Las Vegas, Nev.

For more information, visit www.unpa.com/events.

Industry gathers to explore potential of natural ingredients in China

Nearly 400 industry members gathered in Handan, China, this past October for the sixth annual China Natural Ingredients Conference, hosted by Herbridge Media and the Chinese Chamber of Commerce. Among the topics discussed were Chinese and U.S. regulatory changes that could impact the industry; new technologies for extraction of nutritional ingredients; and science related to the health effects of probiotics, prebiotics and medicinal mushrooms.

United Natural Products Alliance President Loren Israelsen spoke to the assembly about the changing U.S. regulatory paradigm governing nutritional ingredients and import. Specifically, he discussed good manufacturing practices compliance, how the Food Safety Modernization Act has impacted the market and opportunities for China to "brand" its ingredients for acceptance in the U.S. market. Of particular importance is focusing on traceability and messaging about sustainability.

In addition, Sherry Wang, president of IngredientsOnline.com, discussed how technology is impacting the supply chain for nutritional ingredients. Wang echoed Israelsen's comments regarding the importance of traceability and illustrated how users of her company's platform can get real-time information about ingredients, including pricing, availability and quality certifications. **—NaturalProductsINSIDER**

The growing holistic appeal of TCM in the United States

By Karen Raterman

Once considered a niche medical protocol with little scientific substantiation, Traditional Chinese Medicine (TCM) is now experiencing growing interest and usage in the United States. The growth is driven by a convergence of factors, centered on the movement toward a more integrative approach to health.

Exports of proprietary TCM accounted for 7 percent of the total export value of Chinese medicine products in 2015 and posted growth of 4.7 percent year-over-year to US$262 million. In 2015, the United States was the fastest growing key export market for TCM, and its share has increased from 8.0 percent in 2011 to 14.3 percent in 2015, according to Hong Kong-based GF Securities in an October 2016 equity report.

Wilson Lau

According to Wilson Lau, vice president of the NuHerbs Co., based in San Leandro, Calif., there is an ongoing shift away from conventional western medicine toward alternative solutions in general, especially with the growing prevalence of chronic health issues that are not being adequately addressed by the allopathic paradigm.

"This has been building for a long time," Lau said. "Previously, you might have seen people who were at the end of their rope in terms of health solutions who would look to TCM as a last resort. Now you have people looking for these solutions at whatever stage they may be at in their journey."

Growing respectability

Beyond this change in philosophy, consumers now view TCM as a safe, respectable option, according to Roy Upton, RH, DAyu, founder of the American Herbal Pharmacopoeia, who is also a practicing herbalist trained in TCM. "The majority of core users and a large number of middle-tier natural health consumers want safer alternatives and know this is provided by TCM," he said. They also view TCM as a viable option to complement conventional therapies, particularly for those fighting cancer, who want natural therapies to give them a better chance of survival, he noted.

The practice of TCM is legal in most U.S. states and practitioners are required to obtain three to four years of post-graduate study at an accredited institution. Most states also require a national board certification, similar to that of medical doctors. Although TCM would not be considered mainstream, its respectability is more widespread than other alternative methodologies, such as naturopathic medicine, which is only approved in 19 states, and herbal and Ayurvedic medicine, neither of which are formally accepted in any state, Upton noted.

Challenges remain

There are, however, still challenges for TCM in the United States. Perhaps, most critical is the compliance and quality of TCM products entering the U.S. market. The biggest problem, Lau said, is companies that are not well versed in the legal requirements for importing products to the United States. "Companies need to do their homework to make sure what they are bringing in is a compliant product that is suitable for the U.S. market."

> "Companies need to do their homework to make sure what they are bringing in is a compliant product that is suitable for the U.S. market."

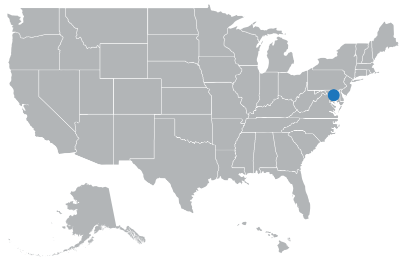
Beyond product quality, TCM faces other issues. There is a perceived lack of "gold standard" (double-blind, placebo controlled) evidence establishing efficacy; TCM is not covered in the national healthcare reimbursement system; and the practice is concentrated in specific areas, so access to practitioners is lacking. TCM is also difficult for many U.S. consumers to understand culturally because it is so widely different from the Western system.

Nevertheless, the future for TCM in the United States does look bright. "It will continue to rise in popularity as people see and learn of its benefits," Upton said. "If [TCM] is ever integrated into state and federal healthcare reimbursement programs, the flood gates will open." ■

Meet the regulatory agencies that oversee dietary supplements in the U.S.

Within the United States government, there are several agencies, whose key missions are to safeguard the public health, protect agricultural resources, and benefit economic security and fairness within the domestic and global dietary supplement marketplace.

With interrelated and cooperative responsibilities, these Washington, D.C.-based agencies are tasked to provide a broad safety net for the American people, as well as for people throughout the world.



Food and Drug Administration

FDA is responsible for protecting the public health by assuring that most foods, including dietary supplements and cosmetics, are safe, wholesome, sanitary and properly labeled.

FDA regulates both finished dietary supplement products and dietary ingredients through the Office of Dietary Supplement Programs, created in 2016. FDA regulates dietary supplements under a different set of regulations than those covering "conventional" foods and drug products. Under the Dietary Supplement Health and Education Act of 1994 (DSHEA):

- Manufacturers and distributors of dietary supplements and dietary ingredients are prohibited from marketing products that are adulterated or misbranded. That means that these firms are responsible for evaluating the safety and labeling of their products before marketing to ensure that they meet all the requirements of DSHEA and FDA regulations.
- FDA is responsible for taking action against any adulterated or misbranded dietary supplement product after it reaches the market.

The U.S. Department of Agriculture

USDA is made up of 29 agencies and offices with nearly 100,000 employees, who serve the American people at more than 4,500 locations across the country and abroad.

USDA administers the regulations overseeing the growing of foods, food ingredients and botanicals used in dietary supplements, and additionally, it oversees the U.S.' certified organic program. The agency provides leadership on food, agriculture, natural resources, rural development, nutrition and related issues, based on public policy, the best available science and effective management.

Federal Trade Commission

FTC oversees the integrity of marketing and many of the advertising claims made by the dietary supplement and natural products industry in the United States.

FTC works to protect consumers by preventing anticompetitive, deceptive and unfair business practices, enhancing informed consumer choice and public understanding of the competitive process and accomplishing this without unduly burdening legitimate business activity.

It is the only federal agency with both consumer protection and competition jurisdiction in broad sectors of the economy. FTC pursues vigorous and effective law enforcement; advances consumers' interests by sharing its expertise with federal and state legislatures and U.S. and international government agencies; develops policy and research tools through hearings, workshops, and conferences; and creates practical and plain-language educational programs for consumers and businesses in a global marketplace with constantly changing technologies.

Drug Enforcement Agency

While not directly related to the legal dietary supplement industry in the United States, DEA does oversee the enforcement of regulations related to products posing as dietary supplements that may be tainted or otherwise unsafe due to the presence of illegal or misbranded drugs.

The mission of the DEA is to enforce the controlled substances laws and regulations of the United States and bring to the criminal and civil justice system of the United States, or any other competent jurisdiction, those organizations and principal members of organizations, involved in the growing, manufacture or distribution of controlled substances appearing in or destined for illicit traffic in the United States; and to recommend and support non-enforcement programs aimed at reducing the availability of illicit controlled substances on the domestic and international markets.

Compiled by the UNPA staff and U.S. government websites.

The state of the U.S. probiotics market: From market value to consumption habits

By Stephen Daniells

With growth outpacing all other dietary supplements, probiotics are one of the hottest categories in the U.S. health and nutrition space.

While the total (global) probiotic market in food and yogurt is growing with a compound annual growth rate (CAGR) of 8 percent, according to Euromonitor International, the market for probiotic dietary supplements is growing at 11 percent and will close at more than $5 billion (U.S.) in 2017.

The United States, with its robust dietary supplements market, is the leading region for probiotic supplements, estimated at $1.9 billion in 2016. Probiotic supplements reportedly account for 13 percent of the total U.S. dietary supplement market, which is second only to Italy among the top five growth markets for probiotics, Euromonitor data suggests (see chart).

American consumers spend more per capita than any other nation, with an average of $5.26 per capita, compared to $2.30 in Canada, and only $0.30 in Brazil. The U.S., Canada and Brazil are the top three markets in the Americas for probiotic supplements (see chart).

Usage rising

Speaking at a recent workshop in Washington D.C., hosted by the International Probiotics Association (IPA), George Paraskevakos, IPA's executive director, noted that more than 33 million U.S. adults take probiotics, with 44 percent consuming probiotics from dietary supplements only, while 28 percent consume products from food only, and the other 28 percent consume the beneficial bacteria from a combination of food plus supplements.

The majority of probiotics dietary supplements are capsules, but there is significant innovation in delivery formats within the sector, with brands exploring the potential of gummies, chews, melts and shots to deliver viable daily doses.

There has also been innovation within the food and beverage space, with manufacturers incorporating probiotics into a range of products from pizza crusts to fruit juices, and from teas to cold-brew coffee. The majority of these products use the spore-former bacteria, such as Ganeden's BC30 (*Bacillus coagulans* GBI-30, 6086) or Sabinsa's LactoSpore (*Bacillus coagulans*, MTCC 5856) to enable the probiotic to survive the production process.

Striving for health

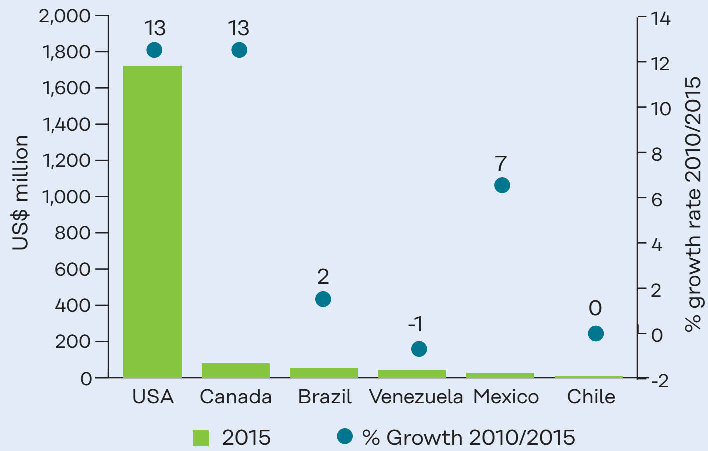
The IPA also commissioned a consumer survey by Kantar Media to better understand the main reasons American consumers are using probiotics. The data revealed that the top reason was "to achieve good health." Other top reasons were to lose or maintain weight, lower/maintain cholesterol, and control blood pressure. These are consumer opinions and not related to claims being made on the products in the market.

IPA's Paraskevakos expects the United States to remain the most dynamic market for probiotic supplements, with high consumer awareness, deepening scientific substantiation for probiotic efficacy and innovative delivery formats continuing to drive the sector.

"Looking elsewhere, Latin America and Asia/China are ready to take off, provided the regulation revisions being considered in many of those regions are apt to address probiotic supplements and foods," said Paraskevakos. ■

Stephen Daniells, Ph.D., is the editor-in-chief, North and South America, for William Reed, publisher of NutraIngredients *and organizer of the Probiota series of events, including Probiota Americas, Probiota Asia, and Probiota Europe. For information about Probiota, visit www.probiotaamericas.com.*

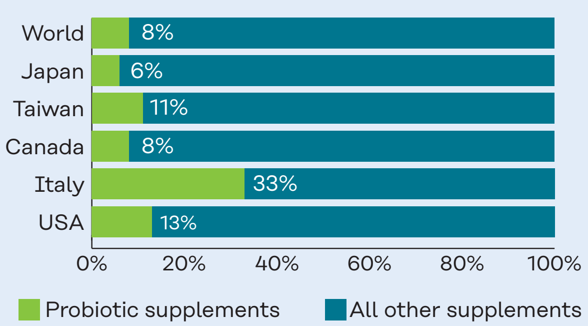
Probiotics retail value sales and growth



The U.S., Canada and Brazil are the leading global markets for probiotics, but Americans are the top shoppers, spending $5.26 per capita.

Source: Euromonitor International

Share of probiotics vs. total supplements: top five key growth markets



The United States is the leading market for probiotics supplement sales, reaching U.S.$1.9 billion in 2016.

Source: Euromonitor International

FSMA Overview: The Foreign Supplier Verification Programs

U.S. importers are required to verify that foreign suppliers meet federal standards

Compiled by the UNPA staff

Foreign Supplier Verification Programs (FSVP) is one of seven provisions of the Food Safety Modernization Act (FSMA), the most sweeping reform of the food safety laws in the United States in more than 70 years. According to the U.S. Food and Drug Administration (FDA), FSMA aims to "ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it."

FDA
Food Safety Modernization Act

FSMA is the key to a new generation of food good manufacturing practices (GMPs) based on the Hazard Analysis Critical Control Point (HACCP) principles of "anticipate, prevent, and validate." It aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it, based on HACCP.

Larisa Pavlick

"Much of the dietary supplement and food industry is learning about this new rule after the initial compliance dates were reached last year," said Larisa Pavlick, United Natural Products Alliance VP of global regulatory & compliance. "These new rules and expectations make sense and are scientifically based to modernize our approach to providing quality products. This law will ultimately help ensure a safe food supply, including dietary supplements."

Under FSMA, certain importers in the United States are responsible for developing FSVP to provide adequate assurances that their foreign suppliers, including those from Asia, are producing food, including dietary ingredients used in dietary supplements, in compliance with processes and procedures that provide at least the same level of public health protection as those required under section 418 (Hazard Analysis and Risk-based Preventive Controls) or section 419 (Standing for Produce Safety) of the U.S. Food, Drug, and Cosmetic Act. Additionally, the law helps ensure that the supplier's food is not adulterated and is not misbranded with respect to allergen labeling.

Who or what falls under the FSVP requirement?

For the purposes of FSVP, an importer is the U.S. owner or consignee of a food offered for import into the United States. If there is no U.S. owner or consignee, the importer is the U.S. agency or representative of the foreign owner or consignee at the time of entry, as confirmed in a signed statement of consent.

For what actions are importers responsible?

Importers are responsible for actions that include:

- Determining known or reasonably foreseeable hazards with each food
- Evaluating the risk posed by a food, based on the hazard analysis, and the foreign supplier's performance
- Using that evaluation of the risk posed by an imported food and the supplier's performance to approve suppliers and determine appropriate supplier verification activities
- Conducting supplier verification activities
- Conducting corrective actions.

Does every importer need to have an FSVP?

Yes, importers are required to develop, maintain and follow an FSVP for each food brought into the United States and the foreign supplier of that food. If the importer obtains a certain food from a few different suppliers, a separate FSVP would be required for each of those suppliers. Similarly, if the importer obtains many different foods from a single supplier, a separate FSVP would be required for each food with unique hazards.

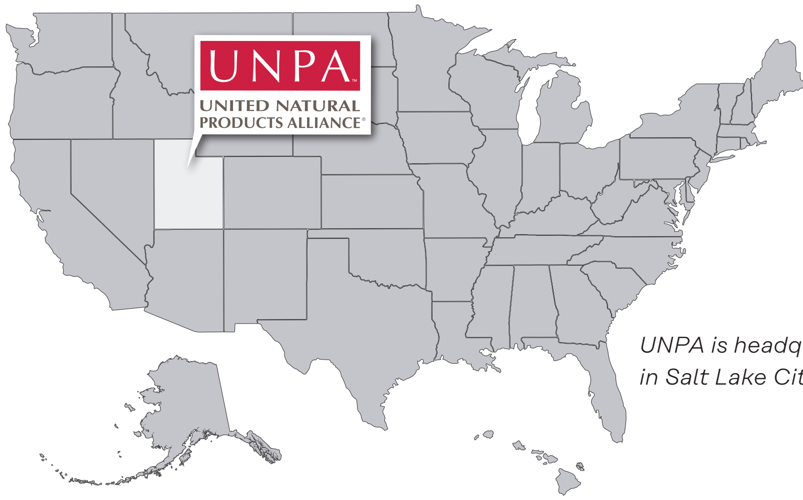
"FSVP places the responsibility on the importer to verify that their foreign supplier is meeting FDA expectations for quality and safety of the products you distribute for consumption in the United States," Pavlick noted. "For our industry, this means either 21 CFR Part 117 for food products, raw materials used in dietary supplements and for dietary ingredients, or 21 CFR Part 111 for dietary supplements."

UNPA will be conducting FSMA training, including FSVP courses, throughout the year. Visit unpa.com for more information and to register. ■

UNPA works to create partnerships in China

By Frank Lampe

What is the value of relationships? In business, they're extremely important as they form the foundation of long term, trusting partnerships. And in business between organizations in countries each half a world apart, they're crucial.



UNPA is headquartered in Salt Lake City, Utah

Building solid relationships with federal and provincial governmental agencies, business and trade associations, academic institutions and companies in China is a major priority for the Salt Lake City-based United Natural Products Alliance (UNPA), as part of its long-standing initiative to develop solid, lasting business opportunities for companies engaged in the manufacturing, sale and marketing of dietary supplement ingredients and products in both the United States and China.


Loren Israelsen

"Our organization hopes to play a key role in helping to create bridges of understanding about the markets, the consumers and the regulations in each country to better facilitate commerce and the sale of quality products in each country," said Loren Israelsen, UNPA president.

Building bridges

To that end, UNPA last year signed a partnership agreement with the China Nutrition and Health Food Association to promote research, technology and cultural exchange of the U.S.-Sino natural products industry and the industry's orderly and sustainable economic development and to strengthen U.S.-Sino product regulation and market access. UNPA also hired Daniel Mabey (see profile, below) as its Asia general manager, and has been involved in a number of conferences, meetings and service projects across China.

Israelsen will be a speaker at the upcoming China Health Industry Technology Forum, Jan. 22, in Beijing.

"We appreciate that China is likely the second-largest market for dietary supplements in the world, and it supplies more than 60 percent of the botanical ingredients for supplement products sold in the United States," Israelsen said. "As an industry, we should all be thinking in terms of global consumers and the global supply chains, and the best way to do that is to build sustainable business relationships that benefit all parties." ■

Meet the UNPA staff: Daniel Mabey

Based in Beijing, China, Daniel Mabey serves as UNPA's Asia general manager. In this role, he primarily coordinates the association's relationship with its memorandum of understanding partner, the China Nutrition and Health Food Association, and works with China-based UNPA members, as well as Chinese companies looking to expand into international markets. Daniel also provides UNPA members with market research, regulatory support and other services.

He has more than 10 years of experience working in China and also speaks fluent Mandarin Chinese. While living in China, he has become fond of common health traditions, such as drinking green tea and enjoying regional specialties, such as sea cucumbers and cordyceps.

Daniel is very optimistic about the future of UNPA in China and the huge demand for U.S.-made health products in China and Asia.

He earned a double major in philosophy and East Asian languages and civilizations from the University of Pennsylvania and studied abroad at Peking University and Tsinghua University. Daniel's main intellectual interests are the history and philosophy of science and emergent properties, a phenomenon whereby larger entities arise through interactions among smaller or simpler entities, such that the larger entities exhibit properties the smaller/simpler entities do not exhibit. Emergence is an essential concept for thinking about complex systems like human health, nutrition and the ecosystem.


Daniel Mabey

After learning about the work of Paul Stamets' research in mycology, Daniel has been very interested in the collective organizing principles of fungi, as well as their effect on neural networks. In his free time, Daniel enjoys hiking, skiing and cooking, and he plans to start studying more about Traditional Chinese Medicine. ■

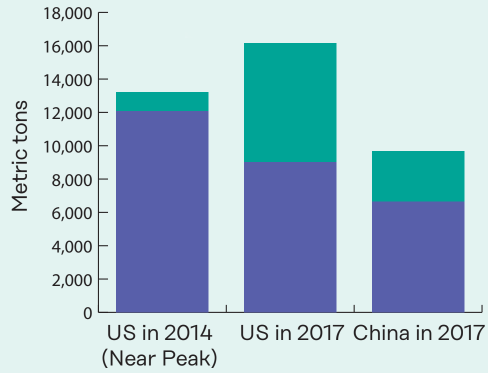
The evolving U.S. omega-3 market—and what it means for China

By Adam Ismail

The markets in both countries are similar, but growth drivers in China are unique

While the U.S. market is the largest global market, consumers in China represent the second largest market for omega-3 products, spending more than US$5.7 billion on supplements, infant formulas, fortified foods and other applications. Comparing the two markets is important because China will ultimately become like the U.S. if the current market dynamics continue.

Consumption of concentrated vs. refined omega-3 oils



The Chinese market is maturing, as consumption of standard refined oils begin to slow.

Source: GOED

After nearly three decades of 10 percent to 30 percent growth rates, the U.S. market has stagnated with annual growth falling to less than 1 percent for the past few years. The primary challenge in the U.S. today is finding ways to bring new consumers into the market. The traditional consumer lifecycle for American omega-3 users has involved a new consumer trying a lower-value product, like a standard refined fish oil capsule, with a fairly high proportion of those consumers later upgrading to a premium product that better meets their needs, such as one with a higher concentration of omega-3s or in a novel product form, such as an emulsion.

There are signs that this is happening today in China, where consumption of higher-value concentrates are increasing by approximately 300 tons per year, more than the standard refined fish oils.

Effects of market saturation

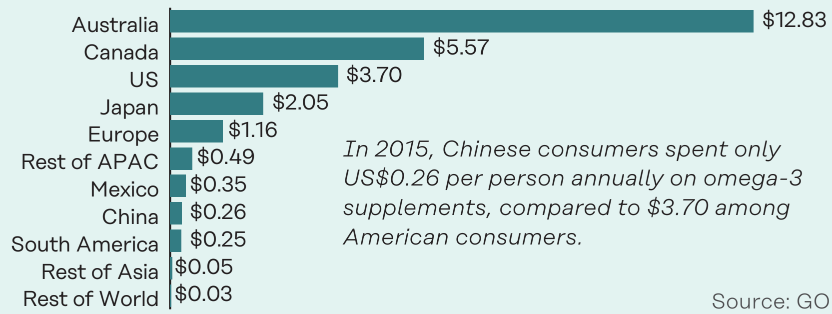
The problem with this consumer lifecycle model is that after decades of strong growth, the market reaches a point of saturation, where the most easily converted consumers have already tried an omega-3 product, and bringing new consumers to the market becomes increasingly more difficult.

In the U.S., the market reached this saturation when concentrated omega-3 products accounted for 28 percent of the market, and consumption of standard refined oils began to decline. In China today, concentrated omega-3s hold a 26 percent share of the market, and growth of standard refined oils is behind the rest of the omega-3 market at an increase of 4.1 percent annually. So, while China is still clearly bringing new users to the market, there are signs that the omega-3 consumer lifecycle issue could be present in the Chinese market in the near future.

The Chinese omega-3 market does have many positive factors that are different from the U.S. market though, and these should not be discounted. For one, historical growth in the United States was driven by consumer awareness of omega-3s, growing from very low levels to nearly 100 percent of the population having heard of omega-3s. In China, consumers have already largely been educated about omega-3s, and increasing disposable income is instead driving growth. As more Chinese migrate to cities and steadily improve their quality of life, they seek out products that they already know, like omega-3s.

Most economists predict this growth in disposable income will continue for some time and could fortify the omega-3 category. This growth potential should not be underestimated. In 2015, Chinese consumers spent only US$0.26 per person annually on omega-3 supplements, compared to $3.70 in the United States. Products are priced similarly in both countries, so the Chinese market could literally grow by more than 14 times just by reaching the same consumer spending levels as in the United States.

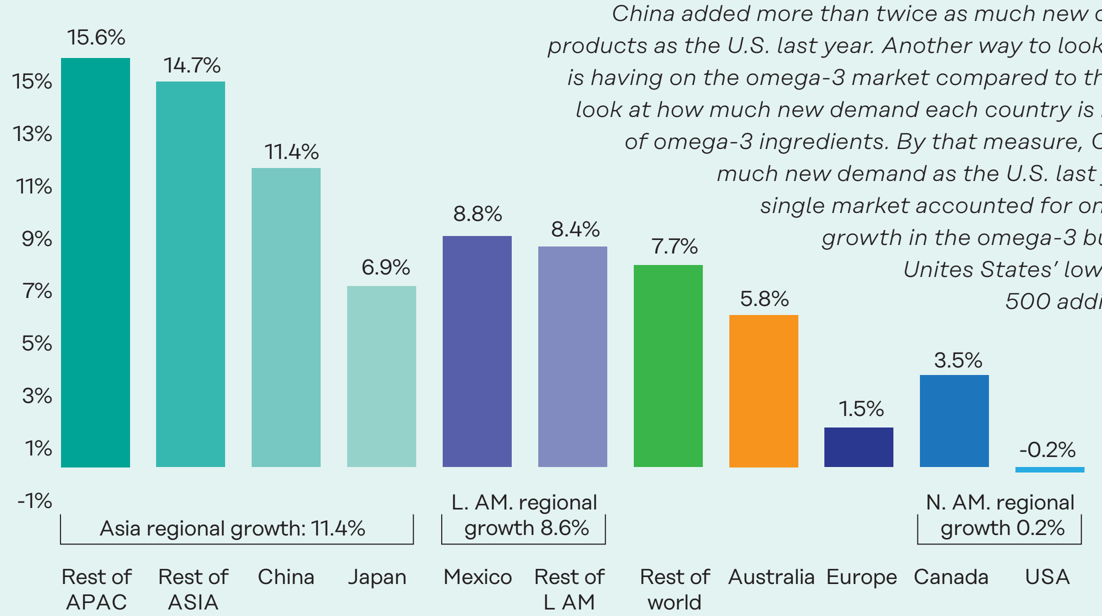
Per capita spending on omega-3 supplements by world region
(in 2015 in US$ per person)



In 2015, Chinese consumers spent only US$0.26 per person annually on omega-3 supplements, compared to $3.70 among American consumers.

Source: GOED

EPA+DHA finished product projected annual growth through 2017, by world region



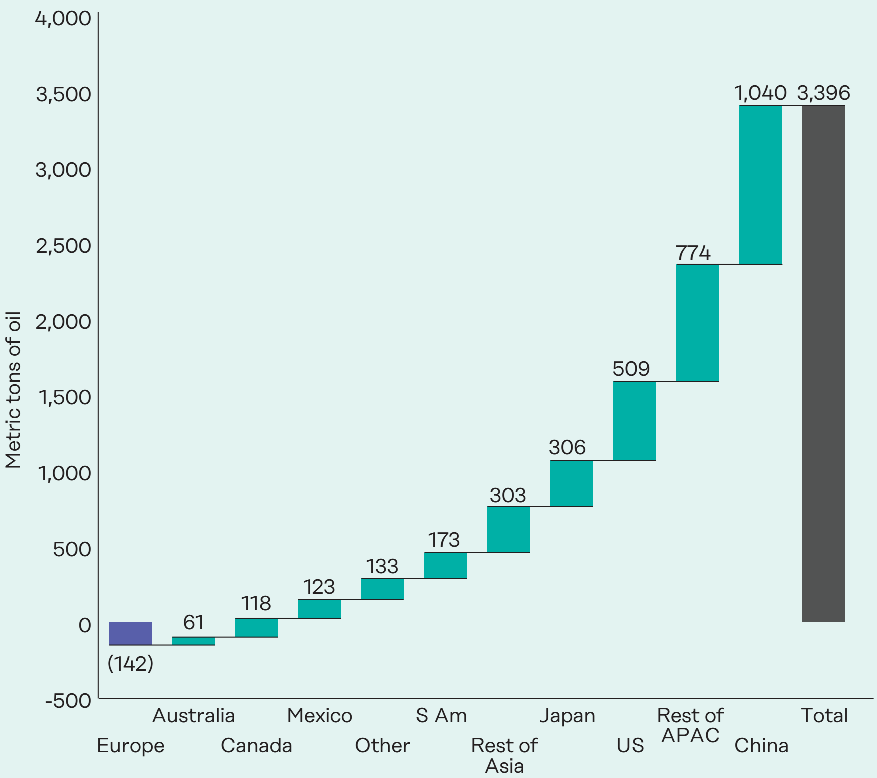
China added more than twice as much new demand for omega-3 products as the U.S. last year. Another way to look at the impact China is having on the omega-3 market compared to the Unites States is to look at how much new demand each country is bringing to suppliers of omega-3 ingredients. By that measure, China added twice as much new demand as the U.S. last year. Incredibly, this single market accounted for one-third of the global growth in the omega-3 business, whereas the Unites States' low growth only totaled 500 additional metric tons of omega-3 oils.

Source: GOED

Growing Chinese consumption

China is already well on its way to reaching these levels of consumer consumption. In addition to being the second largest single market for omega-3s in the world, China was also the fastest growing through the end of 2017. This has caused much of the omega-3 industry to turn its attention to China and the rest of Asia, rather than focusing on regions with lower growth. In fact, many of the ingredient manufacturers in the omega-3 industry have shifted their sales and marketing strategies entirely to Asia, but the same is true for some consumer brands, as well. Using e-commerce channels, a few international consumer brands have built larger omega-3 businesses in China than in their home markets. This is primarily due to a regulatory construct that allows consumers to purchase directly from brands, but this is a loophole that will eventually change, and it is unclear how this will affect U.S. brands trying to grow in China.

2016 projected global omega-3 ingredient volume increase by geography



China accounted for one-third of the global growth in the omega-3 business, whereas the U.S.' low growth only totaled 500 additional metric tons of omega-3 oils.

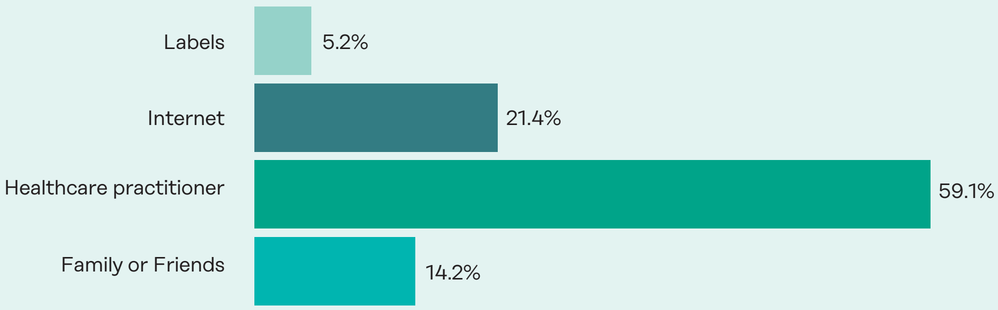
Source: GOED

> "Many of the ingredient manufacturers in the omega-3 industry have shifted their sales and marketing strategies entirely to Asia."

However, one thing is clear in the omega-3 space: three of the largest omega-3 brands in the United Sates are now spending more marketing dollars in China than in the United States.

Another way to look at the impact China is having on the omega-3 market compared to the Unites States is to look at how much new demand each country is bringing to suppliers of omega-3 ingredients. By that measure, China added twice as much new demand as the U.S. last year. Incredibly, this single market accounted for one-third of the global growth in the omega-3 business, whereas the Unites States' low growth only totaled 500 additional metric tons of omega-3 oils.

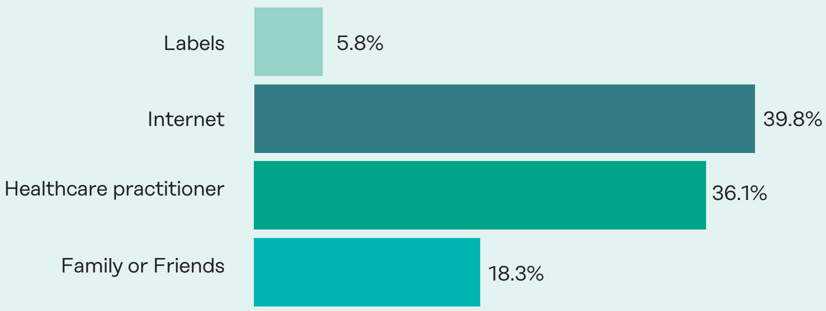
Top sources of health information for U.S. consumers



American consumers still rely most on health practitioners for health and supplement information making it more difficult for manufacturers to cultivate new users.

Source: GOED

Top sources of health information for Chinese consumers



Reliance on digital sources of information for health advice in China should allow companies to react quickly to changes in the marketplace and provide a bright future for omega-3 products in China.

Source: GOED

A different consumer

For Chinese companies trying to enter the U.S. market, or for American companies trying to enter China, it is important to understand how consumers differ in each market. In the U.S., nearly 60 percent of consumers say their primary source of health and nutrition information is the doctor, whereas in China the internet is the leading source.

American consumers also tend to be more concerned about managing specific health conditions, with 37 percent of consumers stating that heart health, brain health and sleep are their top concerns. In China, where family structure is tied together more strongly, the leading health concern is the health of other family members, with 52 percent of consumers stating this is their most specific concern.

Additionally, 45 percent cited maintaining energy as one of their top concerns. Both of these reflect the rapid change in the Chinese economy from an agricultural model to a modern economy and are part of the reason why omega-3s and other supplements have grown so rapidly.

In summary, the U.S. and Chinese markets for omega-3 products are in very different places today, but many of the trends that highlighted weaknesses in the U.S. market are starting to appear in China, as well.

There are some important trends in China that make it unique from the United States, and as long as the economy continues to deliver greater wealth and standards of living to the Chinese population, the market for omega-3s should continue to grow. Additionally, the reliance on digital sources of information for health advice in China should allow companies to react more quickly to changes in the marketplace and provide a bright future in China. In the U.S., this is not the case, and marketing programs need to focus on bringing new consumers to the market. Otherwise, intense competitive battles will be fought for a static or shrinking base of users. ■

Adam Ismail has served as executive director of Global Organization for EPA and DHA Omega-3s since March 2007. At GOED, he has overseen the membership grow from 12 companies to over 200 today and worked on projects such as overturning a ban on fish oil imports into Europe and establishing health claims for EPA and DHA in countries around the world. For more information about GOED, visit goedomega3.com.

U.S. Dietary Supplement Market Trends

From pills to food: The changing nutrition landscape

By Karen Raterman

Since the passage of the landmark Dietary Supplements Health and Education Act of 1994, the United States has long enjoyed a vibrant and growing market for dietary supplements. It has also faced many challenges, from strong and organized detractors to issues of consumer trust. But as 2018 dawns, the industry seems to have overcome many of these challenges and is now seeing an all-time high in consumer usage and consumer trust.

According to the annual survey from the Council for Responsible Nutrition (CRN), the "2017 CRN Consumer Survey on Dietary Supplements," 76 percent of U.S. adults report use of dietary supplements, and nine in 10 have confidence in the safety, quality and efficacy of these products.

Evolving market

That said, the industry also lies at the center of growing consumer interest in health and product awareness, coupled with an information-empowered population that is demanding specifics about the products they consume. These shifts in demand are driving changes in consumer preferences around product usage and delivery formats and a desire to obtain nutrition from a broader base of products, including foods.

These changing preferences are impacting products sales in the nutrition category, according to data from *Nutrition Business Journal's* "2016 Supplement Business Report." Although supplement sales are predicted to remain strong—with double-digit growth at 16 percent—the growth of natural and organic foods, as well as functional foods, will see significantly higher increases of 49 percent and 24 percent, respectively, by 2020.

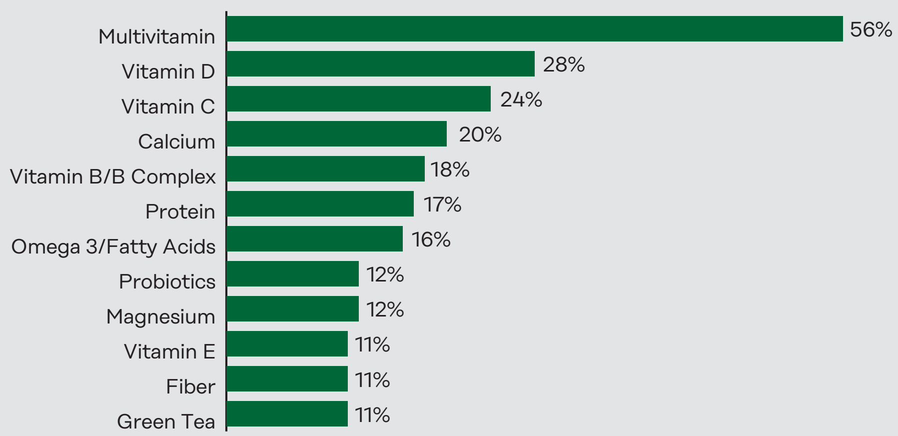
As a result, the industry is evolving quickly and working to meet these demands with new product innovations and increased research on ingredient and product efficacy. The following is an overview of some of the key developments and trends in the U.S. market.

Solving unique problems

Pill fatigue, consumers' dislike or inability to swallow tablets and capsules, is giving rise to new supplement-delivery formats. From beverages and liquids to effervescent powders and stick packs, manufacturers are addressing this challenge with various, sometimes unique, technologies.

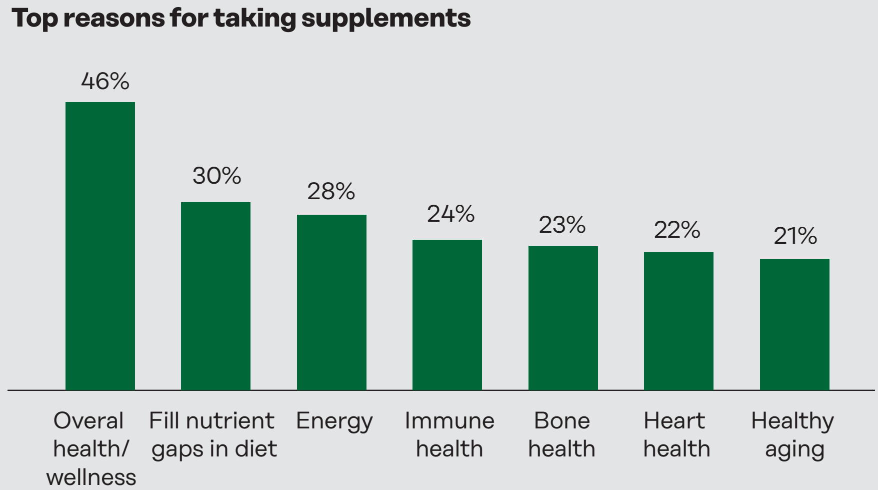
One of the concerns about new formats, however, is how well the nutrients are absorbed by the body. Manufacturers are addressing this through enhanced bioavailability. For example, in the omega-3

Most popular supplements among U.S. adults



More than 170 million Americans take dietary supplements, with vitamins and minerals the most commonly consumed category.

Source: 2017 CRN Consumer Survey on Dietary Supplements fatty acid category, Neptune Wellness Solutions has developed a liquid delivery system, based on a range of oils derived from vegetable seeds and other plants, such as sea buckthorn and microalgae, to produce oils for a variety of applications and health benefits. In addition, Neptune's patented, omega-3 MaxSimil fish oil provides predigested monoglycerides rich in omega-3s that the company says are more directly assimilated in the intestinal tract for greater bioavailability.[1]



Nearly half of U.S. consumers take supplements to support overall health and wellness, but nearly one in three use them to address nutritional gaps in their diet.
Source: 2017 CRN Consumer Survey on Dietary Supplements

Beyond liquids

Minerals are another category where manufacturers are exploring new delivery systems to address dosing and absorption. For example, Trace Minerals Research recently released its Vita Straw, a drinking straw that contains flavored nutrient pellets. Consumers simply put the straw in a glass of water and sip. As the water passes through the straw, the pellets dissolve, and the vitamins and minerals are taken in. According to Darrin Starkey, N.D., manager of education and training for Trace Minerals, the product is ideal for children and adults, especially aging consumers, many of whom have trouble swallowing pills. "Many older people are dehydrated, so this is a wonderful way for them to rehydrate and get nutrition," he said.

But it takes research, intellectual property and education to successfully bring these innovations to market, noted Todd Johnson, senior director of marketing for Albion Minerals, a division of Balchem Human Nutrition and Pharma. "We have focused on some new delivery systems, such as stick packs and gummies, but it is a challenge to bring the industry up to speed on these innovations, so we are constantly focused on how to bring more solutions to customers and address the challenges and opportunities in the market," he said.[2]

Supplement manufacturers are also working to cater to the needs of specific audiences from young children to older consumers in need of more therapeutic doses. Tespo is addressing a number of these challenges with its carbonated water dispenser that provides a customized liquid dose of vitamins and nutrients geared toward men, women and children, or for energy and focus.[3]

Blurring the lines between foods and supplements

Companies that provide whole-food-based supplements have long argued that nutrients delivered in a food-state form, with enzymes and other co-factors, are more bioavailable than synthetic vitamins. While the clinical evidence has yet to definitively prove this, this story, as well as the rising knowledge about supporting microbiome health with a balanced diet, has prompted a rising faith in the value of natural and organic foods as the best way to consume adequate nutrients.

But while the lines between foods and supplements are becoming increasingly vague, supplement categories, like herbs, are seeing growth through broader trends in the food industry, such as the popularity of protein, "plant-based," "clean label" and "allergen free." "The focus in product development is not on singular species," noted George Pontiakos, president and CEO of BI Nutraceuticals, "but on how we can substitute more botanicals for the chemicals we use for processing, to eliminate allergens, or to [replace] meat-based proteins. This is an interesting and vital niche to the market."

Taking this concept a step further, the industry is seeing a shift toward "herbal foods," according to Ed Smith, co-founder of Herb Pharm. "Instead of capsules, tablets, teas and extracts, we are seeing more interest in herbs that are foods, like chia seeds. These are common, everyday foods, they taste great, they're safe, and they have very specific and strong therapeutic and pharmacological activity. Turmeric is another one, as is holy basil. All of the berries have anti-cancer properties and immune support and supply key nutrients, such as collagen, to support elasticity in the blood vessels and skin."[4] ■

> "While the lines between foods and supplements are becoming increasingly vague, supplement categories, like herbs, are seeing growth through broader trends, such as the popularity of protein and plant-based products."

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Consumer trends in the U.S. supplement marketplace

2018 survey shows increased usage among age groups as well as widening reasons for supplement use

By Missy Lowery, M. Sc.

In the United States, the majority of consumers feel using supplements on a daily basis is part of their health "assurance" policy. Nearly eight in 10 adults, aged 20 and older, believe that taking a vitamin or mineral supplement every day is important to their overall health. The other 20 percent say they use dietary supplements only when they are sick or feel they are getting sick.

This idea of self-directed healthcare or the preventative approach to health through the use of supplements is a main motivator within the United States among all age groups, according to the 2018 market research by the Natural Marketing Institute and documented in its biannual "Supplement, Over-the-counter, and Rx Database" (SORD) study.

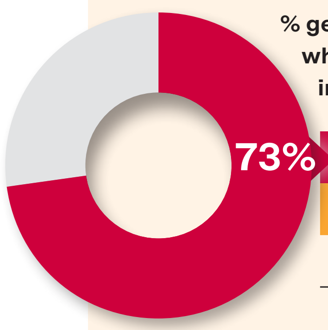
Capsugel, now a Lonza company, has been one of the sponsors of the SORD study, conducted every two years in the United States and in many countries around the world. We do this in an effort to learn more about the priorities, needs, deficiencies and activities of those who use—or have stopped using—dietary supplements, in order to help dietary supplement manufacturers better understand their consumers.

Use of supplements achieved a 73 percent plateau among adults over the age of 20 in 2013 and continues at that penetration in the recently completed 2018 study. What has changed are the growth in the number of supplements taken per person and demographic shifts, and these have driven the overall growth of the market. Older consumers are more likely to use supplements. For example, mature consumers, those over the age of 70, who take supplements, grew as a group from 75 percent in 2009 to 83 percent in 2018. Only half of millennial consumers, aged 20 to 40, were taking supplements in 2009, but today, 69 percent report taking supplements.

Generational usage on the rise

Each generation is also increasing the number of supplements used. Light users, or those

% general population who used supplements in past 30 days



% general population indicating they have used the following products in the past 30 days

	% GP 2009	% GP 2011	% GP 2013	% GP 2015	% GP 2017	Trend
Current supplement users (past 30 days)	62%	65%	73%	73%	73%	↔
Vitamin/mineral (net)	57%	60%	68%	68%	69%	↔
Multivitamins/minerals	48%	50%	56%	55%	55%	↔
Single vitamins	23%	29%	37%	38%	40%	↑
Single minerals	13%	18%	19%	19%	24%	↑
Other (net)	29%	34%	38%	40%	37%	↔
Other supplements (i.e., Omega 3, lutein)	15%	20%	24%	24%	21%	↔
Condition specific	11%	14%	14%	14%	17%	↑
Herbal supplements	11%	12%	16%	17%	14%	↔
Homeopathic medicines	5%	6%	8%	10%	8%	↔
Ayurvedic remedies	1%	2%	3%	2%	2%	↔

Supplement use had been showing steady increases from 2009 to 2013 but has plateaued at 73%. Overall supplement use has grown—especially in the use of single vitamins, minerals and condition specific supplements as more consumers take more supplements for their self-directed health care.

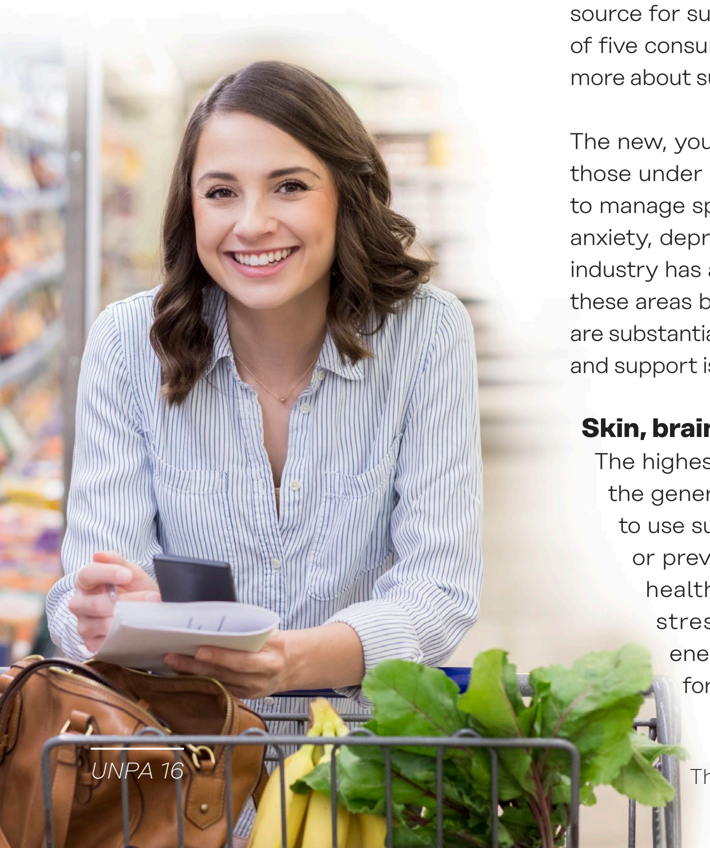
who use only one to two supplements a day were 60 percent of the population in 2009. Today, they are only 48 percent. Medium users, or those who use 3 to 5 supplements per day, were 28 percent in 2008. In 2017 they have grown to 39 percent of users. And since 2009, the greatest growth has been among millennials, who moved from 1.8 supplements daily to 2.9 supplements. Daily usage among those in the Generation X cohort, aged 41 to 52, grew from 2.5 to 3.1 in the same time period.

As consumers continue to look for ways to be healthy, three in five reported they felt they were not getting enough nutrition in their diet, and about half believe they can manage many of their health issues by taking supplements. This is supported by the increase in the use of many single vitamins, minerals and supplements, which have grown in use over the past three years.

Customized solutions

In effect, consumers are customizing their own condition-specific formulations, using individual supplements that target their specific needs rather than relying on a single multivitamin, which is usually the first product a light user adopts.

The major "clean label" trend, which emerged in 2013, continues to grow among supplement users, as attributes such as non-GMO, environmentally responsible and organic are showing growth in importance, an indication that consumers increasingly desire pure products, with little to no additives, and from a brand with a high-transparency platform. Vegetarian, plant-based are also growth attributes in supplements. Capsules still remain the most preferred dosage form.



The concept of healthy aging is being embraced across the entire demographic spectrum as lifestyle, stress and some diseases once reserved for older cohorts, such as diabetes, are being managed by younger populations due to the growth in obesity. As such, the desire for healthy-aging products and remedies continues to trend younger, including probiotics for digestion and zeaxanthin for eye health, especially as it relates to the potential blue-light damage from electronic devices.

Claims remain a challenge

Some of the continuing challenges for the industry stem from a lack of consumer understanding or concern about transparency from the industry. Seven out of 10 supplement users are concerned that some supplements are based on false claims of health benefits. Over half of lapsed supplement users admit they do not know enough about supplements to know what they should be using.

While a physician is the most influential source for supplement purchase, two out of five consumers wish their doctor knew more about supplements.

The new, younger consumers, or at least those under 40, show a higher likelihood to manage specific health issues, such as anxiety, depression or sleeplessness. The industry has an opportunity to innovate in these areas but will need to ensure claims are substantiated, benefits are measurable and support is easy to understand.

Skin, brain, stress top categories

The highest-growth categories among the general population for "likelihood to use supplements for management or prevention" are aging skin, brain health and anxiety. Circulation, stress, memory loss, lack of energy and need to lose weight for appearance are close behind.

For millennials, the categories of interest include detoxification, stress, depression, anxiety, and headache and sports recovery. For Gen X, who are now 40 to 53 years old and are starting to experience more health issues related to aging and active family life, highest-growth categories include circulation, digestive problems, stress, lack of energy, menopausal and prostate issues, sexual dysfunction, skin health, sleeplessness, need to lose weight for appearance and vision issues. Baby boomers tended to trend the same as the general population, while "matures" trended high for arthritis, joint pain/stiffness, osteoporosis/bone issues and diabetes.

Multivitamins/minerals are still the most highly used supplements, but vitamin D, fish oil, probiotics and omega-3s show the highest growth in usage over the past 12 years. Overall, positive growth has registered for vitamins C and B-12, magnesium, iron and fiber supplements.

Personalized technology and customized nutrition via DNA testing, self-monitoring devices, mobile apps and web-based consultations are emerging as trends, which are expected to drive supplement industry growth for the next decade and beyond.

Connected with this is the increasing role of the internet, now used by 21 percent of supplement shoppers and the third-largest "shopped most often channel," displacing traditional grocery stores/supermarkets in 2018. The connection between e-commerce and internet-linked technology is critical in implementing and expanding personalized demand. It is of key interest in the industry as consumers indicate their allocated spending is increasing at the highest rate for internet/online shopping—almost double since 2009—and expected to continue. ■

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