

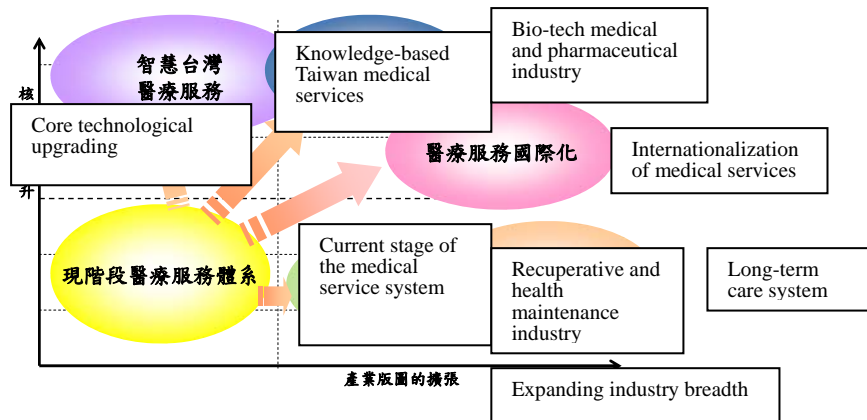
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The Status Quo of Taiwan's Healthcare Industry

The entire industrial sector of Taiwan is developing in a knowledge-intensive and high added value direction. So, a pressing issue is how to deploy Taiwan's IT industry foundation and capabilities, so that the service industry brings along the manufacturing industry as twin engines of development, applying it in the high growth and demand healthcare industry to boost the well being and quality of life of the entire populace. The current developmental advantages of Taiwan's healthcare industry include a sound medical system, convenient and efficient access to medical help, high standard of medical treatment, lower costs vis-à-vis the EU, US and Japan. Add to this a well-developed IT industry and widespread use of IT products, developmental advantage of the integration of the medical and care industry with medical device industry and health information technology can satisfy the overall care services demand of senior citizens caused by an aging population structure.

The government in Taiwan is promoting six emerging industries, of which the medical and healthcare industry is one. The Department of Health (DOH) has mapped out a Platinum Plan to Boost Healthcare Value, stipulating the scope of development for Taiwan's healthcare industry to serve as reference for the direction of future development for the industry. With the current stage of the medical service system as a foundation, it maps out the future development of the industry from two major directions: upgrading core technologies and expanding the breadth of the industry. Focus in the future will be on knowledge-based Taiwan medical services, the bio-tech medical and pharmaceutical industry, internationalization of medical services, recuperative and health maintenance industry and long-term care system (see chart 3).

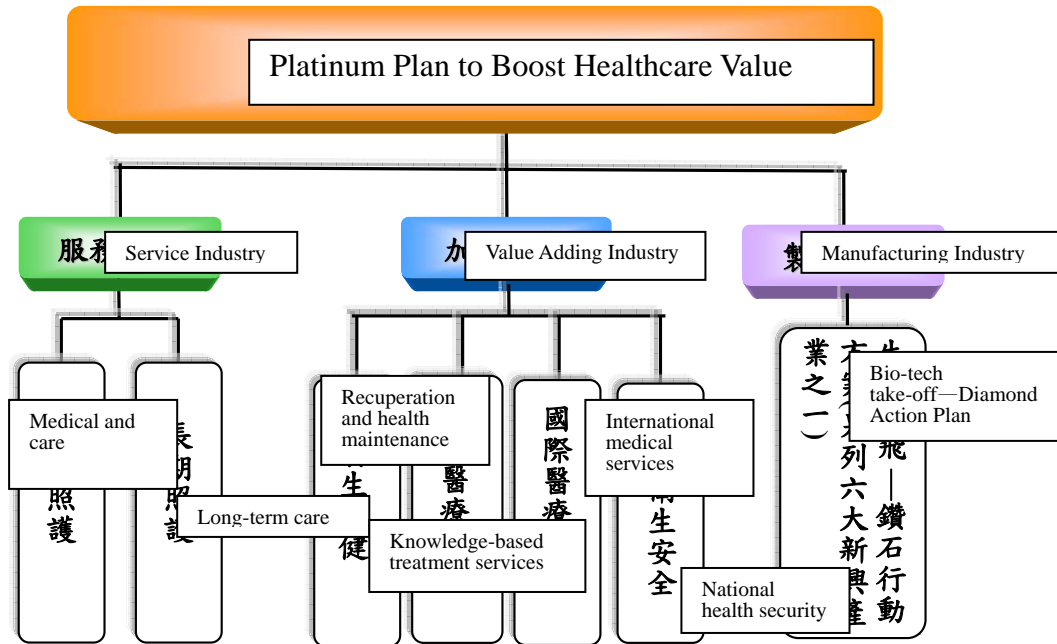
Chart 3 Scope of Healthcare Industry Development



Source: DOH Platinum Plan to Boost Healthcare Value, April 30, 2009.

Based on the foregoing focuses of development, it then sets the three future developmental pillars for Taiwan’s healthcare industry: 1) the service industry, 2) value adding industry and 3) manufacturing industry. These can be further subdivided into 7 major projects: medical treatment and care, long-term care, recuperation and health maintenance, knowledge-based treatment services, international medical services, national health security, and Bio-tech take-off—Diamond Action Plan. The following study building on a study of the current supply and demand situation for the medical treatment, care and long-term care industries then goes on to explore potential future development of the valued adding industry (the manufacturing industry is already explored in other emerging industry, so is not discussed in this study).

Chart 4 Three Healthcare Industry Pillars and Related Projects

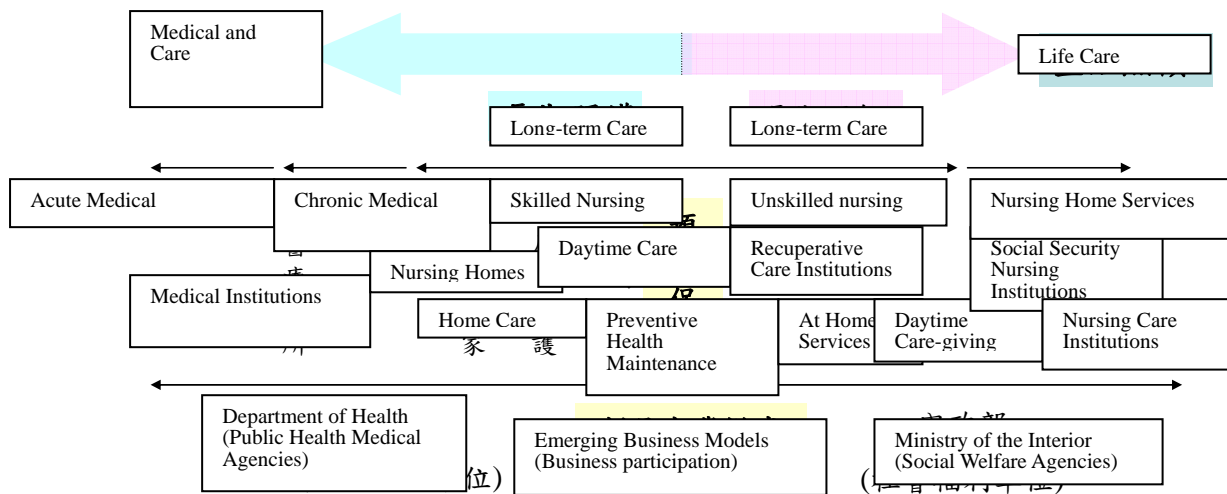


Source: DOH Platinum Plan to Boost Healthcare Value, April 30, 2009.

2.1 Healthcare Industry Supply and Demand Situation

The DOH and Ministry of the Interior (MOI) are the two government agencies in Taiwan that oversee the healthcare system. Skilled nursing is under the purview of the DOH, is regulated by the Physician’s Law and Nursing Personnel Law, and includes acute hospital and nursing establishments as well as long-term care agencies providing home care nursing and day care. Non-skilled nursing is under the purview of social welfare agencies, is regulated by the Elderly Benefits Law and other pertinent regulations, and includes nursing home service and long-term care agencies. What follows is a further examination of Taiwan’s healthcare demand and the status quo of the healthcare service industry for further understanding the current development of the healthcare industry in Taiwan.

Chart 5. The Domestic Healthcare System



Source: Compiled for this study.

2.1.1 Healthcare Industry Demand Analysis

Healthcare services can be viewed as a consumer demand industry. Thus, the demand for healthcare is closely bound up with the size of the local population and incomes. The healthcare demand indices commonly seen are principally observations and measurements of demographic age structure and medical and health maintenance expenses. Details follow below.

2.1.1.1 Population age structure

Statistics provided by the MOI in 2009 indicate that as of the end of 2008, Taiwan had a registered population of 23.04 million people, with only a 3.4 percent total growth rate. Over the long term, its population growth rate has been declining. Taiwan became an aging society in 1993, with the proportion of people aged 65 or older continually rising. By the end of 2008, it had reached 10.4 percent, and the aging index was 61.5 percent. Although this is lower than developed nations such as those of the EU, US and Japan, it is high compared to other Asian nations. From a historical comparison of Taiwan's demographic structure over the years, the proportion of those 65 years of age or older has risen year by year, while the proportion of those 14 years

of age or younger has fallen year by year due to a drop in the birth rate. The dependency ratio of dependent population (0-14 and 65+ years of age) to working population (ages 15 to 64) is 37.7 percent, which has declined year after year principally due to a gradual rise in the dependent old age population, while the drop in the dependent young age population has been dramatic. The aging index of those 65 or older compared to those 14 or younger is 61.51 percent, which has continually set new records over the years.

Table 2. Taiwan's Historical Demographic Structure

Year	Total Population	Demographic Structure			Dependency Ratio	
		<15	15-64	65>	Young	Elderly
	Unit: 1000 people	%	%	%	%	%
1976	16,508	34.7	61.7	3.6	56.2	5.9
1986	19,455	28.9	65.7	5.3	44.1	8.0
1996	21,525	23.2	68.9	7.9	33.5	11.4
2006	22,877	18.1	71.9	10.0	25.2	13.9
2007	22,958	17.6	72.2	10.2	24.3	14.1
2008	23,037	17.0	72.6	10.4	23.3	14.4

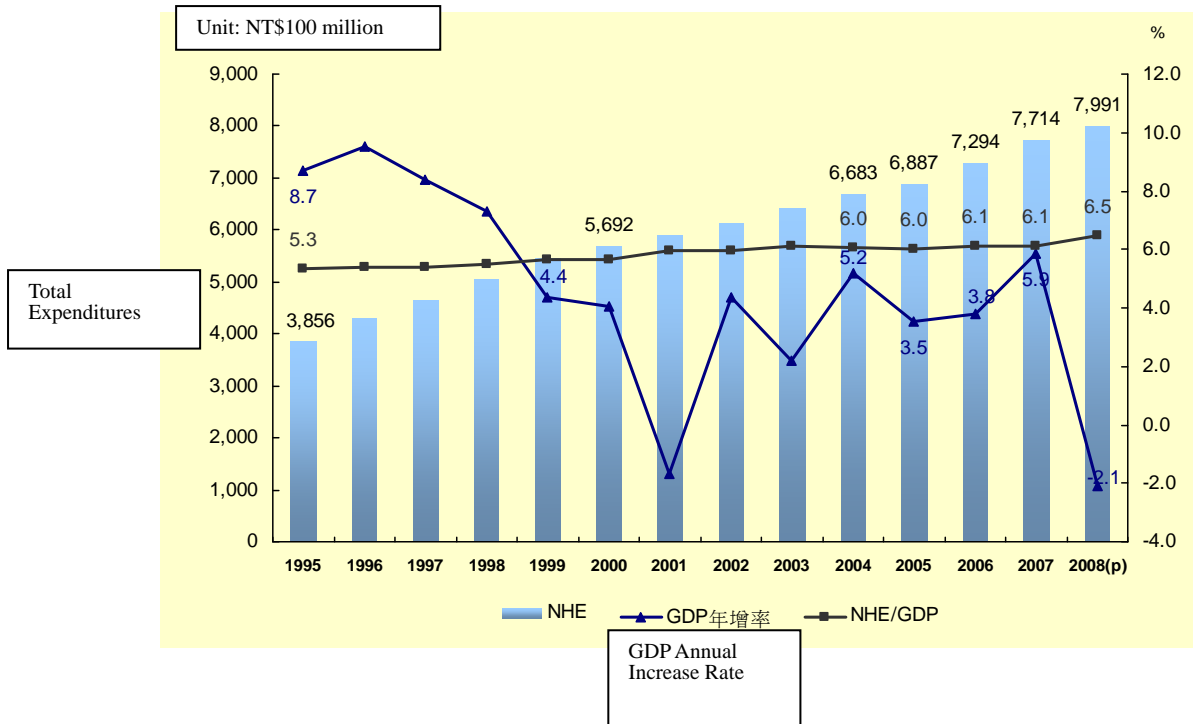
Note: Dependence index: (0-14 population + 65 and older population)/15-65 population * 100; young population dependency ratio: 0-14 population/15-64 population * 100; elderly dependency ratio: 65 or older population/15-64 population * 100.

Source: Republic of China 2008 Public Health Annual Report (December 2008) and MOI Statistical Bulletin (2009).

2.1.1.2 Medical and health maintenance expenses

Medical treatment and care is a fundamental need of citizens in the modern era, and is a major index of whether a nation is advanced or not. Taiwan's national health expenditures (NHE) rose from NT\$569.2 billion in 2000 to NT\$771.4 billion in 2007, and were projected to reach NT\$799.1 billion by the end of 2008. Average per capita national health expenditures have demonstrated steady growth. And especially following the launch of the National Health Insurance program in 1995, NHE rose from 4.9 percent of GDP in 1994 to 5.3 percent in 1995, 6.1 percent in 2007 and are projected to have reached 6.5 percent in 2008.

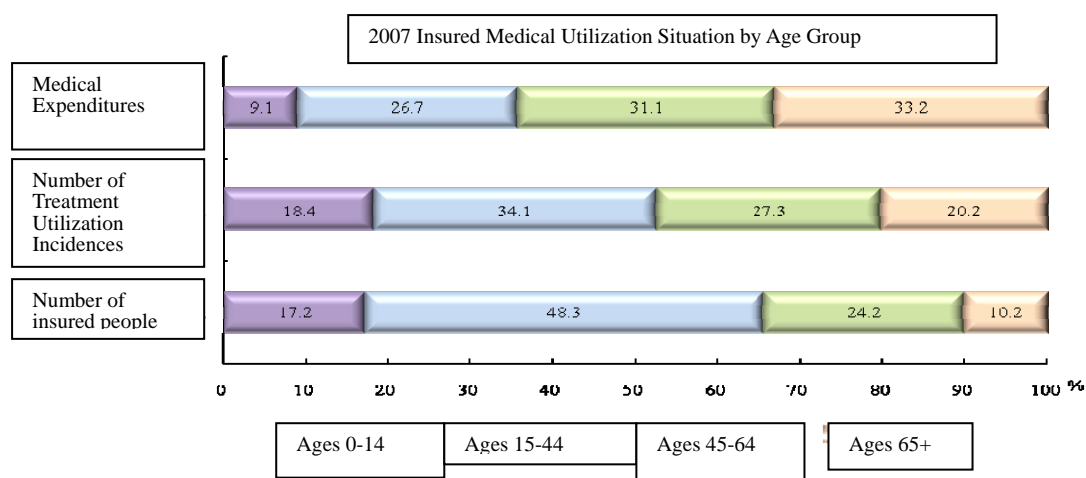
Chart 6. Year on Year Comparison of NHE Growth in Taiwan



Source: DOH Platinum Plan to Boost Healthcare Value, April 30, 2009.

For further analysis of National Health Insurance expenditures, statistics supplied by the MOI indicate that 22.8 million people were insured under the program in 2007. Of these, 14.08 million were insured, and 8.73 million were dependants. According to average clinic and hospitalization figures from 2001 onward, women have outnumbered men in clinic visits, but men have had a higher hospitalization rate. The average cost of medical treatment per instance in both clinical and hospitalization categories has been higher for males than females. Medical treatment utilization by those insured by age show those 0-14 years of age accounting for 10 percent of treatment expenditures in 2007 and those 45 years of age or older accounting for more than 60 percent. Among the latter, although those aged 65 years or older only account for 10 percent, they required 33 percent of medical expenditures for this group. This indicates that medical expenditures for an older population are a major issue that is worthy of attention.

Chart 7. National Health Insurance Utilization in Taiwan During 2007



Source: DOH statistical data (March 2009)

2.1.2 Healthcare Industry Supply

The supply side of the healthcare industry can principally be divided into two major sectors: 1) medical treatment and care services, and 2) long-term care services. Details follow.

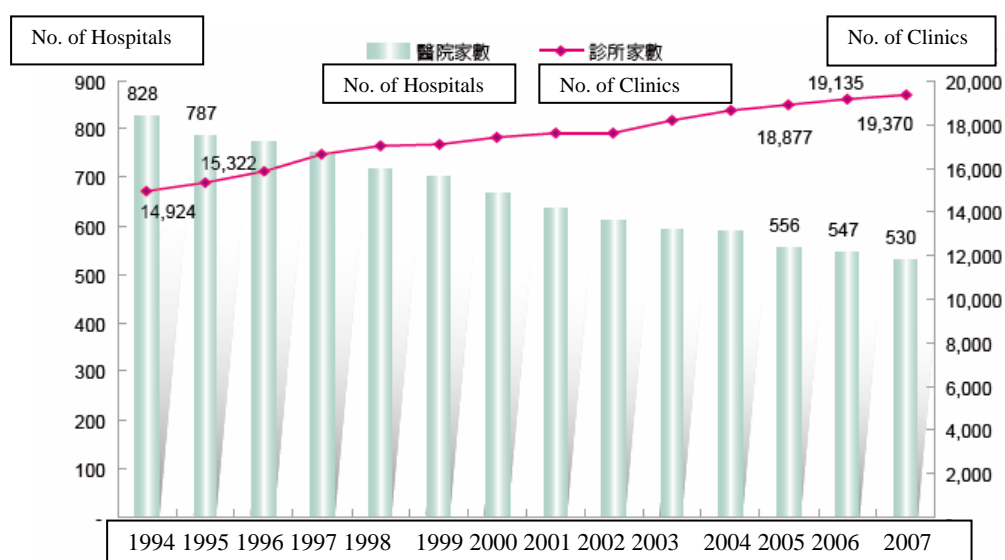
2.1.2.1 Medical and care services

According to a survey of the current state of medical institutions the Republic of China 2008 Public Health Annual Report (December 2008), there were 530 hospitals in Taiwan as of the end of 2007, 96 percent of which were hospitals practicing western medicine. The remaining four percent were offering Chinese medical treatments. Taiwan had 19,370 medical clinics, a high percentage of which were practicing western medicine, followed by dentistry. Analyzing changes taking place between 1997 and 2007, there was a decrease in number of hospitals by 220, a nearly 29.3 percent change, most small or un-accredited facilities. The number of clinics rose by 16.4 percent, with a 41.8 percent rise in the number of Chinese medicine clinics accounting for the greatest growth. Over all, the changes in medical facilities can be summarized as a decline in the number of hospitals year on year, but a gradual rise in the number of clinics, and hospitals continued to grow in size, while clinics tended to

increase in distribution (access), with the two sectors mutually affecting each other in terms of deployment of medical resources.

According to the Republic of China 2008 Public Health Annual Report (December 2008), further examination of the current state of beds in medical facilities shows that as of the end of 2007, Taiwan's medical facilities had a total of 150,628 beds (including both ordinary and special beds). Among these, 64.6 percent were ordinary beds, with other private and charitable hospitals as well as private hospitals affiliated with medical colleges having the highest amount. Thus, there were 96,987 ordinary beds in medical facilities (including 73,337 acute ordinary beds; 4,014 chronic ordinary beds; 6,358 acute psychiatric beds and 13,278 chronic psychiatric beds). This works out to an average 65.61 beds per 10,000 people, which meets the goals of the medical network plan. Following enactment of the National Health Insurance program, the number of hospitals has declined but there has been rapid growth in the number of hospital beds. Nevertheless, looking at the trend of recent years, except for continued dramatic growth in the number of beds at foundation-run and non-public hospitals affiliated with medical colleges, growth of beds at public hospitals and other private hospitals has markedly slowed.

Chart 8. Multi-year Analysis of Medical Clinics in Taiwan



Source: Republic of China 2008 Public Health Annual Report (December 2008)

2.1.2.2 Long-term care services

As the population ages, the average lifespan increases, types of illness change, and disabled population grows dramatically, public demand for long-term care has grown. A major policy issue facing the nation at the moment is how to provide proper long-term care. Vigorous promotion of the long-term care service system is necessary to meet this demand so that the public obtains integrated, accessible and continuing care services.

Table 3. Types of Long-term Care in Taiwan

Type of Care	Category	Description
Home Care	Family Care	Family members or relatives provide care—Taiwan’s most extensive and ideal type of care. However, the physical and psychological burden for caregivers is enormous, and cannot provide skilled care for the elderly.
	Home Care Services	Ordinary life care services provided to low-income households by community government personnel, including bathing, moving, household chores, etc. This can alleviate pressure on family caregivers and allow family members of the person receiving care to learn professional service techniques.
	Home Care Nursing	At home care services provided by public health departments to disabled elderly. Currently, National Health Insurance pays only for highly disabled individuals and the items paid for are limited to professional medical and nursing services.
Community Care	Daytime Care	Daytime care services provided to low-income elderly by community government personnel, to assure that the elderly can obtain guaranteed quality of life and safety.
	Daytime Medical Care	Provided by public health departments to allow elderly who usually live at home with their family to spend only part of their time going to receive medical treatment and care.
Institutional Care	Institutional Care	Provides those who enter such institutions to receive care on a

Type of Care	Category	Description
		24 hour basis, including medical, as well as nursing and social services. Although this can provide professional service, it is difficult to meet individual needs.

Source: Compiled for this report.

According to the MOI statistical yearbook (2009), as of the end of 2008, Taiwan had 1,074 long-term care and nursing home institutions (including 14 veteran’s homes and 4 self-support nursing home centers), that could provide accommodation for 65,358 people. They actually housed 48,113 people for an occupancy rate of 73.6 percent, or 2.0 percent of the elderly population. This represented an increase of 4.1 percent over the corresponding total accommodation capacity in 2007, a rise of 3.0 percent in the number of elderly actually housed over 2007, and a 0.7% drop in usage rate.

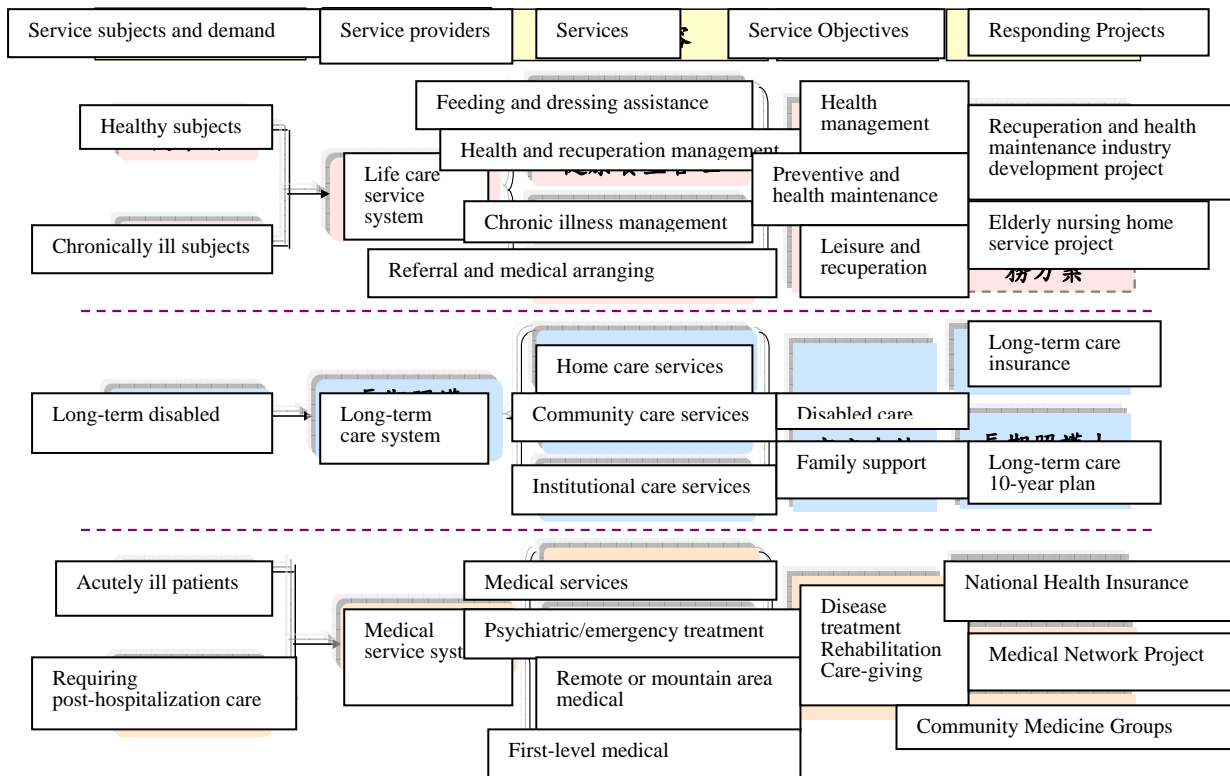
The long-term care services provided under Taiwan’s medical system are fundamentally chronic medical treatment and skilled nursing services, such as chronic illness hospitals, nursing homes, home care, daytime care long-term care agencies, and are regulated by the DOH via pertinent laws such as the Medical Treatment Law and Nursing Personnel Law. Statistics regarding nursing homes, home care nursing and daytime care nursing agencies under the DOH indicate that as of the end of 2007, there were 324 nursing homes, 503 home nursing agencies and 13 daytime care agencies. Compared with 2002 statistics, this represents an increase of 95 nursing homes and 99 home nursing agencies, but a reduction of 18 daytime care agencies, meaning that in recent years, establishment of long-term care agencies like nursing homes and home nursing agencies has grown quickly. This has made the provision of institutional care of the elderly, home nursing services, physical and mental impediment services, medical treatment and rehabilitation ancillary services all the more complete.

2.2 Gap in Healthcare Industry Supply Chain

The medical service industry developmental blueprint mapped out in the DOH’s Platinum Plan to Boost Healthcare Value calls for primarily finding pertinent service

providers and the services that they should be prepared to provide based on service subjects and demand, and stipulates service objectives, then maps out plans in response to policies. The following takes this blueprint as the basis for subsequent analysis of the supply chain and current providers.

Chart 9. Developmental Blueprint for Healthcare Industry Services



Source: DOH Platinum Plan to Boost Healthcare Value, April 30, 2009.

According to the foregoing developmental blueprint, the healthcare industry value chain is next described and an assessment of overall service gaps based on the previous section is provided. The results are as follows:

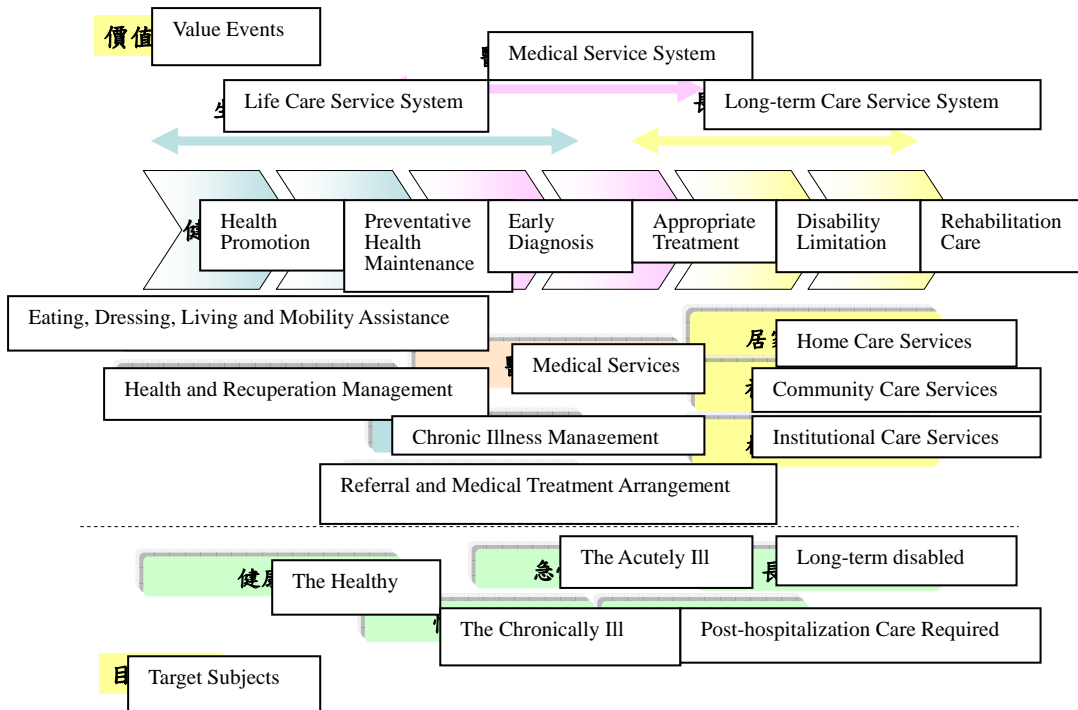
2.2.1 Medical Service System

The medical service system includes major value events such as clinics and providing treatment. Pertinent treatment services include medical services, psychiatric and emergency medical treatment, remote and mountainous area treatment and first-level

medical treatment, primarily to provide pertinent services to the acutely ill. The DOH enacts pertinent measures in this medical services system, including a medical network project to provide balanced distribution of medical resources and put an end to health inequities. The project to upgrade remote area medical treatment enhances medical accessibility and emergency care handling capacities. The community medical group project promotes interconnection between first-level medical treatment systems and preventive and health maintenance, acute medical care, rehabilitation services and long-term care system, which can provide the entire citizenry with better medical service.

Taiwan's medical service system has a relatively high degree of completeness. Its medical network, psychiatric treatment network and emergency treatment network projects have been gradually put into effect since 1985 to balance distribution of medical resources and provide a high degree of medical accessibility. The National Health Insurance program was launched in 1995, with a nearly 99 percent insured rate, reducing economic impediments for the public to receive medical treatment. The Lausanne, Switzerland-based International Institute for Management Development (IMD) in its World Competitiveness Yearbook 2007 ranked Taiwan 13th worldwide (out of 55 countries and regions) for medical treatment and health infrastructure. The 2000 Economic Business Intelligence World Health Rankings put Taiwan in 2nd place, behind only Sweden. And on April 16, 2008, the US PBS program, "Sick Around the World," compared the US healthcare system with those of the UK, Germany, Switzerland, Japan and Taiwan. Taiwan ranked equally with the world's advanced nations, attesting to world affirmation of Taiwan's National Health Insurance program. This indicates that Taiwan has relatively few gaps in this kind of service, and given the trend toward growing demand for multi-national medical services, Taiwan is all the more able to provide medical services to citizens of other countries, moving toward development of medical service internationalization.

Chart 10. Healthcare Service Value Chain Analysis



Source: Compiled for this study.

2.2.2 Long-term Care System

The long-term care system includes major value events such as disability limitation and rehabilitation care. Pertinent long-term care services include home care services, community care services and institutional care services that principally target long-term disabled or patients discharged from the hospital but still requiring related services. Pertinent data indicate that supply in the institutional care sector which mainly targeted the disabled will tend to exceed demand, which may be connected with willingness to be institutionalized.

Many studies indicate that de-institutionalization is a global trend. Thus, demand is projected to continue to rise for home care services and community care services. Currently, Taiwan has insufficient infrastructure in this link, and there is need to encourage more businesses to join in providing pertinent services. The DOH is presently providing pertinent concrete measures targeting demand for long-term care services, including actively cultivating manpower of high quality and sufficient quantity to take part in the service market, promoting integration of care service

resources in community long-term care centers, strengthening care management mechanisms and initiating pluralistic long-term care insurance mechanisms and service networks to spur private-sector investment.

In view of a corresponding rise in demand for long-term care along with population aging, there should be appropriate long-term personnel and care model planning. Current care models are manpower intensive and low-tech in character and cannot deal with the aging baby-boom issue. Add to this the continuing increase in cost of medical treatment and care, and Taiwan’s health insurance program is bearing enormous financial pressure. There is urgent need to find a high-efficiency, large-benefit care service model. Technologically revamping the care service industry will provide a key development opportunity.

The Telehealth Pilot Project (TTPP) undertaken by the DOH’s Bureau of Nursing and Health Services Development used the strategy of individual case management to develop a digital healthcare service model using Tele-caregiving to realize a three segment, five-tier care concept, actively developing community resources and interconnecting pertinent agencies to provide a one-stop service window. It also utilized the establishment of an integrated information platform connecting community and public health government resources to integrate the advantages of Taiwan’s information industry and promote a newly emerging health service industry. The results of the trial indicated that it could effectively facilitate home care, community care and institutional care. Introduction of telehealth or other technological healthcare approaches requires the joint participation of other businesses to provide a better localized healthcare model.

Table 4. Telehealth’s Service Efficacy

	Service Subjects	Services	Service Indices	Before Introduction (%)	After Introduction (%)	Efficacy
Institutional Care	Nursing homes, home dwellers, nursing home service providers	Tele-Physiological testing Tele Health Education Guidance	Intramural infection density	1.60	1.08	Intramural infection density dropped 33 percent

		Video family visit service Drug event safety service Teleconference diagnosis	Hospital readmission rate	0.49	0.31	Hospital re-admission rate dropped 36 percent
Home Care	Diabetes and high blood pressure suffers, slightly disabled, slightly mentally impaired, primary care-givers of those afflicted with chronic diseases	Tele-Physiological testing Tele Health Education Guidance Video member visit service Life resources referrals Emergency situation handling	Hospitalization Rate	8.19	2.57	Test group hospitalization rate far below that of reference group
			Emergency room readmission rate	2.95	2.90	Test group emergency room readmission rate slightly lower
Community Care	Diabetes and high blood pressure suffers, slightly disabled, slightly mentally impaired, those living at home alone	Community health convenience stations Video health education and consultation Mobile fixed-address safety Drug event safety service Life resource referral	Lack of drug safety awareness ¹	38.2	9.3	Lack of drug safety awareness in community dropped dramatically
			Weekly testing of blood pressure and blood sugar attainment rate ²	48.1	88.7	Community health self management promoted

¹ Lack of drug safety awareness was measured via questionnaires and calculated by the percentage of mistaken replies (i.e., a score of less than 17).

² Percentage of those measuring blood pressure or blood sugar at least once a week.

Source: DOH Telehealth Pilot Project

2.2.3 Life Care Service System

The life care system includes major value events such as health promotion and preventive health maintenance. Related life care services include assistance with eating, dressing, mobility and transportation, health and recuperation management, chronic illness management and referral and medical treatment arrangement. It provides pertinent services primarily targeting the healthy and chronically ill.

Pertinent data indicate that in the past, emphasis was placed on treatment and care after illness strikes. However, as public medical expenditures around the world at present are creating an enormous financial burden for the governments of various countries, lowering the medical costs to a nation and society is a matter receiving considerable scrutiny. Approaching the issue from a preventive medicine perspective is one solution at the moment. Since the development of disease is affected by such factors as congenital genetic inheritance, acquired living environment and lifestyle, and there are differences in each person's susceptibility to disease and rapidity of the

course of the illness, the concept of individualized healthcare has gradually taken shape. It has been discovered currently that falling ill is connected with many congenital inherited substances, genes. Congenital genetic differences indeed decide our susceptibility to disease, but facilitating factors such as acquired living habits are also elements controlling disease. A major future healthcare trend is how to integrate pertinent information to provide an integral preventive strategy and early intervention scheme.

Currently, besides the relatively high demand for service manpower to provide assistance in eating, dressing, mobility and transportation, relevant concepts of health management and chronic illness management should be actively introduced before the latter part of the value chain can be connected to provide integral service. Since preventive medicine must satisfy the need to discover problems and simultaneously solve them, otherwise the significance is not very great, and its major efficacy lies in its follow-up handling and preventive approach, it should be viewed from a solution perspective before it can really exercise its preventive efficacy. Currently, many health testing companies or health management companies are actively taking on health issues with preventive concepts and in various feasible schemes are devising appropriate preventive strategies based on an individual's situation to give preventive strategies greater efficacy.

In summary, from an analysis of the industry chain, the existing current preventive management models for the most part can be divided into five steps. The first is motivation to take part in a health plan, and can be separated into the various types of subjects receiving benefits—individuals, memberships, corporate clients and insurance clients. Perhaps they are relatively health-aware members of the public or families, using B2C (business to customer) models, paying to take part in medical testing to better understand their own health, and better attain the efficacy of early intervention. Or perhaps they are corporate groups or insurance groups using the B2B2C strategy to provide health-testing service to their staff or insurance clients. All share the same objective of hoping for early discovery of illness.

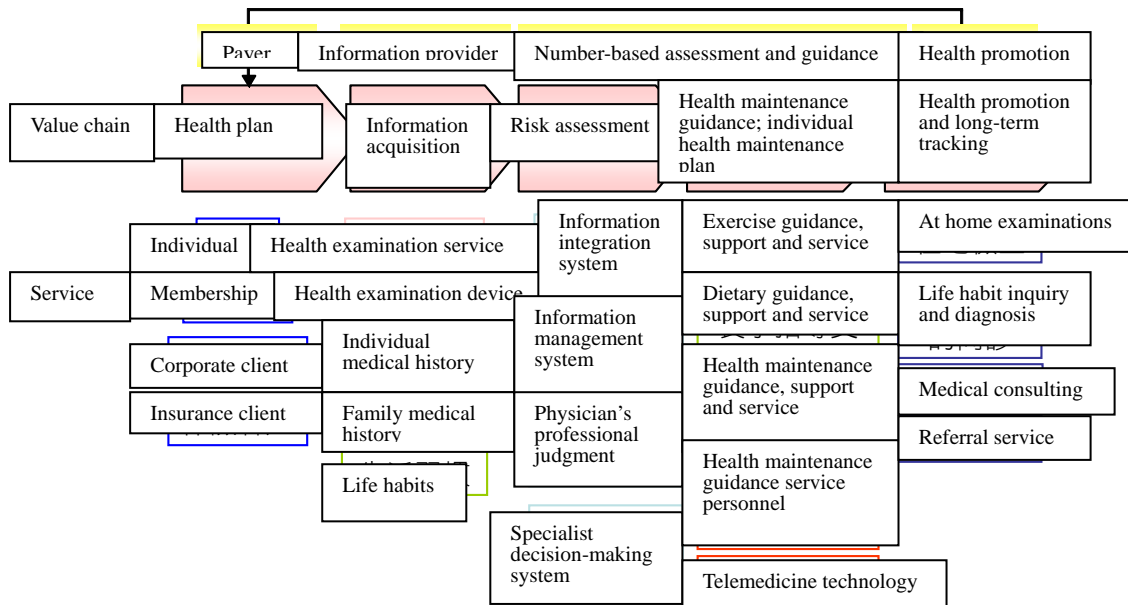
The second step is obtaining abundant and effective information that is helpful for subsequent assessment and judgment. Information on one's health situation may be derived from individual medical records, family medical records or life habits. It then requires further diagnostic and testing products and services to carry out a health examination, possibly at the physiological, psychological or stress management levels.

The third step is a risk-assessment system integrating information, management and a professional decision-making system. Since tested items and follow-up risk assessment systems require acquisition of information, risk assessment systems involve a company's know-how, so naturally how good or bad such a system is can affect the devising of an individual health management plan, so it is a locus of key technology.

The fourth step involves once an individual's health and risk situation has been ascertained via a risk assessment system, devising an individual health maintenance plan, using health maintenance indices to realize a preventive strategy. Strategies often used include diet management, exercise management and lifestyle changes.

The fifth step involves once a health maintenance strategy has been actually undertaken, reconfirming the individual's health status and recommending adoption of health promotion or long-term tracking strategies. Of course, this kind of health management service is a revolving strategy until the next health examination after which new appropriate strategies are devised.

Chart 11. Individualized Preventive Management Service Value Chain



Source: Industrial Economics and Knowledge Center, Industrial Technology Research Institute

If an illness occurs, timely referral and arrangement for medical attention is required. Health management or disease management will also result in pertinent active life needs and subsequent business opportunities for the recuperation and health maintenance industry. Developing such an industry can strengthen the health management concepts of our citizens, reduce unnecessary medical treatment and cut medical expenditures. It can boost awareness of and investment by our citizens in health promotion and spur involvement of private-sector resources to attain the goals of a healthy public, and longer average span of healthy remaining years in life. This part also requires the active involvement of vendors to jointly boost industry competitiveness. The existing vendors for the life care service industry provide relatively fragmented service or are mainly involved in manpower demand. In the future, it is possible that among these some may play the role of health examination vendors providing related examination and testing services, including physiological tests, genetic tests, stress tests, sleep tests, allergy source tests, etc., so that from all

the numbers generated it will be possible to find an appropriate, customized health plan.

2.3 Major Providers in Taiwan

Taiwan vendors and providers involved in the healthcare industry are very diffuse, with considerable differences in provider categories, making description relatively difficult. Thus, they will be introduced according to the services they provide or the pertinent plans in which they participate.

Providers connected with the medical service system are mostly professional agencies and institutions such as hospitals. In recent years, many hospitals have also gotten involved in providing integrated plan services in hopes that as the healthcare system undergoes change, they can still play a professional role. In view of the healthcare demand brought by an aging society, the Department of Industrial Technology (DOIT) of the Ministry Economic Affairs (MOEA) began promoting Senior Citizen U-Care Flagship Plan in April 2006 and the Health Care Innovative Services Plan in March 2007, with many hospitals actively participating to encourage vendor involvement in the innovation of pertinent services.

In 2006, applications for 6 construction projects and one planning project were approved as part of the Senior Citizen U-Care Flagship Plan, including a Senior Citizen High-Quality Healthcare Service Innovation Plan led by the Chang-Gung Medical Foundation for developing a service network principally involving Chang-Gung Memorial Hospital and the Chang-Gung Health and Culture Village (in Linkou); the Outstanding Life, Blessed Connection with Health Care Services Plan led by Taiwan Secom Co., involving construction of a health control center to provide nationwide operating services for forming a service network with various local hospitals, such as the Chiayi Christian Hospital Healthcare Customer Center to provide localized healthcare services; the Omni-functional Elderly Life Healthcare Network Project led by Chiayi Christian Hospital for its Yung Ho branch hospital to invest in building a Healthy Life Management Center bring community medical

groups and 17 medical clinics in the Chung Ho and Yung Ho area, such as Taipei Medical University Shuangho Branch, etc., along with long-term healthcare system and health and life service system into an integrated service network; the De-institutionalized Enderly Healthcare Service Platform Project led by Min-sheng Medical Holding Co. centered on the Min-sheng Healthcare system and promoting construction of Community and Hospital Integrated Healthcare (IDS) community medical group service network involving five communities (Lu Zhu, Da Shu, Bai Tao, Kang Jian and Cheng Zhong); and the Wireless Monitoring System Operation for the Home-bound Elderly with Diabetes and High-Blood Pressure Healthcare Services Project led by the Yunlin County Elderly Benefit Assurance Association to work in cooperation with TaiDoc Technology Corp. in expanding the association's Telemedicine Home-care Services Center into a 24-hour a day operation and combining it with Yunlin Hospital and community clinics to form a service network.

In line with the industry development package of plans, including the Executive Yuan's Flagship Project to Technologically Enable Services and its first phase 3-year Economic Stimulus Plan (2007-2009) for Economic Development by the year 2015, DOIT in 2007 began promoting the Healthcare Innovative Services Plan to accelerate construction of the healthcare service system and spur development of related industries. The plan encourages agencies connected with healthcare and management to collaborate closely with pertinent technology vendors to utilize technological tools to boost the quality, scope, efficiency and efficacy of healthcare and develop diverse healthcare services and innovative business operating models. The project promotes two themes: 1) development and construction or initial planning of chronic illness management services and operating systems, with applications for 17 development and construction projects and 7 initial planning projects approved; and 2) senior citizen life, cultivation and entertainment innovative services and operating initial planning, with 13 initial planning applications approved.

At present, the Healthcare Innovative Services Plan mainly targets designated chronic illnesses that may be health manageable, using ICT planning or construction of

chronic illness management service systems and platforms, and combines medical or healthcare agencies of more than one in number to build a complete service network and operating system to develop innovative operating models. For example, the Pingtung Area Senior Care Innovative Services Project has expanded provision of medical and healthcare services by the DOH's Pingtung Hospital to other nursing homes, daytime care, and home care agencies for some time, combining the experience of Ubiquitous industry consultants and systems for a complete long-term care configuration, concretely providing a senior citizen health care innovative service model for the Pingtung area, four major service modules, and trial building a benchmark long-term configuration as a paradigm for this project.

Projects like the Chronic Illness Home Reassurance Active Healthcare Service Development and Construction Project led by Taichung Veterans General Hospital provides:

1. Health index assessment service:

- 1) Subjects: Healthy, quasi-healthy and diseased groups (Taichung Veterans General patients)
- 2) Service providers: Taichung Veterans General Hospital, Taiwan Electronic Data Processing Co., and the Association of Advocacy (health education information and care-giving services).

2. Disease management and monitoring service

- 1) Subjects: Taichung Veterans General's chronically ill patients
- 2) Service providers: Taichung Veterans General Hospital (disease treatment, prevention and rehabilitation), Taiwan Electronic Data Processing Co. (information system integration services), and the Association of Advocacy (assistance in obtaining medical attention) and UbiQ (healthcare box).

3. Active healthcare service

Subjects: Taichung Veterans General's chronically ill patients

Service providers: Taichung Veterans General Hospital (disease treatment,

prevention and rehabilitation) and Taiwan Electronic Data Processing Co. (information system integration services).

There are other projects, as well, such as the Brain Stroke Individual Health Management Innovative Service Project, Telehealth Management Platform Project, New Chronic Disease Telemedicine Management Services Project, Chronic Illness Integrated Care and Operation Model Construction Plan, Chronic Illness Sufferer Entertainment and Recuperation Service Plan, Integrated Diabetes Care Center Plan, Pingtung Emergency Heart Care Treatment System Construction Plan, High Blood Pressure and Blood Pressure Disease Prevention and Cure Chronic Disease Management Services and Operating System Plan, Senior Home Care Health management and Reassurance Connection Service Plan, Chronic Illness Education Service Platform Plan, Chronic Illness and Healthcare Supervised Care Network Plan, Telemedicine Home-Care Plan for Breathing Apparatus Dependent Sufferers, and Ubiquitous Telemedicine Healthcare Plan, led, respectively by the medical college affiliated with China Medical University Hospital; Universal Technology Systems, KaeYueh InfoComm Tech Co., Cheng Hsin Rehabilitation Medical Center, China Medical University Beigang Hospital, Changhua Christian Hospital, Fooyin University Hospital, E-Da Hospital, Chung Shan Medical University Hospital, Netown Corp., Chain Sea Information Integration Co., Chunghwa United Telecom Group and En Chu Kong Hospital. These innovative projects will bring development of the industry in Taiwan, but since they are only in the trial stage, how to sustain them or transform them into commercial models is an even more important key point for development.