Investment Opportunities in the R&D Industry in Taiwan

I. Industry Definition and Scope

The research and development (R&D) refers to the industry providing R&D services through specialized knowledge and skills in the fields of natural, engineering, social, and human sciences. R&D can be divided into three main categories: providing R&D strategy planning services, providing specialized technology services, and providing planning for the utilization of R&D results services. These categories are summarized below:

- Providing R&D strategy planning services: Includes market analysis research, technology forecasting, risk assessment, technology development planning, intellectual property search and retrieval, trend analysis of intellectual property, intellectual property layout and strategic layout planning according to R&D results, etc.
- Providing specialized technology services: Includes specialized technology of an industry or field, hardware and software services, experimental simulation testing services, manufacturing services, etc.
- Providing planning for the utilization of R&D results: R&D result investment evaluation, innovation and entrepreneurship incubation, R&D result combination and marketing, R&D result rating, R&D result transferring and licensing, R&D results protection and infringement identification, R&D result revenue model planning, etc.

II. Taiwan’ s Industrial Environment

According to the data from Minister of Finance, the total sales revenue of Taiwan’s R&D industry has grown over the years from NT$21.6 billion in 2005 to NT$25.3 billion in 2013, and company numbers increase to 312 from 119, indicating a steady growth of Taiwan’s R&D industry (Table 1).

Taiwan’s current research and development is roughly divided into: basic research by academic research institutions, applied research by corporate body research institutions, technological R&D by industry R&D divisions, R&D for upgrades in the manufacturing stages, and business models. Due to the rapid advances in technological R&D in the past few years, along with the complicated integrations of technology,

business opportunities are contingent on short timeframes. In order for domestic and overseas corporations to improve R&D efficiency and decrease the amount of time required for product commercialization, they have slowly started to outsource internal R&D activities that are not efficient and do not fulfill economies of scale to professional R&D service companies. This is the main reason Taiwan hopes to encourage growth in the R&D sector. Since the early stages, R&D has mostly consisted of technology companies establishing R&D divisions in Taiwan focused on the R&D of their own company's products, whereas R&D outsourcing mostly encompassed pharmaceutical research or intellectual property and inspection.

Table 1 Sales Revenue and Number of Company in R&D Industry

Unit:NTD1,000

	Sales Revenue	Numbers of Company
2013	25,287,555	312
2012	25,459,309	275
2011	25,970,117	254
2010	24,940,380	241
2009	22,513,828	190
2008	22,985,968	168
2007	22,195,370	148
2006	23,908,650	138
2005	21,623,462	119

Source: Minister of Finance Statistical Database

III.Analysis of Industry Chain Gap

When examining Taiwan's R&D over the past ten years vis-à-vis the different categories of universities and colleges, government departments, and private non-profit R&D organizations, R&D ranks highest among the government R&D institutions, followed by universities and colleges. The two account for a large portion of R&D; however, the amount of R&D institutions has gradually flat lined while universities and colleges continue to grow.

The R&D of private companies and private non-profit R&D institutes only account for a relatively small portion; therefore, the two sub-industries — private company R&D and private non-profit R&D institutes — are likely an area that Taiwan can strengthen

and invest in to fill the gap in the industry chain.

IV. Advantages of Investing in Taiwan

- The R&D is considered a part of the professional and technical service industry, which is among the 12 key service industries the government is working to promote. It is a key industry supported by the government.
- Production output is steadily growing and there is room for growth.
- There are many small and medium businesses in Taiwan that have a great demand for R&D services.
- The high cost of technology licensing and the increasingly complex R&D content has made outsourcing R&D a rising trend.
- In this era of the knowledge economy, management and implementation of industry R&D results is becoming increasingly important.
- Intellectual property has gradually become a core value and important asset of a company.
- With a large number of university and college campuses and high level of education attainment in Taiwan, we can provide a large number of high-level engineers who are talented in professional R&D technology.

V. Business Opportunities and Potential

Because competition is becoming more and more fast-paced, we can only respond to international competition by strengthening our practical capabilities, owning intellectual property patents, and steady layout planning. In this vein, outsourcing R&D, industrial design, product R&D design, invention patent industrialization, and establishing certification technology that will be recognized internationally are all international trends. This is the direction the Taiwanese government is actively trying to pursue, so the establishment and introduction of companies related to the abovementioned R&D will have a large number of business opportunities and potential.

VI. Policies and Incentives Measures

In order to encourage companies to take part in the R&D development, the government has provided related policy benefits for the R&D, including:

- “Promoting Industrial R&D Loan Program”: to encourage businesses to invest money into the R&D, promote industry innovation, and strengthen corporation

competitiveness, the Ministry of Economic Affairs has announced the "Promoting Industrial R&D Loan Program Key Points" to provide corporations with funds. The applicable range of industries includes the Internet industry, manufacturing industry, technology service industry, logistics service industry, and cultural and creative industry.

- Aid related to technology R&D: in order to encourage the R&D of industry technology, the Ministry of Economic Affairs Department of Industrial Science and Technology promoted many technological projects, the aid ratio is determined by the project nature and content, but will not be higher than 50%.
- In terms of the R&D investment tax credit, the "Company R&D expenditures investment tax credit approach" was amended on December 27th, 2011. Companies can apply for the R&D tax credit for related highly innovative R&D events. The R&D is defined by (1) manufacturing processes, service programs or systems, or prototype services related to developing or designing a new product or service, and (2) R&D activities related to the development of new raw materials, new materials, or components handled by the company's R&D division.