

Socialist Republic of Viet Nam

**Preparatory Survey on
BOP business on pedaled wheelchair for
rehabilitation and social inclusion of people
with disability in Vietnam**

**Final Report
(Summary)**

March, 2013

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)

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Chapter 1. Business objectives

This BOP survey is conducted with an objective to help TESS Ltd. to effectively distribute pedaled wheelchairs ("Profhand"), made by low-income and disabled people to the people of same condition. Vietnam has insufficient rehabilitation methods and with the aim of business development of the pedaled wheelchair by infiltrating standards of pedaled wheelchair rehabilitation technology to recover health through "having fun" and "through employment", and set as a model country for "Rehabilitation with employment and social participation". Rather than growing the business exponentially, it is important to keep in mind that the products made by the disabled and low-income people are utilized for the people under similar circumstances, and most importantly, the sales should aim the promotion of people's health, and the profit should be utilized in promoting employment and job creation for low income and disabled people.

The number of disabled people, especially with joint/movement disorder has been increasing rapidly in Vietnam. Due to the limitation in both quality and quantity of rehabilitation centers, people cannot return to the society in many cases, even though they return home after rehabilitation. Among the disabled people, many cases are through traffic accidents and rehabilitation services for these kinds of people are expected to increase further. By disseminating pedaled wheelchairs that can be in used not only in rehabilitation centers or hospitals but also in narrow spaces of houses, disabled people with low-income have higher chances to get employments and improve their livelihoods along with their social reintegration. It is believed that this will also contribute to the economic disparities in Vietnam.

Chapter 2. Situation of disabled people in Vietnam

[Basic Information of Vietnam]

Table 1: Basic Information of Vietnam (2011)

Political system	Socialist republic
Local government	63 Cities/ provinces (Capital City: Hanoi)
Language	Vietnamese
Area	330,957 square kilometers (About the same as in Japan, excluding the Kyushu island)
Population	87.84 million people
Rural / urban population ratio	30.6% / 69.4%
Real GDP growth rate	5.9%
GDP per capita	1,374 USD
People	Kinh (about 90%), Other 53 ethnic minorities
Religion	Buddhism (about 80%), Catholic, and Cao Dai etc.
Consumer price inflation	18.6%
Exports to Japan	10.781 billion USD (11.1% of total exports)
Main export items to Japan	Computer products, electronic products and parts (11.4%), steel and steel products (17.7%), Plastic products and raw materials (7.9%)
The amount of imports from Japan	10.4 billion USD (9.7% of total import)
Japan's main import item	Garments (15.0%), electric wire and cable (11.9%), Machinery, equipment (11.7%)
Wage for middle management	669.3 USD /Month
Minimum wage of workers	2.35 million dong (about USD 110)/ month
Corporate income tax	25%
Personal income tax	35% (highest rate)

Fatalities from traffic accidents	11,395 people
The number of Japanese companies	940 companies
The number of Japanese residents	9,313 people

Source: http://www.ietro.go.jp/world/asia/vn/basic_01/

[Current situation of disabled people in Vietnam]

According to the Vietnam National Assembly Commission Report 2006, the population of disabled people is about 5.3 million which is equivalent to 6.34% of the total population and 70% of them are counted in working population. Among the type of disorder, the most frequent one is joint/movement disorder which accounts 29.41% of the total. According to the interviews from Ministry of Labor, Invalids and Social Affairs (MOLISA), there are no statistical figures that show the causes of disabilities and further details and types of movement disorders are also unclear. The data shown here are administrative data collected only by understanding the outlook of facilities for disabled people.

In addition, few more questions concerning the disabled people had been prepared in the 4th population census that was conducted in 2009. According to this survey, the number of the disabled people has risen to 6.1 million people, i.e. 7.8% of the total population above age 5. Out of this, 385,000 people are listed "severely disabled people". The number of the disabled people is increasing in the order of visually impaired and joint/movement disorder (3.7% of the total population above age 5, 2.9 million people). Many disabled people have been entered continuously in the list and the number of disabled people is increasing beyond 1.59 million as mentioned in the report discussed above.

Table 2: Basic statistical data related to disabled people in Vietnam

Item	Number	Year	Source
People with Disabilities	5.3 million	2006	Committee Report on Vietnam National Assembly
	6.1 million	2009	4 th Population Census
Of which, People with joint/movement disabilities	1.59 million (Approx.)	2006	Committee Report on Vietnam National Assembly
	2.9 million (Approx.)	2009	4 th Population Census
Household poverty rate for persons with disabilities	32.5%	2009	MOLISA sample survey

Created by: JICA Study Team

People with disabilities are vulnerable in economic aspects and in society. According to the above-mentioned parliamentary committee investigation report, about 80% of the disabled persons have no income. According the report of FY2010, National Coordinating Committee on Disability (NCCD), MOLISA sample survey conducted in November 2009 shows poverty rate of 32.5% in the household with disabled people. This rate is twice in compare to the overall poverty rate in Vietnam during the same period. Already having tough lives, many disabled people, wanted to earn their own livings, but there are variety of constraints, such as the difficulty in movement and others which prevent them to gain incomes. The illiteracy rate of people above age 6 is 34.3% and the data shows that the disabled people without any vocational training are 88.94%. About 55% of the disabled people are in need of assistance of employment opportunities or some sort of productive capital to support them.

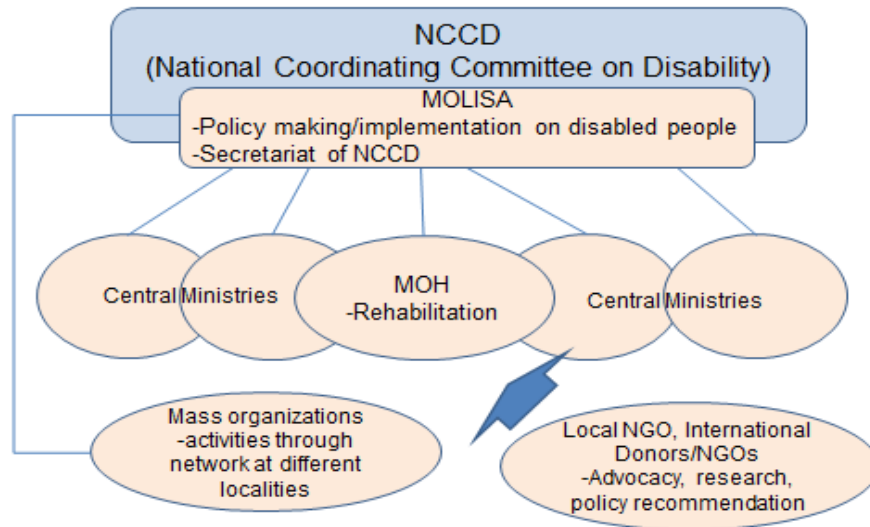
[Administrative support systems for people with disabilities]

MOLISA plays major role carrying out the policies including the welfare policies related to disabled people in Vietnam. In the "Disability law" that came into force from January 2011, MOLISA has been defined a central role. The Social Protection department under this ministry is the main supervisor. Moreover, NCCD that is established to support the disabled people by performing an inter-ministerial function is also using MOLISA as secretariat to prepare variety of annual reports. At the local provincial level, department of labor, invalids and social affairs (DOLISA) is primarily responsible for policy implementation as the provincial agency of social protection for disabled people.

On the other hand, in terms of rehabilitation, the Ministry of Health (abbreviated as MOH) also has an important role to support the disabled people. There are functional departments of rehabilitation in the hospital of the central level but only 36 general hospitals in the provincial level have equipped rehabilitation department (out of 63 provinces). Moreover, the level rehabilitation center and hospitals with rehabilitation specialist are very limited and health centers at commune level barely have such specialists assigned.

In addition, a variety of "mass organizations", which are a distinctive institutions in Vietnam also have established network in a rural area to support the disabled people. NGO and many non-profit organizations including international partners are also active in variety of fields.

Figure 1. Relationship diagram of main players related to policy for disabled people in Vietnam.



Source: JICA study team

[Policy to support individual disabled person]

The disabled people in Vietnam have the right to receive “National Subsidy”. The amount of grant for people with mild disabilities is 65,000 VND per month (equivalent to 500 JPY by the exchange rate of 2011), which is a very small amount.

According to the interview with Deputy Director of Social Protection Agency Thai Phuc Thanh of MOLISA, there is a policy to support for individual purchase of wheelchair but due to lack of budget, it has not been implemented.

Under the policy to support the disabled people, “the assistance program for disabled people from 2012 to 2020” has been approved in 5th August, 2012. Under this program, vocational training to the disabled persons, barrier-free buildings with a focus on transport infrastructure and public facilities, and legal aid have been mentioned. Specific targets for 2015-2020 are raised; such that 250,000 people between 2012-2015 and 300,000 disabled people between 2016 and 2020 will be given vocational training to help them get jobs. In addition, 50% of government facilities like stations, hospitals will be made barrier free by 2015 and the aim is upraised to 100% by 2020. Construction of rehabilitation centers to upgrade work ability is also included in pilot along with various measures listed above. From the fact that the policies programs are led by MOLISA, social recovery and development has been emphasized through the employment of the disabled people. The

department in MOLISA was interviewed during the field survey regarding the policies program but there is no much movement and no directional path has been suggested.

[Preferential policies related to Employment of People with Disabilities]

To encourage employment, Vietnam`s Disability law has been in effect since January 2011. According to this policy, the company with disabled people more than 30% of the total will be given priorities for low-interest loans and will be prescribed for various beneficial policies. In addition to the conventional laws for disabled people, the current code of labor Code revision also extends along with the spirit of the disabled people and in course of manufacturing, sales of wheelchairs, favorable environment is expected in the future. According to the Disability law, the companies employing 30% or more disabled people can enjoy incentives such as reduction in water bills, rental rates, exempted from corporate income taxes, preferential loans and also receive support in building environmental improvement and barrier free facilities (Article 34 of the law). It also introduces the concept of barrier-free buildings for local transportation facilities and different government agencies.

The circular, No. 14/2008/QH12, enacted by the Ministry of Finance and in the Circular (130/2008/TT-BTC), states that (1) corporate tax is exempted if more than 51% of the employees are physically disabled; (2) income and corporate tax is exempted if vocational training activities are targeted for the physically disabled people.

To encourage vocational training for disabled people, vocational training law, article 68-72 that was enforced in 2006, outlines exemption of tuition fee.

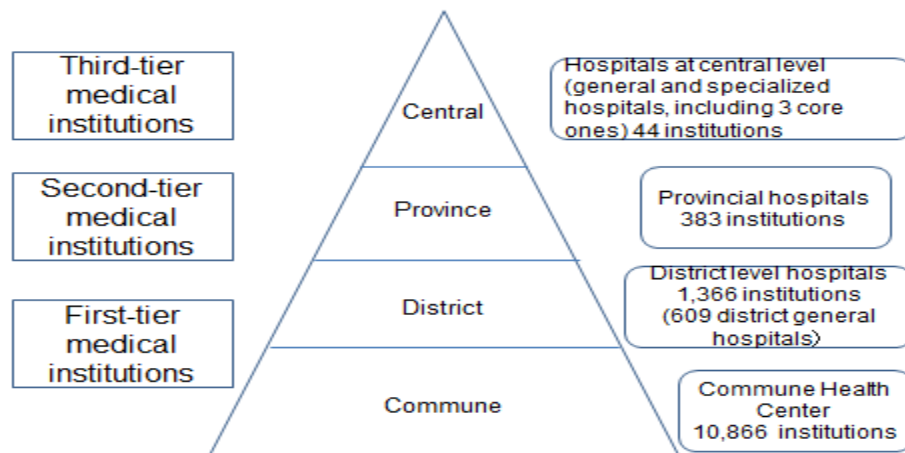
[Overview of Insurance system and medical institutions]

Medical insurance system in Vietnam began in 2005 with continued improvement of the policy and it states that the children under 6 will be given free medical care. The number of participants in the medical insurance have increased and according to the “2010 Vietnam Household Living Standard Survey” by the General Statistics Office, 66.7% of the population are using medical insurance coverage during 2010. The government aims to ensure that all citizens participate in health insurance by 2014.

Medical insurance in Vietnam is only applicable and limited to the hospitals in the insured residential area. In respect to the vertical structure of Vietnam`s medical institutions, quality and quantity of equipment, and healthcare workers varies greatly from commune and district hospitals, and those under direct control of the big city or MOH. To avoid the excessive concentration in the main hospitals, the patients are assigned specific designated hospitals and those who have received introduction letters can go to the higher level hospital to acquire further medical services. However, the hospitals at local areas are not well trusted, and the central hospitals are crowded with patients. In Bach Mai hospital which is the largest national hospital located in the northern Vietnam, the floors are always

packed and in 2008 the rate of occupancy (Number of patients hospitalized over the available number of beds.) was over 177%. Other hospitals also have very high occupancy rate from 170 to 180 %.

Figure 2: Conceptual diagram of medical institutions in Vietnam



Source: (http://www.ncgm.go.jp/kyokuhp/library/health/pdf/201012_vetnam.pdf)

[Status of rehabilitation]

There is a huge congestion of patients in the above-mentioned hospitals, and the stay period of rehabilitation patients in the hospital is very short. Rehabilitation period over few months like in Japan is not provided and in many hospitals, most of the patients are discharged in 1 week to 1 month mainly because of insufficient number of beds. And once the patients become able to move to some extent, both the health care workers and patients do not find compulsion to prolong the rehabilitation activities.

Many hospitals charge the rehabilitation fee under different menu items that are prepared by the hospitals. In some places, in-home rehabilitation services are offered, that cost about 100,000 VND/hour. Moreover, general hospitals do not provide meal and hence family members and relatives of hospitalized patients must be accompanied all time for food delivery and other activities. In response to an interview with a rehabilitation patient in the Bach Mai hospital, the charges at the hospital are from 6 to 7 million VND/month with additional charge of 7 to 9 million VND to hire an attendant for help. Basic rehabilitation menu cost a fee of 120,000 VND / hour in a day and separate fee to perform a variety of other trainings is required. In addition, daily transportation expenses are required for hospital visits every day. In case of accompanying person, the opportunity cost of possible income received by working is added to the rehabilitation cost in a broad sense.

In case of central hospitals or ministerial hospitals having rehabilitation department, it has been confirmed that a certain amount of equipment that are generally required for rehabilitation are available, however due to huge number of patients, there is no enough space to move around freely and to do the rehabilitation activities. Many of the wheelchairs are produced by Kien Tuong, the largest domestic producer of wheelchairs, and many Chinese products are also available. In comparatively well-equipped hospitals like Bach Mai hospital, equipment like exercise bikes and treadmills are also available.

Chapter 3. Environment for investment

In general, investment environment in Vietnam can be summarized as in Table 3 below. After comparing with other emerging economies, it is determined that investment in various manufacturing industries in Vietnam is appropriate but on the other hand, full evaluation of the market, price of the goods and products are necessary despite of high investment potentials in domestic consumer goods.

Table 3: PEST (Politics, Economics, Society, and Technology) analysis of investment environment in Vietnam

Political aspect	<ul style="list-style-type: none"> • Being a socialist country, one-party system of Vietnam Communist Party. • Considering stable political situation, business risks are relatively low. • In January 2011, 11th Communist Party Congress was held with the goal to grow as a modern industrial nation by 2020 through high growth policies. While maintaining the ideology of the communism, people with private businesses are allowed to join the party experimentally.
Economics aspect	<ul style="list-style-type: none"> • Currency Vietnam Dong (1 Yen = 215.93VND, 5th March, 2013) • Real GDP growth rate 5.9% (2011). • Around 2010 and 2011, the economy suffered from high inflation rates about 20% but showed gradual stabilization (9.2% in 2012). • In the ASEAN 10, Vietnam ranked 3rd in population, 6th in nominal GDP. According to the World Economic Outlook of the IMF, April 2012, economic growth rate of 7.0% is forecasted in 2017. • There was also a time when real estate, land prices rose significantly.
Social aspect	<ul style="list-style-type: none"> • The population is approaching 90 million. Population growth rate is about 1.2% on average over the past 10 years. The median age is about 27 years old, with a population of about 70 percent under the age of 35. • The literacy rate for both male and female is over 90% (95.1% male, 90.2% female) • Due to geographical situation i.e. the country expanding long from north to south, the characteristics of the people is different in the north and in the south. • From experience of war and socialism, it is believed that the consciousness of the people in bond with their families, relatives (blood bond) are very strong.

Technical side	<ul style="list-style-type: none">• Due to the insufficient development of supporting industries, Japanese manufacturers in many cases have to struggle to get local procurement of parts and machinery.• The number of Internet users is 31.3 million people. The number of broadband subscribers is 4.1 million (the number of computers operated in Vietnam in 2010 is 5.32 million). Internet dissemination rate is about 36% of the total population.• The number of mobile phone subscribers is 15.4 million (2010). The number of fixed telephone lines is 16,400.
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Source: JICA study team

Chapter 4. Business strategy

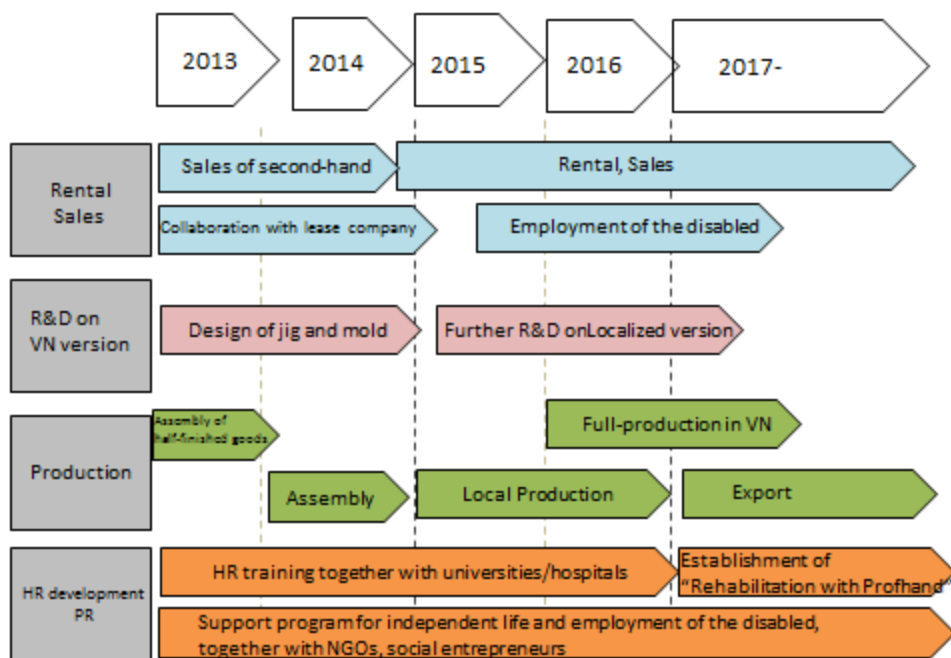
[Product]

TESS that has been mainly selling their pedaled wheelchair, "Profhand", in Japan, is now going to improve and customize it for the Vietnamese social environment to distribute them to the disabled people in Vietnam. "Profhand" is based on new medical technology called Neuromodulation which has been researched and developed by group led by professor Yasunobu Handa, Tohoku University Graduate School. "Profhand" is a pedaled wheelchair that has a unique property to recover, maintain and prevent the physical functions.

[Summary of the business]

Business development for next 5 years is planned to proceed in each of value chain processes (see Figure 3).

Figure 3: Future business development



Source: JICA study team

a) Rental and Sales

Sales and rental of used pedaled wheelchair from Japan is planned between 2013 and 2014. Sales and rental will be piloted in Bach Mai hospital, and the price and rental system

will be defined by this pilot operation. After that the sales and rental is considered to expand in the Northern Vietnam through the network of Bach Mai hospital.

The development of pedaled wheelchairs customized for Vietnamese society is assumed to be completed between 2015 and 2017. Along with the sales and rental of the wheelchairs, not only B to B (sales and rental related to welfare facilities and hospitals) but also B to C will be promoted.

b) Product development

In the process of the development of pedaled wheelchair for Vietnam, the design of jig and mold will be carried out in cooperation with a factory in Dong Nai Province between 2013 and 2014. In addition, careful examination will be conducted on daily life conditions of disabled entrepreneurs supported by NGOs for the improvement of the actual product. The aim to commence the sales and rental of the pedaled wheelchair for Vietnam is after 2017, and the development process is supposed to be completed by then.

c) Production

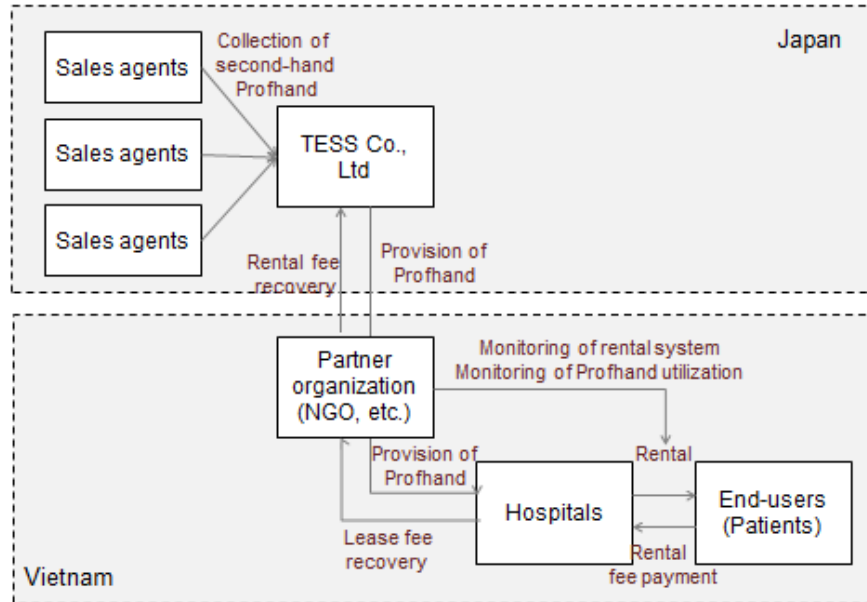
From 2014, whole process of assembly will be carried out in Vietnam. After production launch in 2015, production bases will be established by 2016, so that overseas export and production capacity can be achieved in 2017.

d) Human resource development

From 2013, self-support programs and labor sales programs will be implemented with cooperation from the entrepreneurs and NGOs in Vietnam. In order to make effective use of pedaled wheelchairs, human resource development programs in collaboration with universities and hospitals are scheduled to be conducted between 2013 and 2016. More specifically, collaboration with “Handicap International” and “DP Hanoi” is expected. “Handicap International” and “DP Hanoi” have been implementing human resource development programs and independently supporting disabled people by cooperating with educational institutes in Vietnam and with Sendai University that has been involved in the research of Profhand.

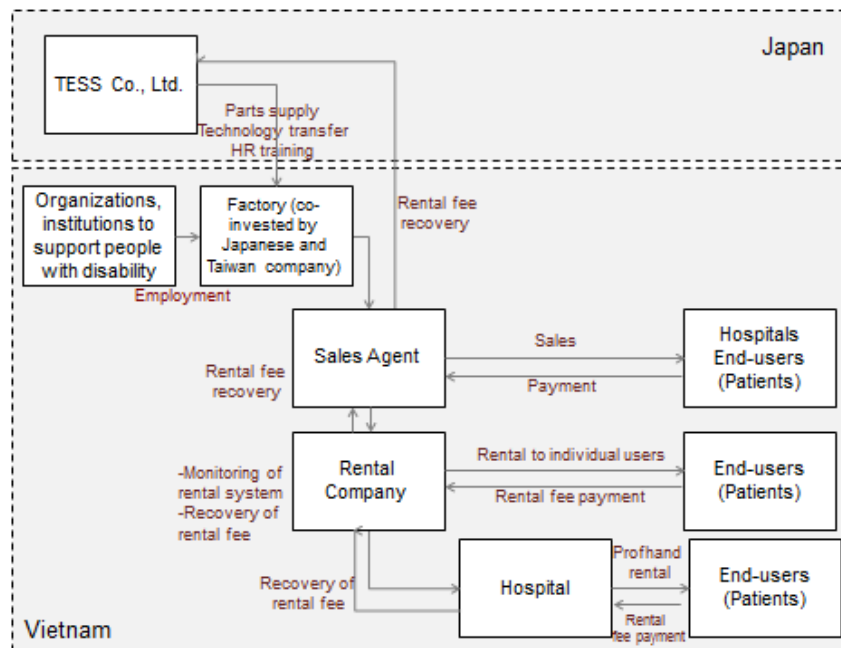
The five-year business plan mentioned above can be conducted in two phases. Phase 1- Development of local version of the product and preparation for local production along with creating a rental model and using second-hand (used) products (Fig 4). Phase 2- Employment opportunities for disabled people through the local production, and further expansion of business through rental leasing companies (Fig 5).

Figure 4: Phase 1, Conceptual diagram of business model



Source: JICA study team

Figure 5: Phase 2, Conceptual diagram of business model



Source: JICA study team

[Service scheme for provision of the product (Profhand)]

Sales or rentals of the products will be conducted to facilitate the need of rehabilitation centers, mainly in hospitals and medical facilities. The scheme includes distribution of the profhand “which enables restoration of the physical functions during daily movements.” for the people with disabilities or the families having physically disabled people who are facing financial problems, and building and developing rental system through hospitals and medical facilities at the same time.

In Phase 1, sales of used/second hand products are planned at about 30,000 yen. Rental price is scheduled to be adjusted according to market research in the future but at the present, the rates are adjusted between 2,500 to 3,500 yen per month (500,000~1 million VND) in reference to the conducted interviews. If the TESS receives about 20% of the rental fee, about 30,000 yen can be recovered within 7 months (in case of 3,500 yen fee from the end-user) to 10 months (in the case of 2,500 yen fee from the end-user). In April 2013, the rental business on a trial basis will be conducted in order to establish this service, at hospital Bach Mai, using 3 pedaled wheelchairs. TESS will not collect charges from Bach Mai hospital this time because the objective is solely to test the potential of the rental business. Rental services of the used products from Japan will begin from the second half of 2013. In order to run the management of user status and fee collection as demonstrated in Bach Mai hospital, a rental system model is to be built and partnership with organizations to oversee the rental and sale are specially considered from this stage. At the stage when the products for Vietnam are ready, the partnership with distributors and rental companies are considered to build the rental scheme to target individuals and more hospitals or facilities.

[Target customers /BOP layer]

The targets of this product, as maintained previously, are narrowed down to those who are suffering from hemiplegia in stroke or bone marrow damage among 2.9 million people with movement disorder. Out of this, during the first 5 years of the business, the target is further narrowed down to the hospitalized patients. Most of these targeted disabled people are the layers of BOP and their households are often under poverty.

Chapter 5: Implementation of pilot activities

[Outline of pilot activities]

Table 4: Outline of pilot activities

Period	24 th November, 2012 ~31 st January , 2013
Purpose	-Check the rehabilitation effect of Profhand in Vietnam. -Conduct interviews with Profhand users and survey the usage experience and feeling along with the thoughts on fee and the rental system.
Investigative method	-Measure and compare the Barthel Index , grip strength, maximum walking distance, the distance traveled by the pedaled wheelchair before and after the study. -The movement speed of Profhand is recoded on daily basis (Retain the training period of 15 days or as long as the patient's physical condition is favorable to participate in rehabilitation).
Data collection	-The staffs at Bach Mai hospital are commissioned to keep the record. -Received approval from the patients who participated in the pilot, for using their data only within the scope of the survey through Bach Mai hospital.
Implementation location	-Bach Mai Hospital Rehabilitation Center (The hospital has been selected for implementation because of cooperation from the Director of the Center, and being the most well-equipped rehabilitation center in North Vietnam with high leadership skills of the rehabilitation staffs.)
Target	-Paralyzed patients due to stroke (10 patients) -Paraplegia patients due to spinal cord injury (2 patients)

[Effect of Rehabilitation]

Out of 12 rehabilitation patients who participated in the pilot, sufficient data for analysis is collected from only 9 patients. No significant differences were seen in grip strength before and after the training in the pedaled wheelchair. However, functional recoveries were seen in the total movement distance covered by the wheelchair, Barthel index and maximum walking distance. In addition, significant correlation was observed in the increment of the distance covered during the training and during independent movement (Figure 6).

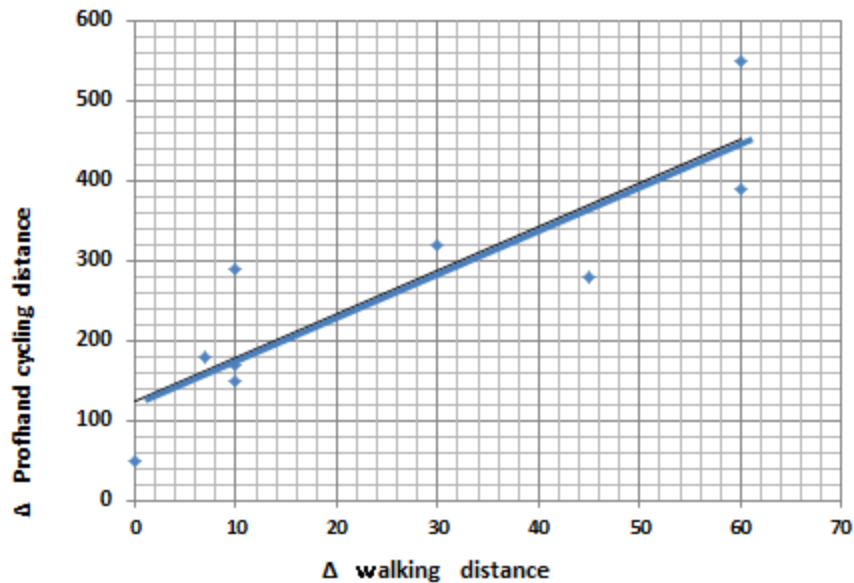


Figure 6.
Relation between Profhand cycling distance and walking distance after training

Functional gain (Δ) was defined as the difference between before and 2 weeks after training.

[Result of market research based on user`s interviews]

Table 5 Feedbacks about Profhand from pilot trial users

	Younger generation	Elderly
Impression on Profhand	<ul style="list-style-type: none"> -Highly interested in new forms of rehabilitation. -Considering insufficient rehabilitation in general hospitals in the past, the patients would like to use it as much as possible to be able to return back to work. 	<ul style="list-style-type: none"> -Individual differences in level of interest regarding the extend of rehabilitation.
Convenience in operation	<ul style="list-style-type: none"> -Operation is simple and popular. 	<ul style="list-style-type: none"> -There are difficulties at first but can easily operate after getting used to. -The handling operation is difficult to some elderly (specially stroke patients) -Difficult to explain the operation manual to people with language

		disorder.
Response on rental system and the fee	<p>-It seems impossible to purchase individually with the current price of Profhand.</p> <p>-No hesitation to use certain amount of money rental usage.</p> <p>-Trend of seeking more rehabilitation opportunities even for higher cost against comparatively higher opportunity cost loss for either wife or husband to accompany they spouse.</p> <p>-The borderline for the marginal costs is 1 million VND (about 50USD) / per month.</p> <p>-There are cases of compensations for the treatment cost from work places if the accidents are certified as a work related accidents.</p>	<p>-It seems impossible to purchase individually with the current price of Profhand.</p> <p>-Individual differences are seen even for the renting fee.</p> <p>-Doubt against recoveries through home-based rehabilitation only by pedaled wheelchairs at home.</p> <p>-Possibility for accepting the cost burden is somewhere between 400,000 to 1 million VND (20-50 USD) per month.</p>

Chapter 6. Business plan after launching in Vietnam

Business in Vietnam is scheduled to launch in April 2013, with the following 3 principal business principles of TESS Ltd.

I. Market development and the development of low-cost version;

II. Own factories are not established at beginning stage, assuming local production through outsourced contract manufacturing through technology transfer.

III. In order to build a sustainable rehabilitation system, educational and human resources development activities are carried out in cooperation with associated external organizations.

[Prerequisites for business planning]

a) Sales volume and sales price

The target is to collect and sell 110 used wheelchairs from Japan, and to sell 6,500 locally manufactured wheelchairs in five years. Sales expectation for each year is shown in the table 6 below. Higher price of the second hand/used wheelchairs than that of the locally manufactured ones after 2015 is due to their higher specification (than the local version) and to adjust the higher price according the flow of the market.

Table 6. Sales planning of this project (Unit price: thousand yen)

		2013	2014	2015	2016	2017
Second hand/Used Wheelchairs	Quantity	50	30	10	10	10
	Price	20	30	60	60	60
Locally manufactured wheelchairs	Quantity		600	1200	2000	2400
	Price	30	30	30	30	30

b) Initial investment

In order to start a business in Vietnam, investment of about 30 million yen is considered for outsourcing expenses, personnel expenses and purchase cost.

[Outline of business plan]

Table 7. Outline of business plan

	1 st year (2013)	2 nd year (2014)	3 rd year (2015)	After 4 th year (2016~)
Sale& Business	Market Development (Selection of the facility to be monitored) (Offer free or low-cost in medical institutions and rehabilitation facility by the use of second hand/used products) (Approaching universities, research institutions, etc.)	Continuing market development activities Market introduction of the cheaper products (Promotional activities through exhibition) (Building a network of distributors)	Continuing market development activities Full-scale sales of the cheaper products (Promotion) (Expansion of the dealer's network) Reviewing and building rental, rental scheme	Continuing market development activities Increment of sales through rental and full- scale operation of rental activities Export of products to Japan (Existing product) (Bargains)
Research and Development	Development of low cost products	Establishment of mass production system	Improvement of products	Improvement of products
Manufacturing	Search for contract manufacturers	Confirming the contract manufacturers and introduction of Technology Training of local technicians in Taiwan or Japan Launch contract manufacturing	Mass production	Mass production Transfer of production base (From Taiwan) for Japan
Intellectual property	Trademark determination in	Patent applications of	—	Negotiations for contract

	Vietnam and registration	the cheaper products		modification with Taiwan
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Source: JICA study team

[Lost and profit plan of the business]

Table 8: Lost and profit plan of the business. (Unit: Thousands yen)

		Preparation	1 st year (2013)	2 nd year (2014)	3 rd year (2015)	4 th year (2016)	5th year (2017)
Turnover		-	1,000	18,900	45,600	60,600	72,600
Purchases		-	1,500	900	300	300	300
Manufacturing cost	Procurement cost (material)	-	-	5,400	13,500	18,000	21,600
	Personnel expenses	-	120	240	240	240	240
	Outsourcing cost	-	-	1,800	4,500	6,000	7,200
	Others	-	-	540	1,350	1,800	2,160
	Total	-	120	7,980	19,590	26,040	31,200
Sales cost		-	1,620	8,880	19,890	26,340	31,500
Gross Profit		-	△620	10,020	25,710	34,260	41,100
Marketing & administrative expenses	Personnel expenses	-	4,080	4,080	4,224	6,930	7,128
	R&D expenditure	-	5,000	3,000	-	-	-
	Outsourcing expenses	1,000	2,000	2,000	2,000	2,000	2,000
	Sales promotion	-	2,000	2,000	800	800	800

	expenses						
	Others	-	50	945	2,280	3,030	3,630
	Total	1,000	13,130	12,025	9,304	12,760	13,558
Profit		Δ1,000	Δ13,750	Δ2,005	16,406	21,500	27,542
Interest payment		-	-	-	-	-	-
Profit (before tax)		Δ1,000	Δ13,750	Δ2,005	16,406	21,500	27,542
Corporate Taxes		-	-	-	-	5,288	6,886
Net Income		Δ1,000	Δ13,750	Δ2,005	16,406	16,212	20,657

Source: JICA study team

Table 9: Financial planning of the business. (Unit: Thousands of yen)

		Preparation	1 st year (2013)	2 nd year (2014)	3 rd year (2015)	4 th year (2016)	5 th year (2017)
Business C/F		Δ1,000	Δ13,750	Δ2,005	16,406	26,788	29,140
Investment C/F		-	-	-	-	-	-
Finance C/F	Capital/ Contribution	30,000	-	-	-	-	-
	Change in Debt	-	-	-	-	-	-
	Total	30,000	-	-	-	-	-
C/F Total		29,000	Δ13,750	Δ2,005	16,406	26,788	29,140
Cash balance at the beginning of the year		-	29,000	15,250	13,245	29,651	56,439
Cash balance at the end of the year		29,000	15,250	13,245	29,651	56,439	85,579

Source: JICA study team

[Structure of the project implementation]

Sales and rental in Vietnam is expected to be in full swing during 2015 and by that time, increment of people in the organization, building cooperation with collaborative system are also supposed to continue. Regarding the implementation of sale and rental with hospitals and medical institutions and production of semi-finished products from 2013 onwards, the strategy is to continue without establishing local affiliate. For upcoming 2 to 3 years, the personnel involved in the investigation will continue the same functions and Tepia Corporation will be requested to manage the rental system and collection of fees. Cooperation with Vietnamese NGOs, entrepreneurs and businessman in conjunction with general incorporated association re:terra will be going side by side along with staffing decisions. Regarding human resource development, offices will be established both in Japan and Vietnam for exchange activities between faculties and students of Sendai University and Bach Mai hospital. As for the production system, borrowing of a production line of the factory of a joint venture of Taiwan-based factory and Japanese automaker is planned and the production will begin starting from assembling semi-finished products by gradually adjusting jigs and molds from 2013. For this reason, the process can be carried out without too much investment and without much burden of management of production process due to assistance from local counterpart of the joint venture.

Chapter 7. Potential cooperation with JICA

[Collaboration with JICA "Project for Strengthening Medical Rehabilitation Service in the Southern Area of Vietnam"]

Introduction of the pedaled wheelchairs at site of the captioned project could contribute to the effectiveness of Japanese technical assistance project from both the hard and soft side.

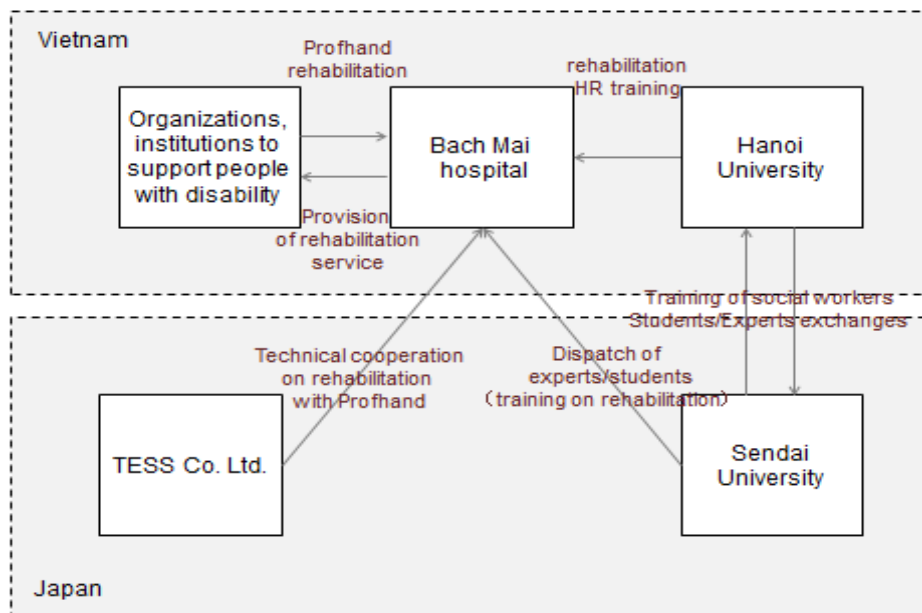
[Collaboration with Japan Overseas Cooperation Volunteers activities]

If the pedaled wheelchairs can be distributed through the activities of Japan Overseas Cooperation Volunteers in many hospitals located in provinces, rehabilitation technology and soft support from Japan will be very effective with the combination of the technology transfer by the volunteers.

[Potentials for implementation of JICA Grassroots Technical Cooperation Project]

JICA Grassroots Technical Cooperation Project in conjunction with Sendai University is also under consideration along with the expansion of this business based on the obtained information through the study (see Figure 7).

Figure 7: Conceptual diagram of "Vietnam Rehabilitation Human Resources Development Project using pedaled wheelchair" (tentative name)



(Contents of the activities: draft)

1. Technical assistance on rehabilitation methods in Bach Mai hospital by Japanese experts (e.g. from Sendai University).
2. Human resource development through training visits to the rehabilitation centers in Japan that are using pedaled wheelchairs.
3. Organization of workshops on usage of pedaled wheelchairs by TESS.
4. Rehabilitation training sessions with collaboration with NGO supporting the local disabled people.
5. Pilot of the rental system in hospitals and possibly other places proposed by this survey.

[END]