

# Expert meeting on Disability-inclusive Technology and Innovation UNESCAP, 30 August 2018

## Session 3. From Policy to Implementation

Title: A evolving network of tripartite  
partnership support to provide assistive  
devices to people with disabilities: the Hong  
Kong experiences

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In Hong Kong, over the past decades a network of tripartite partnership has evolved in providing assistive devices and related support measures to people with disabilities. The tripartite partnership support includes:

1. Government funded and directed measures
  - A. The Samaritan Fund
  - B. Support Programme for Employees with Disabilities
  - C. Support for independent living of tetraplegics: Joint efforts with NGOs
  - D. The Hong Kong Jockey Club IT Fund for persons with Visual impairment

- E. Technology and Innovation Fund for Better Living
- F. Logistics and Supply Chain MultiTech R&D Centre (LSCM)
- G. The Gerontech and Innovation Expo cum Summit (GIES) in June 2017, November 2018; and beyond
- H. Central government support to government employees with disabilities and individual departments

- 2. Initiatives and measures from Hong Kong Polytechnic University
- 3. Initiatives and measures from Kowloon Hospital of Hospital Authority
- 4. Initiatives and measures from selected NGOs: EMV, SAHK, RAHK
- 5. The initiatives of a private company

- A. The Samaritan Fund (The Fund):
- a. Provides financial assistance to needy patients to meet expenses for designated Privately Purchased Medical Items (PPMI) or new technologies.
  - b. Supported items: prostheses, home use items (such as wheelchairs and home use ventilators), costly medical procedures not available in public hospitals.
  - c. The Fund is administered by the Hospital Authority (HA), which oversees all 40+ public hospitals.
  - d. Eligibility: the patient must be HA patient and fulfill all of the following requirements.
    - i. Clinical indication: the item must be supported by a medical doctor or an allied health professional in the HA.
    - ii. Requirement on financial condition: Applicants must pass a household-based financial assessment conducted by Medical Social Worker.

e. Income of The Fund:

- 95% direct Government grants and reimbursements from SWD for recipients of the Comprehensive Social Security Assistance (CSSA)
- 5% from donation

f. Special funding injection for the Fund:

- In June 2012, the Government injected HK\$10 billion
- Of the HK\$10 billion, \$4 billion vested immediately in the Fund, and \$6 billion HA for placement with the Exchange Fund for 6 years.
- As at 2017, the \$6 billion placement in Exchange Fund became \$7.22 billion.
- The balance of government grants placed with Samaritan Fund at end of March 2017 is HK\$10.88 billion.

Table 1. Examples of spending (HK\$) of the Fund on selected items for the years ending 31 March 2016 and 2017

Item	2016 (HK\$)	2017 (HK\$)
Wheelchairs	229,575	164,690
Home use equipment and appliances (e.g. wheelchair, replacement of external speech processor for patients done with cochlear implant)	1,188,209	705,355
Appliances for prosthetic and orthotic services, physiotherapy and occupational therapy services (e.g. prosthesis)	545,857	440,407



- B. Support Programme for Employees with Disabilities (SPED)
- a. SWD provides a one-off subsidy for procurement of assistive devices and/or workplace modifications. SPED is to facilitate employees with disabilities in discharging their duties at the workplace and to enhance their work efficiency.
  - b. Level of Subsidy: Up to HK\$20,000 for each employee with disabilities. A grant up to \$40,000 may be considered for which the price of a single item of assistive device and its essential accessories being applied for has exceeded \$20,000.
  - c. Scope of Support: Assistive devices and workplace modifications which cater for the special needs of employees with disabilities. E.g. accessories or adaptive equipment for computer, optical magnifying device, hearing and assistive devices, Braille products, handrails.
  - d. Eligibility: Employers of persons with disabilities nominated and referred by accredited government departments and NGOs.

## C. Support for independent living of tetraplegics: joint efforts with NGOs

### a. SWD:

- i. Cash support include: disability allowance, CSSA and medical waiver.
- ii. Care and Attention Allowance under the CSSA Scheme supports these patients to hire personal carers. The Enhanced Care and Attention Allowance enables eligible tetraplegic patients to include a monthly special addition on top of the monthly expenditure required for hiring a carer.
- iii. Community support include day care, respite care, integrated home care, community nurse service, community occupational therapy service, counseling, training for carers and home modification service.

### b. An NGO, The Yan Chai Hospital Board, sets up the Yan Chai Tetraplegic Fund to provide assistance to relieve the financial difficulties of these patients.



- c. The SK Yee Medical Fund, a private Fund managed by Government, has allocated a total of \$1 million to "The Hong Kong Neuro-muscular Disease Association" to subsidize purchases of medical appliances and consumable items. Medical specialists of the Hospital Authority recommend the needed rehabilitation appliances/ aids and advice on home modifications to facilitate tetraplegics to live in the community. The Housing Authority would be responsible for works of modifications.

#### D. SWD administered, The Jockey Club IT Scheme for People with Visual Impairment (PVI)

- a. Support NGOs providing services / schooling to PVI and tertiary institutions to acquire advanced Chinese screen readers, Braille displays and accessories to facilitate PVI's surfing in the information world on Internet; and to subsidize individual PVI who requires the usage of high-performance IT for the purpose of studies or employment, but has genuine financial difficulty in purchase of the aids.
- b. Items and amounts supported :
  - i. High-performance Chinese screen reader: up to HK\$9,800 for both organizations and individuals
  - ii. Braille display: up to HK\$36,000 for organizations; and for individuals 90% of the cost or not more than HK\$32,400, whichever the less
  - iii. Accessories/ portable devices: maximum HK\$66,000 for organizations, and for individuals not more than HK\$49,600

E. Innovation and Fund for Better Living, Innovation and Technology Bureau, HKSAR Government (FBL)

- a. Objective: funding innovation and technology ("I&T") projects which will make people's daily living more convenient, comfortable and safer, or address the needs of specific community groups. The FBL with HK\$500 million to operate for 5 years with effect from 2017-18.
- b. Projects must fulfil the following requirements:
- ☐ Benefit the public or specific groups, and should be in line with government policies
  - ☐ Involve the innovative application of technologies
  - ☐ Should not be profit-making during the funding period
  - ☐ Project deliverable should be rolled out within 12 months and the Project should run for at least two consecutive years after roll-out
  - ☐ Project themes include daily living, education, environment, health, safety, transport, etc. which can benefit the community
  - ☐ Project deliverable should be in form of mobile app, product, device, equipment, tool, service, software, etc, or any other form with valid justifications
  - ☐ Should primarily be developed within Hong Kong

- c. FBL Grant: An approved project will receive a grant up to 90% of the total eligible costs of the project or HK\$5 million, whichever is the less
- d. Eligible Applicants include:
- ☐ Non-governmental organisations receiving subvention from the SWD
  - ☐ Public bodies
  - ☐ Professional bodies
  - ☐ Trade associations
- e. Assessment Mechanism and Criteria
- Benefits brought to the public or specific community group(s) (30%)
  - Innovation and technology content (20%)
  - Feasibility and sustainability (20%)
  - Financial considerations (15%)
  - Technical and management capability of the Applicant (15%)

f. Examples of approved projects:

i. Development of Intelligent Target Aiming Device for Visually Impaired Archery

- to encourage and facilitate visually impaired persons in participation of sports, To enhance the competitiveness of Hong Kong athletes with visual impairment (HK\$1,167 million)

ii. VR rehab Generation (HK\$3.35 million)

- Through the use of VR technologies, to strengthen the training and treatment effectiveness for elders and people with disabilities so as to enrich their life experience despite their physical limitations
- To promote social inclusion that raise the public awareness in understanding the needs of the people with disabilities and sustain the development of VR programmes in rehabilitation services

F. Logistics and Supply Chain MultiTech R&D Centre (LSCM):

- Founded in 2006 with funding from the Innovation and Technology Fund of the HKSAR Government.
- Mission is to foster the development of core competencies in logistics and supply chain related technologies and to facilitate the adoption of these technologies by industries in Hong Kong and Mainland China. The LSCM R&D programmes are demand-driven.

Examples of research projects in the field of rehabilitation and disability:

i. RFID Blind Cane Navigation System:

- With RFID technology and audio navigation, the system provides guidance to the visually impaired and leads them to their destination by the shortest route
- With the aid of the Blind Community Cloud Platform, the visually impaired can obtain the latest updates on the map and enjoy a seamless navigation across different regions.
- The system was awarded the Gold Medal with Congratulations of the Jury at the 44th Geneva International Exhibition of Inventions in 2016.
- Barrier Free Access (HK) Limited, a wholly-owned subsidiary of The Hong Kong Society for the Blind, has also started the relevant business to offer full-set of service backing the RFID Blind Cane Navigation System.
- It is expected that the technology can be applied in places like shopping centres, public housing estates and streets in the near future.



## ii. Anti-wandering Vest for Elderly with Dementia:

- This detection system is developed specially for the elderly homes or centres to detect the positions of the elderly with dementia.
- Elderly wearing the vests with built-in RFID tags will be detected automatically in case the elderly wander away from the homes or centres without permission
- Staff of the homes or centres will register the information of each vest using a RFID reader so that the position of the elderly can be detected by the system
- Antennas are installed at the main exits in order to detect the RFID signals from the RFID tagged vest
- This technology provides more effective control comparing to manual observation and can release the pressure of the caretakers in looking after the elderly
- In addition, the user interface of the system is simple and easy to use therefore it does not require much training for the staff

## G. The Gerontech and Innovation Expo cum Summit (GIES) in June 2017, November 2018; and beyond

### i. Background

- Organised by the HKSAR Government, the Hong Kong Council of Social Service and the Hong Kong Science and Technology Parks Corporation to provide a platform for all relevant parties, from experts, industry leaders and policymakers in relevant disciplines to the elderly persons, people with disabilities, and their families and carers to share their views and get stimulated
- The aim in enhancing public awareness on technology and innovation for the elderly, and people with disabilities, and encouraging the development and adoption of relevant solutions in Hong Kong.
- An important factor is effectiveness in facilitating advancements in relevant areas including assistive technology, inclusive design, etc. for enabling independent living and social participation in good health, comfort and safety.

## ii. GIES Objectives

- To showcase local and foreign innovation products and ideas;
- To increase awareness of general public and the demand for technological intervention related to the elderly, and people with disabilities;
- To engage stakeholders to meet, to have dialogues and to be stimulated; and
- To initiate the momentum for a multi-stakeholders, multi-disciplinary platform for continuous collaboration.
- Realizing more tailor-made and purpose-built products and services to be available for the Hong Kong older adults, people with disabilities in near future, so as to support living with dignity, independence and choice

## iii. Covered topics

- Ideas for Ageing in Place: The Smart, Livable Home, Quality Caregiving, Quality Food
- Ideas for Mobility and Social Inclusion: Enabling Smart Mobility, Successful Integration, Technology Enabled Inclusion,
- Ideas for Digital Innovation: Transforming to a Digital Culture, Integrated Health and Social Care Services, Cloud and Internet of Things

H. Civil servant with disabilities supported by Central government funds, and also available to government departments, in purchase of assistive device and modification to work settings

## 2. Initiatives and measures from Hong Kong Polytechnic University, Jockey Club Rehabilitation Engineering Centre (REC) :

- A unique service arm of the Department of Biomedical Engineering of Hong Kong Polytechnic University, which facilitate to integrate education, research, service, and knowledge transfer in the area of rehabilitation engineering and smart aging technology.
- REC was established in 1987 with a donation from HK Jockey Club, aiming to provide services and conduct development in the area of assistive technology and rehabilitation engineering.
- REC is a platform to host Jockey Club Rehabilitation Engineering Clinic, and Jockey Club Smart Aging Hub.

## A. Jockey Club Rehabilitation Engineering Clinic

- Draws on the University's immense expertise and advanced facilities
- Provides holistic clinical services for clients who need prostheses, orthoses (including custom-made orthopaedic insoles), functional electrical stimulation and robotic rehabilitation training, assistive technologies (including special seating and mobility, computer access, augmentative and alternative communication) and spinal deformity assessment
- Provides specialist consultation and information resources to the community
- Offers education and training for biomedical engineering students
- The professional team include Prosthetist-Orthotists and Biomedical / Rehabilitation Engineers. The P&O are trained in the use of modern procedures, high-tech, space age components and clinical outcomes. The Biomedical / Rehabilitation Engineers are experienced in applying the latest rehabilitation engineering technology to solve a wide range of problems facing individuals with disability.



## B. Jockey Club Smart Aging Hub

- provides a bridge between different stakeholders for achieving smart aging, including elderly people, their family members and caregivers, service providers, technology developers, students and youngers, industries, government officers, etc.
- A day center and virtual library about available smart aging technologies and its latest development are established, and real demonstration sites to be established in 6 NGOs.

## C. An academic course Assistive Technologies

- involving real-world clients through special schools, NGOs
- Students in groups to tackle a specific need of the client, utilize their learned skills to analyse the situation and propose a solution.
- The students will construct the assistive device for the user. Examples include designing a device to facilitate daily activities; accessing computer; playing a musical instrument, etc. The outcome of these projects can also include conceptual designs of a complex device or a working prototype.

### 3. Initiatives and measures from Kowloon Hospital of Hospital Authority

The Prosthetic and Orthotic Department of Kowloon Hospital of Hospital Authority provides prosthetic limbs, orthoses and rehabilitation assistive devices to patients, and rehabilitation assistive devices. Its scope of services includes:

- A. Specialist clinical assessment
- B. Design and provide appropriate orthoses and rehabilitation aids
- C. Design and manufacture special seating and assistive device
- D. Provide training in the use of prosthetic limbs, orthoses
- E. Provide regular follow up visits, assessment and technical support
- F. Develop prosthetic limbs, orthoses services, for example: artificial eyes, computer aided design and myoelectric prosthetic limbs.

4. Initiatives and measures from selected NGOs: T ASD of EMV, SAHK, HKFHY, RAHK

A. Technical Aids Services to the Disabled (T ASD) of Association for Engineering and Medical Volunteer Services (EMV):

- i. T ASD works on the design and fabrication of technical devices, inexpensive and suit local needs. Services include:
  - a. design and fabricate new devices,
  - b. to adapt and modify commercial aides,
  - c. to advice on prescription and design of technical aides,
  - d. to provide repair and maintenance service on electronic speech aids, electric wheelchairs and aids related to daily living,
  - e. to provide public education through exhibition, sharing sessions, delivery of talks.
- ii. T ASD staff team: OT, electronic technician, mechanic and carpenters
- iii. Guided by a committee of volunteers: engineers, OTs, health care professionals, designer, and technicians.
- iv. T ASD client groups include all kinds of disabled persons. The aids are useful for cognitive training, motor training, speech training, and communication, activities of daily living, education, employment and mobility.

- v. TASD content catalogue include:
  - Activities of daily living: feeding, toileting, bathing, household equipment
  - Support and positioning aids: tables, chairs
  - Communications: communication aids, switches and environmental control, computer aids,
  - Assessment and training: physical devices, cognitive devices
  
- vi. Electric Wheelchair Repair Clinic and Resources Centre:
  - noting increasing demand for electric wheelchair support services
  - supported by private Funds and fee charging
  - provides one-stop service for electric wheelchair users which includes assessment, training, consultation, repair and maintenance, rental and other support services.
  - By 2017, the service has served over 10,000 users.

vii. Specific support services include:

- On loan electric wheelchair during the repair period
- On site checking to tackle the worn out problems of the electric wheelchair and other accessories to ensure safe operation and performance efficiency.
- Various devices can be installed to facilitate the users to control the electric wheelchair smoothly and to enhance the functioning and mobility scope of the wheelchair.
- Rental service for term rental of electric wheelchair or to try out the use of electric wheelchair before purchase.
- Provide on-site driving skills training such as new electric wheelchair users.
- to reduce the maintenance costs, agencies and individual are encouraged to donate old electric wheelchairs for collection of used parts for future maintenance.

viii. Loan: providing loans to PWD over 18 years old for purchase of assistive device, up to HK\$50,000, repayable in four years

B. SAHK (Spastics Association of Hong Kong) with a focus to develop and provide services for persons with neurological impairment.

i. The Jockey Club Rehabilitation Seating Service provides a one-stop service in adaptive seating, and wheelchair and mobility aids repair service.

ii. Adaptive Seating

a. Scope of Service:

- fabricate customized, adjustable Adaptive Seating System to meet the special needs of individuals.
- Each System consists of 2 major components : the mobility bas and the mould cushions & accessories
- Each accessory such as pelvic stabilizer, back support, lateral trunk support, headrest, lap tray, footrest, and all kinds of positioning straps, allows minor adjustment for the comfort, change of clothing and physical changes of the clients.



b. Characteristics of Adaptive Seating System:

- ✓ It is custom made to meet special needs
- ✓ It facilitates good sitting posture
- ✓ It helps to prevent and correct deformities
- ✓ It distributes pressure evenly, release pressure point(s) and lessens nursing demand on pressure sores
- ✓ It mitigates some abnormal reflexes e.g. extensor thrust
- ✓ It helps to prevent and reduce back pain
- ✓ It is easily dis-assembled and assembled, making conveyance easier;
- ✓ It is water repellent, durable, smooth and easy to clean
- ✓ It is more comfortable and safer to use when compares with ordinary chairs and wheelchairs
- ✓ It facilities feeding, changing of clothes and mobility, thus decreasing the workload for the carer

c. Target Clientele:

- Clients with tendency to develop physical deformity, contracture or constant sitting position
- long term use of wheelchair, cannot sit securely, cannot maintain a good sitting posture, prone to develop back pain
- development of pressure point due to long term sitting position which resulted in skin lesions and bed sores.

iii. Wheelchair and Walking Aids Repair Service

C. Support from self help organizations with membership among the largest in Hong Kong

4.3.1 Hong Kong Federation of Handicapped Youth: grants available to HK residents with disabilities over 18 years old and not CSSA recipients, for purchase of assistive device

4.3.2 Rehabilitation Alliance Hong Kong: A Fund is created by a donation from FH Rehabilitation Products Manufacturing Co. Ltd., to provide grants to PWD to purchase assistive device, up to HK\$5,000.

## 5. The initiatives of a private company, and an illustration of close partnership between NGOs and the private sector

- FH Rehabilitation Products Manufacturing Co. Ltd. is the first wheelchair and rehabilitation products manufacturing company in Hong Kong
- Owns a manufacturing complex of area 14,000 sq. m. in Mainland, China
- Has a professional team responsible for product development, design, merchandising of raw materials and production.
- Has an independent Quality Assurance Department and laboratory to ensure the quality in compliance with international standard.
- Its top-brand wheelchair is a smart living product which adopted pioneer technology and design from Germany. The product meets ISO7176 standard, which is a safe, durable and high quality wheelchair.
- FH has diversified product line: manual / power wheelchair, walking aids as well as other rehabilitation products.

Mr. Alan Tam, the founder and Director of the Company, is a close partner of NGOs. His background:

- ✓ Fellow of the Professional Validation Council of Hong Kong Industries
- ✓ Director of exhibition department and Executive Committee in The Hong Kong Metals Manufacturers Association
- ✓ Vice-chairman of Hong Kong Federation of Senior Citizen Industries
- ✓ Chairperson of Hope Alliance
- ✓ Member of the Vocational Training Board for People with Disabilities under Vocational Training Council
- ✓ Adviser of service stream programs in Shine Skills Centre
- ✓ Honorary Adviser of Rehabilitation Alliance Hong Kong etc.
- ✓ Supports social enterprises on retail sales of assistive devices

## Conclusion

The Hong Kong evolving network of tripartite partnership support in developing and providing assistive devices and related support measures to people with disabilities is:

- taking a solid shape
- progressing strategically to meet changing needs and fast moving technological developments in the field of disability and rehabilitation

THANK YOU

## About the author:

Joseph Kwok, RSW, PhD, BBS, JP received Kazuo Itoga Memorial Award by the Shiga Prefecture Government of Japan in 2006, “Promoter” of the Asian and Pacific Decade, 2013-2022, awarded by UN ESCAP in 2012. He was a former Chairman of Rehabilitation Advisory Committee of Hong Kong SAR Government; and a former member of Equal Opportunities Commission. He is currently Chairman of Fu Hong Society, Accessible IT Development Association, Vice Chairman of Hong Kong Joint Council for Persons with Disabilities, and Hong Kong Society for Rehabilitation. He is a member of Rehabilitation International Executive Committee, and Vice Chair of its Social Commission; and Vice Chairman of Asia Pacific Disability Forum.