Innovations for the Rural Poor

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It is a privilege and honor for me to be speaking at this important Forum.   I would like to thank Omi Sensei and the STS Forum team who have made this event a place where we can meet the global leaders.

I would like to address how innovation affects society in a developing country, where people in the rural areas are living in poverty. I will take cases of the poor rural communities on the border areas with Cambodia, Laos and Myanmar.

I would not emphasize how innovation helps the top and the middle income groups to become wealthier, but would rather ask what kind of innovation helps people at the bottom of the pyramid, whose conditions are often neglected.

All good technologies would be of great value if their benefits reach the bottom of the society.   In this context, *social innovations* can help fill the gap. The concept covers mechanisms such as open source, online learning, social enterprise, crowd-funding and microcredits.

Our experience about innovations for the rural poor and the underprivileged in Thailand combines high technology as solution and social innovation as the means of delivery.

On the technology side, the National Science and Technology Development Agency, or NSTDA, is the institute which handles mainstream research with its network. Some of our research which become products are: the new varieties of rice which are flood tolerance or salinity resistance; the vaccine candidates for dengue hemorrhagic fever; and assistive technology for people with disabilities. These are great works for industrial commercialization. How can we connect all these technologies to the society and made them affordable?

NSTDA was given a privilege to serve Her Royal Highness Princess Maha Chakri Sirindhorn. The princess travels all over the country on her mission to eradicate poverty and to ensure children's education. We were challenged by her questions, "If children are hungry, can they learn anything?" and "how hard is it to get a job if a young person does not finish school?" But later, we got two more: "can we use ICT to solve the severe shortage of teachers?" and "how can we help persons with disabilities to live more independently and to equally engaged in the society?"

Let us look at the first challenge on food and nutrition of kids in rural schools. Villagers who are parents of these kids are poor and live quite far from school. School teachers sometimes asked some parents to work for school lunch program cooking lunch using donated ingredients. The approach was found not sustainable. Why don't we teach children to grow their own food supply as a first lesson at school?

Her Royal Highness introduced innovative action research programs aiming at merging local wisdom and scientific knowledge to improve food and nutrition practices. This has led to substantial improvements in children development.

Through this process, school children are taught skills in agriculture, covering plants, chicken and fish. Their field works become their regular lunch.

For secondary-level classes, the field works become science projects, as pupils make observations and keep records as part of their lessons. The same project is also for practicing science, mathematics and botanical drawing.   Furthermore, Her Royal Highness has empowered local communities to adopt improved agricultural and animal husbandry practices. This enables them to provide proper, high quality food for pregnant and lactating women and children, thus ensuring household food security and the nutritional well-being of everyone in the family.

Once the hunger game was over, we solve the second problem of education. The rural and remote areas lack just about everything. The problem became worse since some villagers are not Thai, and they are not qualified to receive education subsidy from the government. Many teachers were employed by Her Royal Highness's philanthropist program.

We solved the shortage of teachers problem by using an e-Learning platform developed by NSTDA. The system, known as eDLTV (or eLearning for Distance Learning Television), is web-based system containing online interactive educational contents for grade 1 to 12 in all subjects required in the standard curriculum. The eDLTV website is now ranked among top five most visited on-line education in Thailand.   eDLTV is also available in a stand-alone disk drive for schools without Internet.

The initiative of Her Royal Highness also leads to my third subject of discussion: assistive technology for people with disabilities. In this field, our research laboratory has developed many solutions to make the technology accessible by local firms.   These solutions include high quality digital hearing aids, artificial legs and knees, and braille notebook. Crowd-funding model and social enterprise approach are solutions to make these technology accessible by the people with disabilities.

My last example is the prison inmate program. Her Royal Highness initiated a computer education program to train the inmates in basic computer skills, ranging from a short course up to a bachelor's degree. The inmates who have gone through the program have earned money from services using their IT skills while in jail. Many got good jobs after they were released.

Ladies and Gentlemen,

Her Royal Highness has demonstrated that many social innovation initiatives can be realised with science and technology. The programs aim to build up the capacities of people which is crucial for sustainability.

Her Royal Highness represented His Majesty the King in receiving the Franklin D. Roosevelt International Disabilities Rights Award in 2001.

I am optimistic that science, technology and innovation will bring some lights into the rural poor of our society. Will make dreams of the rural poor and the disadvantaged to our society for a better life become true.

Thank you for your attention.