e-Services for the Last Mile People of the Developing Countries

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　　　　　　　　　　（発展途上国のラストマイルの人々のための電子サービス）

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論 文 内 容 の 要 旨

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e-Services can be defined as services which are delivered through ICT, especially World Wide Web. e-Money, e-Commerce, e-Business, information bulletined board, email, different e-Government services, etc. are the examples of popular e-Services. e-Service allows the service provider to serve more people with greater efficiency using fewer resources.

Availability of electricity, internet, and electronic payment system are essential preconditions for accessing and consuming e-Services. Considering the present growth in infrastructural capacities of the governments of the developing countries, we can assume that the minimum infrastructural support for accessing e-Services cannot be attained in near future. Therefore, we intended to develop solutions so that the existing constraints can be successfully overcome to make e-Service available to the last mile people.

We conducted several surveys in Bangladesh to collect requirements of the last mile people. We analyzed the requirements carefully and developed the solutions to fulfill the their exact need. We emphasized on the socioeconomic and human factors more while finding the solutions.

We developed an innovative business model to optimize solar electricity generation, usage, and distribution, so that, the last mile people can consume electricity at a price close to existing alternative. We developed e-money and e-commerce services utilizing microfinance institutions' network. We also developed delay tolerant network based solution to transport bulk data from remote areas to the cities and vice versa over public transportation network. We also developed an e-Learning system for illiterate people. In this regard an innovative user interface especially suitable for the illiterate people was introduced.

Finally we proposed a shared e-Service access facility: VIC (Village ICT-access Center). The center would deliver different e-services and other ICT based service with local demand like, document composing, document copying, and so on. It would also distribute electricity among the villagers. The shared facility would distribute the overhead cost among all services. Adding more and more services would increase the financial self-sustainability of the center. In a pilot implementation we found the center to be almost financial self-sustainable with e-Money, solar electricity distribution service.

Problems related to ICT penetration to the last mile people are multifaceted. Therefore we wanted to address those holistically. The technological aspects of electric power solution are not within the scope of this research. Therefor, we solved this problem from economic point of view. Similarly illiteracy, a social problem, is addressed with a technological solution. We hope to implement the research finding in Bangladesh soon. Feedback from the real users would allow us to improve the solution further.