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Masaru Furukawa

University of Toyama, frukawa@eco.u-toyama.ac.jp

Shutaro Takashima

University of Toyama, shutaro@med.u-toyama.ac.jp

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3. CHALLENGES AND POSSIBILITIES FOR THE HOUSEHOLD MEDICINE LEASE SYSTEM VIEWED IN LIGHT OF CRM -- HML-BASED EVERYDAY SELF-MEDICATION IN UBIQUITOUS NETWORK SOCIETY

Masaru Furukawa
University of Toyama, Toyama
frukawa@eco.u-toyama.ac.jp

Shutaro Takashima
University of Toyama, Toyama
shutaro@med.u-toyama.ac.jp

Abstract

Household medicine lease (HML) industry originated way back in the Edo period (17C-19C), when it was promoted by the local fiefdom government to revitalize the economy. Accumulations of wealth, acquired thereafter from everywhere outside the region, have culminated in the formation of the present-day industrial cluster in Toyama, the largest in the whole area facing the Sea of Japan. Today an adaptation of the quasi-CRM (Customer Relationship Management) business model of the HML system has proved to be a success in Mongolia. This fact seems to offer us some clues for dealing with those problems that healthcare and medical services in Japan and elsewhere are riddled with.

In this paper, focusing on the common critical success factors (CSFs) behind the success of our prototype HML system and its recent successful application in Mongolia, we will analyze these factors from the perspective of CRM. We will then clarify the following: 1) the usefulness of the business model for ensuring primary healthcare for people in developing countries, 2) the usefulness in our ubiquitous network society of applying ICT to the HML system, 3) what contributions the use of the system can make toward improving the quality of our everyday healthcare and medical services in our prominently aging society, and we will also suggest 4) the importance of elevating ‘individual self-medication’ to ‘community-based self-medication.’

Key Words

Household medicine lease (HML), CRM (Customer Relationship Management), self-medication, primary health care (PHC), Use First Pay Later, ICT (information and communication technology)

1.Introduction

Household medicine lease (HML) industry, known nationwide as ‘Toyama-HML’, originated way back in the Edo period (17C-19C), when it was promoted by the local fiefdom government to revitalize the economy. Accumulations of wealth, acquired thereafter from everywhere outside the region, have culminated in the formation of the present-day industrial cluster in Toyama, the largest in the whole area facing the Sea of Japan. Today an adaptation of the quasi-CRM (Customer Relationship Management) business model of the HML system has proved to be a success in Mongolia when the originator HML industry of ours is threatened with obsolescence due to its failure to adjust to sea changes that have taken place in its business environment, particularly in the nature of

its customers. The Mongolian success seems to offer us some clues for dealing with those problems that health care and medical services in Japan are riddled with.

In this paper, focusing on the common Critical Success Factors (CSFs) underlying the success of our prototype HML system and its successful application in Mongolia, we will analyze these factors from the perspective of CRM. We will then discuss what contributions the use of the system can make toward improving the quality of our everyday health care and medical services in our prominently aging and ubiquitous network society.

2. HML in the Edo period and its high performance with CRM

2.1 Objective of CRM

The business model of Toyama-HML reminds us of the concept of today's CRM. What CRM aims at is to maximize customer value (*i.e.* the sales to an individual customer and the profits they yield) and this requires the enhancement of 'customer loyalty' to your brand, a core concept of CRM strategy. CRM's basic tactics are to promote adequate communication with individual customers with a view to the development and maintenance of good interrelationships. This presupposes that firmly cemented relationships with your customers will help strengthen their attachment for your brand. However, every customer has their own taste and/or sense of value. Unless you obtain accurate information on these personal differences, you cannot provide them with goods that will really meet their specific needs, but then you cannot expect to obtain such information unless you have already developed good enough relationships with them.

2.2 Mechanism of CRM

It is a commonly accepted view that retention of the existing customers costs only one fifth as much as acquisition of new customers. Whether this theory is valid or not, the effort to take good care of the existing customers and prevent them from drifting away is crucial from the viewpoint of sales efficiency and profitability. This is why CRM has captured business people's interest. After all, whatever good relationships CRM tries to manage are with the existing customers. In general, an information system embodying CRM consists of the following three components (Evans 1999).

- *Inbound*: the mechanism for in-house communication constructed to pass the task of 'customer-response' on to the section concerned with a view to the speedy processing of customers' orders and/or complaints
- *Segmentation*: the process of pigeonholing the existing customers into separate segments based on various criteria, such as their lifelong value for the company, contact frequency, period proceeds, etc.
- *Outbound*: the mechanism constructed to contact these segmented customers at the right time through the right channel (*i.e.* face-to-face, shop, call center, e-mail, direct mail, etc.)

In order to maintain good relationships with its customers, a company must solidify the infrastructure, on which to manage in an integrated way all kinds of customer information straddling various channels. Of no less importance, in this connection, is to provide a mechanism for analysis of customer information in addition to low cost information channels such as call centers, the Internet and so on. This is why CRM is usually referred to as being inseparably related to ICT (Information & Communication Technology), an indispensable means of supporting CRM processes.

2.3 Toyama Fiefdom's strategy for revitalization of the local economy

Here let us go back to the early Edo period. In those days, with a nearly bankrupt economy based on rice consumption alone, Toyama Fiefdom found itself in dire financial difficulties. Under these circumstances, Masatoshi Maeda, the then lord of the fiefdom, ventured to adopt a radical strategy of liberalizing business outside the fiefdom borders so as to enable the acquisition of wealth from outside his fiefdom. His obvious objective was to put the fiefdom finances on a sound footing and the specific strategy was a breakaway from an economy based on rice consumption to one based on commodity distribution. More specifically, the first thing he targeted for this purpose was the expansion of HML business on a national basis. The following were what he did to foster the newly envisaged HML industry (Furukawa 2006).

- **Quality control:** To make a success of his innovative strategy, it was imperative to ensure that there were sufficient supplies of medicines, *i.e.* to bring up sufficient numbers of manufacturers to produce them. With this in view, he then decided to disclose the processes of medicine production to those interested in this line of business. However, the increase of those who produced or sold medicines could give rise to fake medicines or imitations of poor quality. To address the problem, Toyama Fiefdom created a semi-governmental organ named the 'Han-gon-tan Office,' so named after a representative local drug. Its role was to supervise local drug manufacturers on quality control and give them information and guidance on improvement of their production processes and products. History shows that it was only by surviving the strict quality control that Han-gon-tan Office imposed on the whole cycle of material purchases, production processes and lease sales that Toyama-HML business in due time came to enjoy a reputation for reliability and gain a strong competitive edge over other brands.
- **Education:** Engaged as they were in a line of business affecting human life out there on the ground, traveling distributors would obviously play the most critical practical role in the expansion of the HML business system. It was this perception that motivated the fiefdom to enact various measures to raise HML distributors' qualifications, including the introduction of the licensing system and the enhancement of the educational system for prospective distributors. Education in private schools in Toyama Fiefdom was not limited to acquisition of literacy. It was also characterized by its emphasis on mastery of abacus use, a basic skill for an HML distributor and by its further emphasis on the importance of courtesy and repayment of favors owed to others, behavioral qualities regarded as indispensable for an HML distributor. These schools produced a large number of HML distributors who had been taught the customer-first business principle (*i.e.* customer orientation), who had not only mastered advanced knowledge of drug-related affairs but also had acquired a high degree of general knowledge and sophistication.
- **Accumulations of wealth acquired from outside the fiefdom borders:** The business model of Toyama-HML consisted in distribution of HML kits nationwide from the base town of Toyama, not in transportation of goods from producing centers to a big consumer town, as was the case with some other business models. The 'Han-gon-tan Office' granted individual HML distributors credit and security by issuing them with a license to pass through check points in other fiefdoms (*i.e.* an ID) and by giving them the convenience of getting currencies from other fiefdoms exchanged. Moreover, the tax incentives that the fiefdom offered them led to a sudden increase of their kind and to the prosperity of the whole HML industry. The prosperity of the HML industry in turn led to the advancement of other industries. The consequent improvement in the living standard of people necessarily resulted in a dramatic increase in the tax revenue of the fiefdom.

- **Expansion of Marketing Reach:** In those days, marine transportation played a leading role in goods distribution, and kelp, precious food, from the northernmost part of Japan (Ezo = Hokkaido) was transported via the Sea of Japan route, to the commercial metropolis (Osaka), and/or to the southernmost regions (Satsuma fiefdom and Ryukyu) and even on to China. Toyama was one of the main ports of call along this marine route, and making use of this route, Toyama-HML, starting from Ezo and Satsuma, expanded their marketing reach to every corner of the country.

These measures and the resultant upward changes in the local economy combined to make it possible for the fiefdom to solidify its governance and for the local business community to build up in Toyama accumulations of wealth acquired from all over Japan. In fact, this wealth provided the basis on which a modern industrial cluster (Porter 2006) has been built in Toyama.

2.4 Business model of Toyama-HML

Here let us define the business model of Toyama-HML. Since Japan is an island country spanning a long distance lengthwise, climates, dialects, cultures, customs and, accordingly, people's needs differ widely in different regions. Based on the perceived regional differences, Toyama-HML segmented the country into several zones, and sub-segmented these zones into smaller areas for individual HML distributors to be in charge of. We might say that this strategy was a pioneer case of 'market segmentation' (in our CRM terminology) with a view to ultimately meeting individual customers' needs.

Before his departure for his 'beat', a Toyama-HML distributor prepared medicines most likely to meet the needs of the families in his charge, and on arrival at his destination he visited each of his customers to leave with them a kit filled with an assortment of medicines with the understanding that those which they might use when the need arose were to be paid for on his next visit. The next time he visited, he received payment for the medicines that had been used and then he refilled the kit. This system was referred to with the catchphrase "Use First Pay Later" and worked effectively to give customers a feeling of security and to gain their confidence.

One thing an HML distributor never failed to carry with him was his register book. In this book he wrote down detailed information on his customers, *e.g.* the kinds of medicines in their kits, the amount they had consumed, their medical histories, etc. All this information was used for practical purposes on his subsequent visits. In short, this book served as a 'database' on his customers. As a rule, the kinds of information entered in an HML distributor's register book were collected during informal chats with his individual customers. There were documented cases of mail sent by customers ordering medicines they had run short of. That is, face-to-face interaction and mail were chief media of communication through which information on customers was obtained, and the direction of information flow was one that can be accounted for by the CRM concept of the 'inbound'.

On the other hand, since a register book provided detailed information on family members' physical constitutions and/or their medical histories, an HML distributor, with his next visit in mind, could ask a highly trained pharmacist to prepare special medicines meeting their specific needs using quality-guaranteed materials obtainable from fiefdom-designated drug wholesalers. This form of information use was one that can be accounted for by the CRM concept of the 'outbound' (Furukawa 2006).

2.5 Customer relationships

Here let us sketch why and how Toyama-HML distributors were able to acquire and cultivate good relationships with their customers as they admirably did. Toyama-HML distributors typically were

very communicative and provided his customers with information of all sorts that he had obtained back in their home province and on their sales routes. Their topics ranged widely from farming technology to features of local culture and nature. Their accounts of these things captivated the interest of information-hungry people of the day. In fact, these communication opportunities were what these customers looked forward to as eagerly as they did to the contents of the kits. It was good rapports thus fostered between them that made it possible for Toyama-HML to earn and maintain high customer loyalty.

Today practical use of the Internet is expected to solve the trade-off between ‘reach’ (market expansion) and ‘richness’ (sufficiency of information available on individual customers’ needs and/or wants). However, long ago in the Edo period, Toyama-HML, with its distinctive mode of business, successfully made ‘reach’ and ‘richness’ compatible and spared itself this trade-off problem.

3. Successful application of the HML business model in Mongolia

Toyama-HML business, which thrived in the Edo period, is now deplorably threatened with obsolescence. Many ideas have been proposed to resuscitate it, but there is little hope that they will turn out effective. This is largely because few Japanese citizens these days find it necessary to depend on the HML system for their healthcare.

On the other hand, our HML system has recently restarted to attract some attention from outside our country. What triggered this new development was an international conference in Ulan Bator sponsored by WHO, where the main theme was a successful application of our system in the country. Here, we will give a brief account of the background to the introduction of our system into Mongol and the objectives of the HML-centered aid project and of the Ulan Bator conference. We will then go on to clarify the common CSFs affecting our prototype HML system and its recent application in Mongolia. Thereupon, we will explore the further potential of this system in the context of today’s progress in ICT and in information transfer (Furukawa 2007).

3.1 The background to the aid project in Mongolia and its objectives

Mongolia, which had transformed its system from socialism to market economy in 1992, was suffering from a financial crisis due obviously to the failure of its industry to catch up with its radical system change. Its hitherto free medical service, which had depended on the Soviet Union for financial support, not only had to be changed to a pay service, but also dropped both in quality and in quantity. Nomads, among others, could hardly afford expensive medical care, not only because they earned their living in areas remote from medical facilities but also because their incomes were unstable. Problems with medical service were far more tangibly felt than in the 70s especially in the lack of medical personnel and/or medical equipment.

●	Popularization of Mongolian traditional medicine as alternative and/or supplementary to Western medicine for primary healthcare purposes
●	Helping establish a system that would make proper healthcare available to poor citizens who could not afford expensive Western medicine, thereby also reducing the likelihood of untreated illnesses depriving them of their livelihood
●	Starting model medical and/or pharmaceutical businesses that the Mongolia government or other support organizations could take over
●	Fostering Mongolian traditional pharmaceutical industry by promoting the use of its products through the HML scheme

Table 1: The objectives of HML system implementation

These circumstances prompted the Mongolian Government in 2001 to ask the Nippon Foundation for medical assistance. The Foundation's response was to offer a comprehensive medical aid project in which the HML model was to be applied to the production and sales of two-millennium-old traditional Mongolian medicines. By utilizing these local medical resources, they had in view the construction of a system which was meant to play the role of complementary medicine for Western medicine and which could also provide effective and safe healthcare at reasonable costs that every Mongolian citizen could well afford. Table 1 shows the objectives of this project in more concrete terms (Nippon Foundation 2006).

An NGO organized with full support of the Nippon Foundation has played a central role in the implementation of the Mongolian HML system and has produced a brilliantly successful result we will see below.

3.2 The international conference on traditional medicine

The Mongolian HML system, in which medicine kits are left with nomadic families, always moving with their herds of livestock, is working well as an effective means of protecting their lives. This Mongolian success was reported on at the WHO-sponsored international conference held in August, 2007, whose main theme was the popularization of traditional medicine. After a guided inspection tour of the effectively working HML processes, there was discussion of the effectiveness of the HML system, its applicability, the need for technical education in traditional medicine, quality control on traditional medicines, etc. Besides, an invited speaker from the Pharmaceutical Affairs Office of Toyama local government spoke on the history of Toyama HML business. The participants showed a particular interest in its customer-first business principle (Nippon Foundation 2007).

3.3 CSFs affecting the HML systems

Table 2 shows the critical success factors (CSFs) affecting our prototype HML system and the Mongolian model. This table tells us that the two models have a set of CSFs in common: the government's support, availability of initial investment, distributors' regular visits, their expertise and consumers' positive attitudes. This leads us to presume that the traditional HML system of Toyama is not a wholly out-of-date one but one that has a high likelihood of functioning if introduced into an environment with potential CSFs.

	Edo-period prototype in Japan	Mongolian model
System	"Use First Pay Later" System, Register book	
Promoter	Toyama Fiefdom and semi-governmental 'Han-gon-tan Office'	Government and NGO "Vansemberuu Mongolia"
Initial investment	Local capitalists	The Nippon Foundation (the initial cost for HML kits)
Health care standard	Low-level: no clinic or chemist's shop in customers' neighborhood	
Visit	Distributors' periodical visits	Medical professionals' regular rounds
HML distributor	Professionally educated on drug-related affairs from childhood	Doctors and health nurses (medical profession)
Customer	Instructed on health and medicines by HML distributors	Spread of self-medication ("Protect your life by yourself")

Table 2: CSFs affecting the HML systems

3.4 Emergency healthcare process in the light of information transfer

Apart from these CSFs, let us consider other potential factors for the system's further development in light of information transfer mechanism made possible by today's highly advanced ICT.

Figure 1 shows the process of utilizing an HML kit in the light of information transfer mechanism. Let us suppose you have a sudden health problem (*i.e.* an injury and/or an attack of disease). If your problem is slight, you can medicate yourself instead of seeing a doctor. Essential information in this

case is on the efficacy and the dosage of a drug. Here it is assumed that this kind of information has already been given to you the consumer (*i.e.* inhabitant, nomad, etc.) by a doctor on his regular round. If your problem is serious, you will ask for first aid and then contact a doctor. If you can use telecommunication, you can tell him what your condition is, and then he will be able to decide whether to give you a prescription, to visit you or to have you transported to him. This was how in Mongolia the combination of an HML kit and telecommunication helped to reduce not only doctors' house calls but also the frequency of their unavailability.

In line with its national policy, the Mongolian government introduced foreign capital to have a mobile phone network built by Mobicom Corp. This mobile phone network with about 900 thousand subscribers (out of the whole population of 2.6 million) is now effectively working as a means of telecommunication.

The following accounts of the mobile phone service that appeared in the Mongolian Embassy's PR pamphlet 'Mongolian Short Letter' (2005/6/30) reveal the importance of information and communication technology (ICT), typified by mobile phones.

- The Mongolian pioneer provider of the mobile phone service is Mobicom Corp, the first firm in this country financed by foreign capital, in this case, by two Japanese firms' joint investment.
- Nomadic people can now communicate with mobile phones even when pasturing cattle.
- Regional Medical Centers have had communication equipment donated in connection with 'grass roots' grant-in-aid by the Japanese Government.

By helping the HML system work successfully, the telecommunication network, comprised primarily of mobile phones, is contributing effectively toward the accomplishment of the objective of 'saving the lives of many inhabitants of out-of-the-way areas' (Furukawa 2007).

4. Potential markets for the HML system

The above analyses not only have clarified the common CSFs behind our Edo period HML and its Mongolian application, but also seem to have offered us some clues about the possibility of ICT use contributing to efficient provision of healthcare.

Let us suppose we introduce the HML system into developing countries heavily burdened with their healthcare problems. We will now use the findings of our present analyses and other data that we have available in order to consider appropriate approaches to its application in these countries. Then in light of CRM, we will provide an overview of possible strategies and/or environments that would enable our own endangered HML system to survive in forthcoming ubiquitous network society.

4.1 Primary healthcare in developing countries

The Declaration of Alma-Ata was adopted at the International Conference on Primary Health Care, Almaty (formerly Alma-Ata), presently in Kazakhstan, 6-12 September 1978. It expressed the need for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world. It was the first international declaration underlining the importance of primary health care. The primary health care approach has since been accepted by member countries of WHO as the key to achieving the goal of "Health for All."

On 24-27 August 2007, in Ulan Bator, the International Conference on Primary Health Care met to share information and ideas on the effectiveness of the HML system. Participants of this conference were mainly Health Ministers and/or officials of Health Ministries' Division of Traditional Medicine

from fourteen developing countries.

Let us here elucidate the mechanism underlying the success of the Mongolian HML system. For analysis, we will utilize the official reports distributed at the Ulan Bator Conference and will reinforce what they reveal with a review of Toyama fiefdom's HML-related measures and the common CSFs behind our prototype HML system and the Mongolian model. Besides, we will again pay attention to the special role that ICT (i.e. mobile phone-based telecommunication) has been playing in this model:

- Whenever occasion demands, you have close at hand an HML kit (*i.e.* medicine chest) and a handbook on dosage.
- If HML kits were obtainable free of charge in connection with ODA, they might be exchanged for some foods, defeating the original purpose. But HML kits are left with customers under a lease contract of 'Use First, Pay Later'; bills for deferred payment are collectable. The collected money then will be reinvested in the production of traditional medicines (a main feature of the MHL system). This is how the HML-based primary healthcare system works as a cyclic business process.
- The use of ICT for communication between patients and doctors reduces the necessity of their movement and reinforces the effectiveness of the HML system (*e.g.* a 50% reduction of the number of doctors' house calls, a 30% increase of the lifesaving ratio).

This system mechanism is similar in several important respects to the policies and measures Toyama fiefdom adopted in the Edo period, as shown below:

- Development of goods that customers needed and/or wanted (*e.g.* household lease medicines)
- Contrivance of sales methods (*e.g.* HML vs. sales by doctors)
- Sales where marketable (*e.g.* whole Mongolia, wherever nomads live vs. cross-border business)
- Development of local industry (*e.g.* production and sales of traditional medicines)
- Effective use of ICT (*i.e.* popularization of mobile phones, which has contributed to enhancing the effectiveness of the HML system by releasing doctors from the constraints of time and space (vs. expansion of marketing reach and enhancement of the richness of information on individual customers through cross-border market expansion and segmentation)

The above analysis convinces us that an HML system can be an effective means of realizing primary healthcare in many developing countries. Moreover, for those who attempt to make the system take root in their regions, the quasi-CRM business model of Toyama-HML will provide valuable marketing expertise to draw on. As in the Edo period Toyama fiefdom, those concerned with the implementation of the system should pay particular attention to the following:

- Professional education in traditional medicine
- Quality control on the production of traditional medicines
- Ensuring that seed money is provided for a "Use First Pay Later" form of business and that bills for deferred payment are collected

4.2 Everyday healthcare in Ubiquitous Network Society

Let us now shift our attention back to Japan, one of the highly advanced countries in respect of ICT, and reconsider the present and future potential effectiveness of the HML system for our society.

"WHITE PAPER Health, Labor and Welfare in Japan (2007)" gives us the following account of the present state of Japan with respect to healthcare:

Our health and medical care is faced with many challenges to tackle. It is pointed out that Japan's medical service is conspicuous among advanced nations for long average hospitalization and shortages of doctors in obstetrics and pediatrics and shortages of doctors in general in remote rural areas. As for national health insurance, its gravest problem is ever increasing medical costs, mainly attributable to the ageing of the population. In respect of health promotion, a major threat to people's health is lifestyle-related diseases, accounting for 60% of their deaths (Chapter 1).

These problems require us to put great emphasis on preventive medicine, promotion of medical service guaranteeing people's lifelong freedom from care, stabilization of the foundation of the health insurance system with a view to enabling it to function more effectively (Chapter 4) (MHLW 2007).

The white paper's analysis does not indicate the need for a healthcare system focused on traditional medicine, but it does suggest that self-medication and everyday healthcare need to be made much of in today's Japan just as they were in the Edo period and as they now are in Mongolia. For this purpose, traditional medicine is not necessarily needed, but presumably a medicine chest (*i.e.* HML kit) we have on hand helps a great deal for everyday healthcare.

In this connection, let us look at "WHITE PAPER Information and Communications in Japan (2008)." It envisages policies and measures that it regards as necessary to realize the Ubiquitous Network Society, in which "anytime, anywhere, anything and anybody" can easily connect to the Internet. Here the key concepts spotlighted are 'telecommunication' and 'community' (MIAC 2008).

Japan's Ministry of Public Management, Home Affairs, Posts and Telecommunications has started a study project for realizing the 'vision of a new healthcare system in the Ubiquitous Network Society.'

"The report of the study on the practical use of ICT in the field of healthcare (MIAC, 2006)" illustrates the vision of ICT utilization in the form of an image of a whole system of healthcare divided into four subsystems: 'Inside medical facilities,' 'Occasion of a disaster or an emergency,' 'Regional cooperation in healthcare' and 'Daily life environment,' and it presents a roadmap for realizing the vision. In this vision, 'Regional cooperation in healthcare' represents the cooperation of hospitals, drug stores, home nursing stations and homes; and 'Daily life environment' represents hospital-monitored home care, everyday healthcare and preventive medicine.

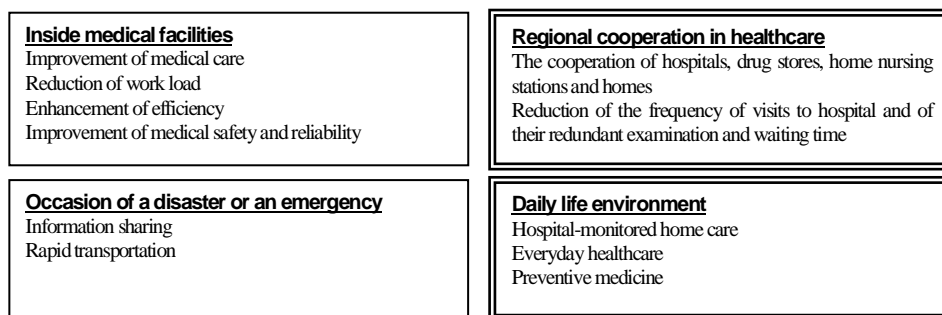


Figure 2: The vision of a new healthcare system in the Ubiquitous Network Society

In Mongol ICT has contributed to the success of the HML system. The combination of ICT and the HML system is expected to be effective in realizing the 'vision of a new healthcare system in the Ubiquitous Network Society' and particularly in spreading self-medication for people's everyday health care.

The success of the Mongolian implementation of the HML system owes a great deal to ICT utilization. The combination of ICT and the HML system can be counted on to continue to play an important role in realizing the 'vision of a new healthcare system in the Ubiquitous Network Society' and particularly in popularizing self-medication for people's everyday healthcare.

Table 3 shows the benefits that ICT has been providing and/or promises to provide for primary and every day healthcare.

	HML system in the Edo period, Japan	HML system in Mongolia	Modern CRM system	Ubiquitous Network Society
Communication systems	Face to face, Mail	Face to face, Mail, Cellular phone	Face to face, Mail, Telephone, Cellular phone, Web site, Mobile computer	Mobile computer
		Cellular station	Server and Client computer, Internet	RFID (Radio Frequency IDentification) tag, Wireless station, Internet
Accessible points	Where the customer lived	Near a Cellular station	Near a point of access to the Internet	Anywhere (near where there is an RFID tag installed)
Accessible time	When convenient for the customer	When convenient for the customer	Any time	Any time
Information Base	Lists of customers in sales ledgers	Lists of customers in sales ledgers	Database on customers in the Server computer	Databases on customers in the Ubiquitous Network (virtual computer network)
Benefits for Primary and Everyday Healthcare of ICT utilization	Supply of Household Medicine, Spread of self-medication, "One to One marketing" by means of "human wave tactics"	Freedom from the constraints of time and space --Reduction of doctors' work load --Increase in the Lifesaving rate	Rich databases on individual customers' Healthcare, created through CRM's "One to One marketing" strategy	Anytime, anywhere the Internet is accessible --Medical doctors can access their medical databases. --People can access the databases on their individual healthcare (<i>i.e.</i> medical records, etc.).

Table 3: Benefits for primary and everyday healthcare of ICT utilization

Figure 3 is meant to show schematically the idea that the past successes in HML-based self-medication and/or healthcare provide us with clues for addressing healthcare problems facing today's society, and, therefore, that there is a likelihood that the system can not only be directly introduced into developing countries, but it might well be adapted to the needs of present day Japan through the utilization of ICT, and that this new ICT-assisted HML model in its turn will prove useful in tackling problems developing countries have long been burdened with.

4.3 Potential of the HML system in relation to community-based self-medication

The paradigm of Community-based rehabilitation (CBR) was developed in the 1980s, with a view to giving people with disabilities access to rehabilitation in their own communities with predominant use of local resources. Mendis (2000) proposed the idea of making CBR more effective by inducing people with disabilities to abandon their exclusive dependency on medical care and acquire an orientation toward Independent Living (IL) with minimally necessary help from their community.

Japan's rapidly aging society has been troubled by the shortage of medical doctors, the shortage of nursing facilities for aged people and many other problems, and there is concern that these problems will become more and more serious. This state of affairs calls for shifting of the paradigm of healthcare away from utter dependency on institutional medical care to self-medication, preferably community-backed and hospital-monitored with the use of ICT. Let us call it 'Community-Based Self-Medication (CBSM)' after the fashion of CBR. CBSM essentially means that people in a local community will be encouraged to help each other in medicating themselves.

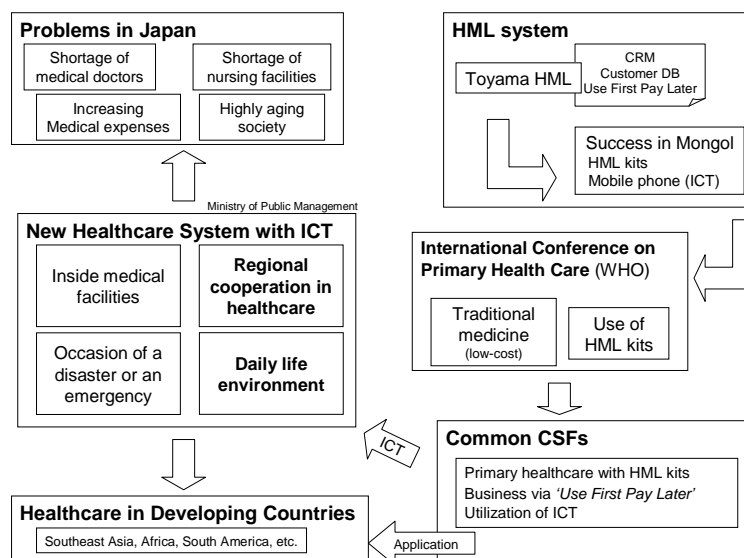


Figure 3: The scheme for addressing healthcare problems facing today's society

Healthcare Type	Problems and New Orientations
Dependency on Medical Care	Shortage of medical doctors. Shortage of nursing facilities for aged people Increasing medical expenses.
Individual Self-Medication	"Protect your life by yourself". Utilization of HML kits, handbooks and ICT
Community-Based Self-Medication (CBSM)	Independent Living (IL) with minimally necessary help from your community People are encouraged to help each other in medicating themselves Utilization of HML kits, handbooks and ICT

Table 4: Paradigms of Healthcare

Developing 'individual self-medication' into 'Community-Based Self-Medication (CBSM)' is a significant idea particularly for a rapidly aging society like ours. CBSM may well serve the purpose of managing in an integrated way 'Regional cooperation' and 'Daily life environment' components of a medical system that the above government-sponsored study envisages. In plain words, CBSM has a likelihood of securing people an independent and care-free daily life, backed by their immediate communities.

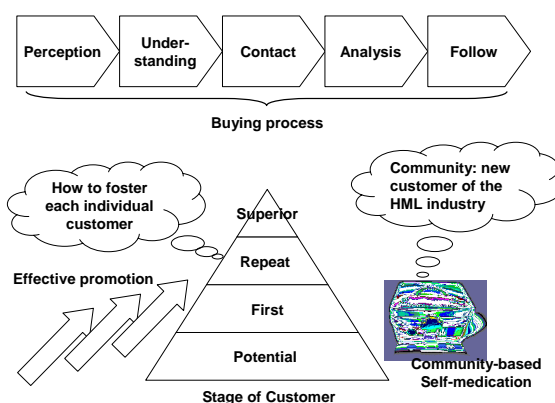


Figure 4: The challenge of constructing and fostering a customer community

By segmenting customers into the four stages of ‘potential’, ‘first time’, ‘repeat’ and ‘superior,’ business CRM sets store on fostering customers and elevating them on to the upper stage and, to cultivate customers’ loyalty, it makes individually appropriate promotional efforts. This suggests that, to ensure the sustainability of healthcare and/or medical systems in a rapidly aging society, the challenge for us is, in a manner of speaking, to foster ‘customer communities’ toward practicing CBSM. CBSM-oriented communities may well be counted on as highly promising markets for the HML system.

5. Conclusion

In this paper, focusing on the common CSFs involving our prototype HML system and its successful application in Mongolia, we have clarified the following: 1) the usefulness of the business model for ensuring primary healthcare for people in developing countries, 2) the usefulness of applying ICT to the enhancement of the HML system, 3) what contributions the application of the system can make toward improving the quality of our everyday healthcare and medical services in our prominently aging society, and we have also suggested 4) the importance of elevating ‘individual self-medication’ to ‘community-based self-medication.’

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