A New Perspective:

Leading The Healthcare System of Hong Kong into Two-Sided Market

(A respond to the HealthCare Reform Consultation Document)

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1. Introduction

This paper takes stock of the current healthcare paradigm in Hong Kong and aims to provide a framework for the Hong Kong government (the "Government") to conceptualize a new healthcare system using a two-sided markets model.

1.1. Background

The Government recently announced, on 28 February 2008, that it plans to allocate HK$ 50 billion as start-up capital for healthcare reforms.[1] Describing it as "the area that presents the greatest challenge to the stability of long-term public finances in the city" due to an aging population, John Tsang (the Financial Secretary of Hong Kong) indicated that it was time to take measures to ease the pressure on public finances.

As it is not able to increase healthcare expenditure indefinitely, the Government hoped that supplementary financial arrangements can be implemented to ensure the availability of adequate resources to cope with the community's demands in the future.

1.2. Existing Healthcare Model in Hong Kong

In order to better understand the challenges faced by the Government, it is helpful to briefly examine the existing healthcare model in Hong Kong.

Hong Kong's sizeable population of 6.9 million is served by a comprehensive range of both public and private medical facilities and healthcare services.

In the public sector, substantial governmental subsidies for health and medical services make these services readily accessible to the general public. The private sector, on the other hand, provides greater choice, less waiting time and more personal attention and comfort, but charges significantly higher fees.

Where both public and private sectors offer similar services, a patient's choice between the two is often determined by how much she is willing to pay or how long she is prepared to wait for those services.

1.3. Deficiencies of the Existing Healthcare Model

According to Global Insight, the Government's public health spending stood at US$ 4.1 billion in FY 2005/06, representing 12.6% of total public spending. This is projected to increase to 17% of the Government's recurrent expenditure by 2012.

[1] *Healthcare reforms gets $50b boost*, The Standard, 28 February 2008

The Hospital Authority, meanwhile, continues to operate at a deficit, which soared to HK $1.2 billion in 2006, and this lies behind most of the ongoing need for cost containment reform.[2]

Hospital Authority Three-Year Financials (HK$ mil.)				
	2006	**2005**	**2004**	**2003**
Income				
Government subvention (recurrent and capital)	28,019	28,417	30,039	29,997
Medical fee income (net of waivers)	1,628	1,386	1,243	849
Non-medical fee income	310	285	294	321
Designated donations	83	98	209	100
Capital donations	90	81	73	78
Expenditure				
Staff costs	23,044	23,412	25,170	24,798
Medical supplies and equipment	3,133	2,937	2,797	2,600
Other operating expenses (including depreciation)	5,184	4,256	4,265	4,147
Deficit for the Year				
	1,231	338	374	220

Source: Hospital Authority 2006

A discussion paper published by the Government's Health and Medical Development Advisory Committee ("HMDA Committee") indicates that medical costs in Hong Kong have in the past increased faster than the overall growth rate of the economy and that this trend is likely to continue.[3]

It is therefore clear than an increase in the Government's spending on public healthcare alone will not be sufficient. It is necessary not only to spend more, but also to spend more efficiently and effectively.

In this regard, the HMDA Committee further believes that Hong Kong's existing healthcare system provides too narrow a financial base with insufficient interface between the public and private sectors.

Likewise, a report prepared by the School of Public Health of Harvard University suggests that unless there is a restructuring of the way that public healthcare services are financed, and a new mechanism to enable the private healthcare sector to provide more affordable services to the general public, the quality of healthcare

[2] *Hong Kong: Policy and Expenditure*, Global Insight at www.globalinsight.com, 2008

[3] *Health Care Financing: Previous Public Discussions from 1993 to 2004*, The Health and Medical Development Advisory Committee of Hong Kong (2005) at www.fhb.gov.hk/hmdac/english/dis_papers/dis_papers_hcfppd.html

services in Hong Kong is likely to deteriorate and the financial sustainability of the Hong Kong healthcare system will become questionable.[4]

In light of the above, it is crucial for the Government to consider feasible alternatives to meet the needs of the community and future challenges while maintaining the paramount policy of ensuring that no one would be denied adequate medical treatment through lack of means.

1.4. Inherited Setbacks of the present system

The fundamental reason behind the two-sided market is to let the free market force to drive up the efficiency and promote the generic growth of the whole health care system in Hong Kong. The structural deficiency of the present system is that it is basically a monopoly system. Although there are few privately run hospitals, no matter in size and resources, there is no way it will match with its public counter part and thus it create a natural dominant position in the health care market. Also, praise to the high standard and low cost of public hospital, it is the natural choice of the majority for medical care. The private hospitals can thus only serve the high end market. Besides, for the good reason of protecting public health and the selfish motives of the medical industry, the supply of medical personnel is well managed. Under the present system, the medical personnel are following the pay scale of civil servants. Even though the Hospital Authority has already done a good job in cutting costs, the labour costs, which is a major cost in public health care, will still remain high in the future. It is extremely difficult to cut this costs under the present system. For medical inflation issue, it is difficult to control as most of the medical supplies and pharmaceutical products are from high cost developed countries. Unless there are great technological advancement in China, the cost will not come down in the near future. However if we can embrace the Chinese medicine as a supplement treatments especially in preventive and follow-up area, we believe the cost will be slim down substantially. Chinese medicine has long history of practice and experiences. The medicine is largely base on natural herbs. It bypass the high R&D cost in the West and makes the treatment cost definitely lower even in a long run.

The other major deficiency of the present system is that it puts up too much attention on the low-income and under-privileged group. The payment structure is clearly reflected it. Only 5% recovered cost is too low and unreasonable. It is clearly responded to fit the affordability of this group and to satisfy the demand of the pressure groups. However on the other hand this group of people is the high user of public care services. It creates an imbalance of resource allocation and get

[4] *Improving Hong Kong's Health Care System – Why and for Whom?*, School of Public Health of Harvard University, 1999, at www.fhb.gov.hk/en/press_and_publications/consultation/HCS.HTM

complains from the middle class. Besides because of the low rate, it will certainly attract abuses and misuse of the public services. We all agree that in an affluent society the majority don't mind to share part of their fortunes with under-privileged or less fortune one. But there is a limit. When it comes to the time of limited resource, the priority should go for majority. Poor is unfortunate but it should not transform to be a privilege. Unless there is a shift of policy focus, it is difficult to convince the public, especially the middle class, to chip in the supplementary program in any form.

Due to its monopoly and supply sided nature, the present public care system is slow to respond to the demands of the public needs. The situation has already improved through the set up of Hospital Authority(HA) but HA is still a big public organization. It still lacks the sense of urgency to fill the market demand and level of efficiency as private enterprises. It is no way the system will reach its optimal by self improvement unless a competition environment is introduced.

The government definitely seeks a solution for these problems. As discussed above, this paper seeks to provide a possible healthcare framework using a two-sided markets analysis. But at first, let's see what happen in the private healthcare market.

2. Private Healthcare Market

2.1. Externalities

A two-sided market is the one where:

i) There are two distinct groups of consumers served by the market.

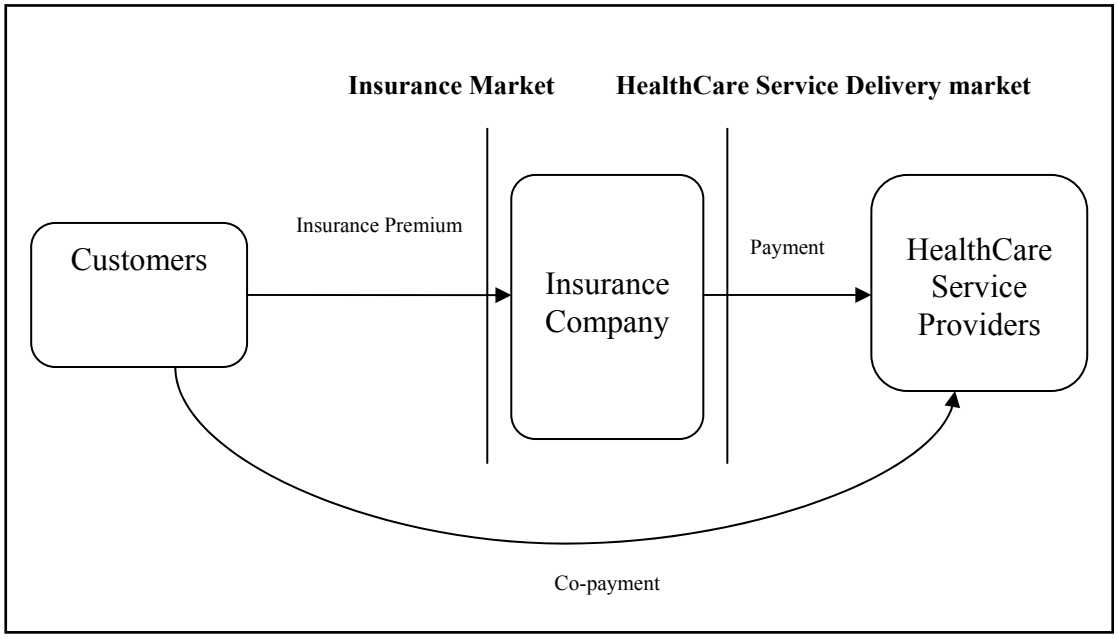
ii) Some parts of the value to the consumers comes its capacity to connect the two sides of the market.

iii) Each group would like to provide side benefits to the other group for joining the market, but is prevented from doing so by social, legal, informational or contractual barriers.

In private sector, it is hard for the customers who wish to seek better medical service to distinguish experienced doctors from other mediocre providers. They need insurance companies to help them. At the same time, insurance companies need to control their claim costs. They will look for a group of reputable doctors to help them achieving this goal. In other words, the healthcare market provides side benefits (or externalities) to the insurance market. On the other hand, the insurance market can also provide great demands for healthcare services.

A two-sided market may, in a simplistic sense, be understood as a platform that brings together both sides and enables each side to create value to each other that would not be available without the co-ordination or existence of that platform. Health insurance market is a prime example of a two-sided market where the health insurance companies serves as a platform owner linking the customers on one side and the healthcare providers on the other side. With the help of this platform, the insurance companies can offer a list of high grade medical providers to its customers and keeps its claim costs to minimum. The delivery side will also made available of a large number of ready customers with low acquiring cost.

2.2. Two sided market in the private healthcare insurance sector



The network externalities are further explained by the above diagram. Initially there are two distinct groups of agents: the customers and health care service providers. Each group is seeking each other to realize some value but the transactions costs impede them from getting together. By introducing the healthcare insurance platform, it creates value by reducing these barriers and their associated transaction costs, and thus secures the profit opportunities. . Nevertheless it must get both groups on the platform simultaneously and in the right proportions. This feature has strong implications for pricing.

2.3. The nature of the private insurance market

In the insurance market, the cost of insurance plan is very difficult to estimate. It is affected by so many risk factors, like inflation, claim losses deterioration, the insured's age, career, earning, historical record of illness, etc. As a result, the insurance premium is not fixed and is reviewed annually. Without government's involvement, the market force, the invisible hand, plays an important role on allocating resources and determining the premium. Any individual customer can freely choose any healthcare insurance plan which fits his/her own needs. As a result of competition, the healthcare insurance industry is often closed to break-even and recorded modest profit every year. It reflects the market force is so efficiently on determining insurance price.

In the healthcare market, the quality and the efficiency of healthcare service is improved through competition. Usually the private hospitals provide much better medical services than their public counterparts with less cost. Therefore an individual with healthcare plan will not only enjoy better services, but also pay less on his medical bills. Generally insurance programs allow large proportion of medical costs to be covered under the healthcare insurance plan. At the same time, a preventive measure to counter abuse is build in the system too. Individual customers are required to pay a small proportion of the costs as a Co-payment in order to prevent moral hazard.

Customer side provides group externalities to the delivery market. In other words, as more customers join a healthcare insurance plan, more values will be created to the delivery side. Therefore, in the healthcare insurance market customers are always subsidized by the healthcare service providers. That is why the customers who join the insurance plan usually can enjoy a discount on medical expense. In return it will then make the insurance plan even more attractive. Besides the insurance company also offers cheaper premium rate to healthcare insurance holders if they buy other insurance products and thus brings the within-group network effects to the companies.

3. Proposed Change

Inspired by the experience of the private insurance market, we want to introduce the two-sided model to the new government health care system. We have found that the private medical insurance has worked well under the two-sided market and we don't see any reason why it cannot work for public health care. However, in order to make the public health care system work, a proper framework and right business strategies must be applied.

The public health care system in Hong Kong has often been praised for its high quality but low rate services. It is also relatively equitable and easy to access. Basically no one is denied to essential health care due to lack of financial means. This enviable achievement is largely built on the government's commitment through direct funding on public hospitals. Consequently it has put a heavy financial burden on the public finance and its long-term financial sustainability is highly questionable. Outcries for change are loud among general public and government officials.

To leverage the lesson from private market, we propose to replace the current direct subsidize model by mandatory personal insurance plan which is required for all citizen in Hong Kong. Like the third party car insurance, it is mandatory and up to the individual's needs and capability to find his own suitable plan. This plan will be either paid by himself or by his employer. In order to avoid the risk-selection or anti-selection, the government will monitor the insurance market through ceiling of the community rated premium and approval of qualified insurers. Anybody without a proper plan will be fined and bears the medical bill out of his own pocket. For the poor and low income group, the government will set up a public fund for basic medical needs. By applying the "money follows patients" principal, people will pick his own plan among the qualify agents and the public fund will pay the bill. Under this arrangement, it will avoid any misused or abuse of the medical facilities, otherwise additional deductible or premium will be tap on his bill. Anybody who is not in the system will be required to pay the medical bill out of his own pocket. At the same time, high income group may pay higher premium if they require better services. Individual with better health condition will pay less on his premium, and thus will encourage the general public to watch for his own health or to cut off any hazardous habits. That will benefit the society and ultimate will cut the public medical cost.

3.1. Pricing Structure

On the other hand, the government will free the price control which is currently imposed on the public health system or to some extend, will privatize some public hospitals. Then, all the medical bills will be charged according to market level. Thus it will help the public hospitals to cover their operation cost and also push them to join the market force. In other word, the pricing structure of the health care system is completely revolutionized. In stead of subsidize the delivery side, the government will now subsidizes the customer side. Under the new arrangement, the delivery side will now more focus on its cost and efficiency. Once joining the market, they will aware of the price sensitivity and distribution rate and its effects on the revenue. The cross network effect on its operation cost also becomes more significant and thus, the service has to be improved in order to attract more customers. Under this model, we feel that the efficiency and the level of services will greatly improved and the cost will be substantially reduced.

3.2. Competitive Strategies

It is not guarantee that the two sided model will run automatically or efficiently once it sets up. It also depends on the entry strategies of the platform owners in order to make the network flourish. To achieve sustainable growth, a network sponsor in a two-sided market must bring both sides of the market on board simultaneously or at least bring a large number of participants from one side. Therefore, institution with pre-established relationships with large numbers of agents on either or both sides of the market can leverage on such relationships and more easily convert them to initial participants of the network. According to our findings, there is only 12.5% of Hong Kong health care expenditure[5] come from private insurance. It does not have a solid base to start with. So, under our model, the government has to put up a mandatory framework as a common platform in order to bring all the user on board. At the same time it will transform the public health care services into private operations. Thus the government, as sponsor, will utilize its pre-established relationships with large numbers of agents from both sides, i.e. the general public and public hospitals, to set a solid foundation for the two sided market to grow.

[5] Healthcare Reform Consultation Document, Pg.78

Within that mandatory framework, there are many platforms, where the insurance companies are the platform owners, and they are competitive with each others. For each platform one side is the general public (customer) and other side is the health care services providers (delivery). On the customer side, it is single homing since there is not many individual will carry more than one medical plan. However its single homing nature will not affect its competition as customer may switch plan easily if cost is too high or service is not satisfactory. In fact its degree of single homing is low. On the delivery side, it is multi-homing as health care providers often contract with more than one insurance plan. This setting will build up the competitive environments on both sides and fulfill the second proposition: A potential platform sponsor should not enter a single-homing two-sided market unless it has strong relationship resources or superior product. The requirements for a successful entry into multi-homing two sided markets are much less restrictive than the single-homing markets. Therefore the government must adapt a strategy to make the two-sided market less single-homing, which in this case, the government has utilized the public fund to attract more insurance players to participate and at the same time to lessen the price control to boast up the participant of the delivery side.

The government role does not only serves as a sponsor in our two-sided model, it also serves as a health care provider through the channel of public hospitals. As a participant, the government may increase the value of the platform by putting the public fund and the public hospitals network on the table first, and thus create a positive feedback cycle and attract more business participants as well. It is necessary to do so as it will allow the system to overcome the "chicken-and-egg situation". However there is another subtle and important issue arises when a platform sponsor also becomes a participant: how to balance between its role as a network sponsor and as a business participant. On one hand, as sponsor, it needs to cooperate and encourage other business participant in the network to foster growth. On the other hand, as a business participant, it competes against other participants. Therefore, the government should refrain from competing too hard against other business participants in order to encourage them to stay. This is exactly the dilemma we are facing today. The quality of our public health care is so good and the price is so low that it scares away many private competitors. Only a few new private hospitals have joined the market in the past decade and all of them only serve the upper health care market. Therefore, measures such as privatization of some pubic hospitals will be put in place to avoid the same mistake.

Another role that platform sponsor may take is the distributor. In fact the government is currently the major distributor of its public health care network. As in Sun & Tse's (2006) finding, the existence of a large number of distributors may increase the diffusion speed which, through the cross-group network effect, will reinforce its sustain growth and on a much faster pace. As the major distributor of its own, the public health care is always fall behind the demands and needs of the general public. A two-sided platform sponsor should allow and encourage third party distributors and should avoid being an exclusive distributor of its own network. The new model will take a smarter approach. The government will just provide the framework and the fund and let the public decides their own insurance program. In other word, it will utilize the insurance companies' network to distribute its services. On the supply side, the health care providers will distribute their service through joining different insurance program which in turn will manage a better response to the patients' needs.

Finally, the platform sponsor should emphasize on fostering the growth of the ecosystem by providing proper incentives to attract more business participants and distributors. The legal framework and public fund will certainly put sufficient incentives to attract the attentions of some international and local players. Under our research, the projected medical insurance market will expand up to 30 billion dollars annually. Moreover, the players in the field should also apply the same approach on ecosystem rather focuses on winning the competition by better services along.

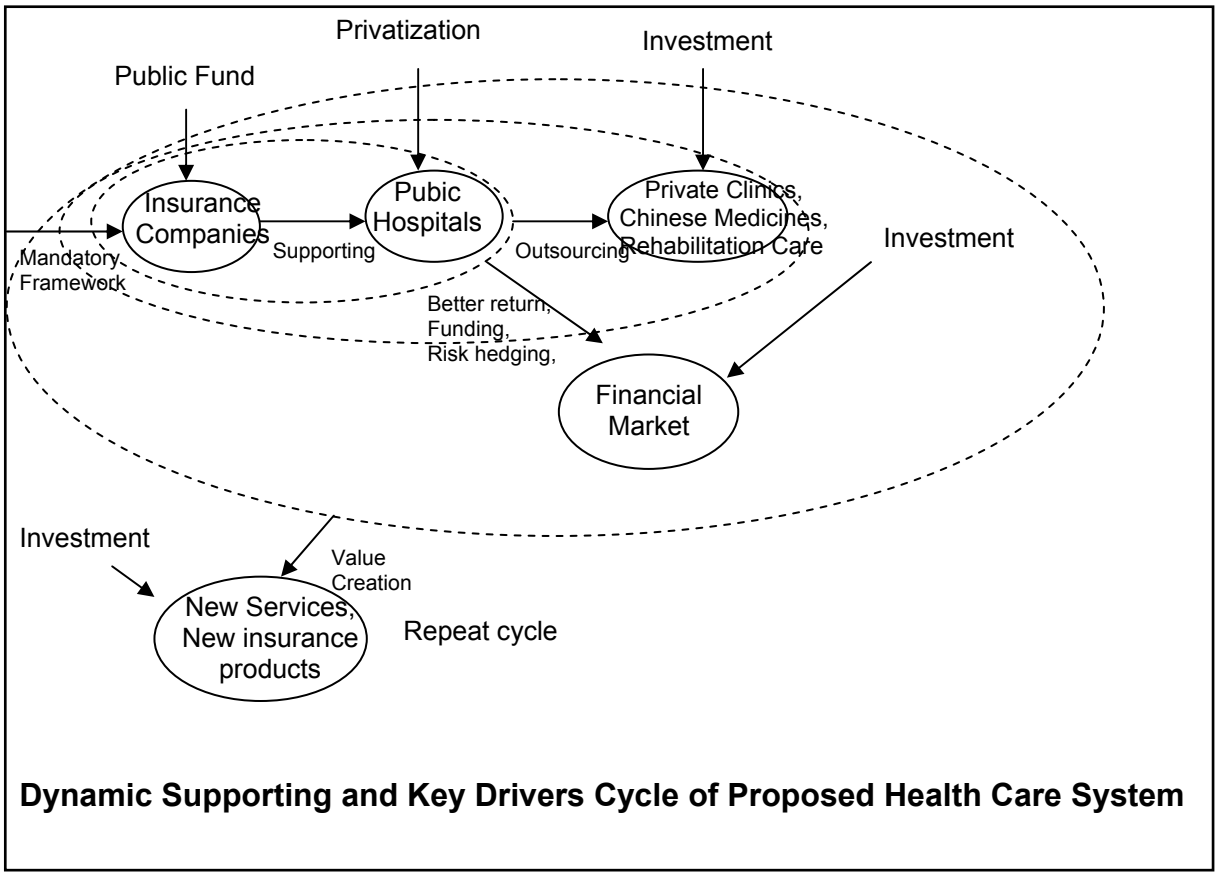
3.3. Value Creation

It is important for the platform owner/sponsor to know not only how to create a new market, but also know how to sustain its perpetual growth through value creation. We will use the grabber-holder framework to explain this dynamic. The grabber is some sort of cool factor that appeal to human's emotion and imagination to participate in promoting the vision, while holder is the supporting elements that enables people to realize the benefit. In our model, the grabber is to build a low cost and high efficient public health care system in Hong Kong. The holder is the mandatory framework and the public fund for the low income group. The collection of users, health services providers, insurance companies (distributors) and their internal assets, as well as the infrastructure developed that provide the holder for a vision is referred as the ecosystem. Very often, in a new business dynamics, there is no holder in the beginning and thus it is the strong grabber

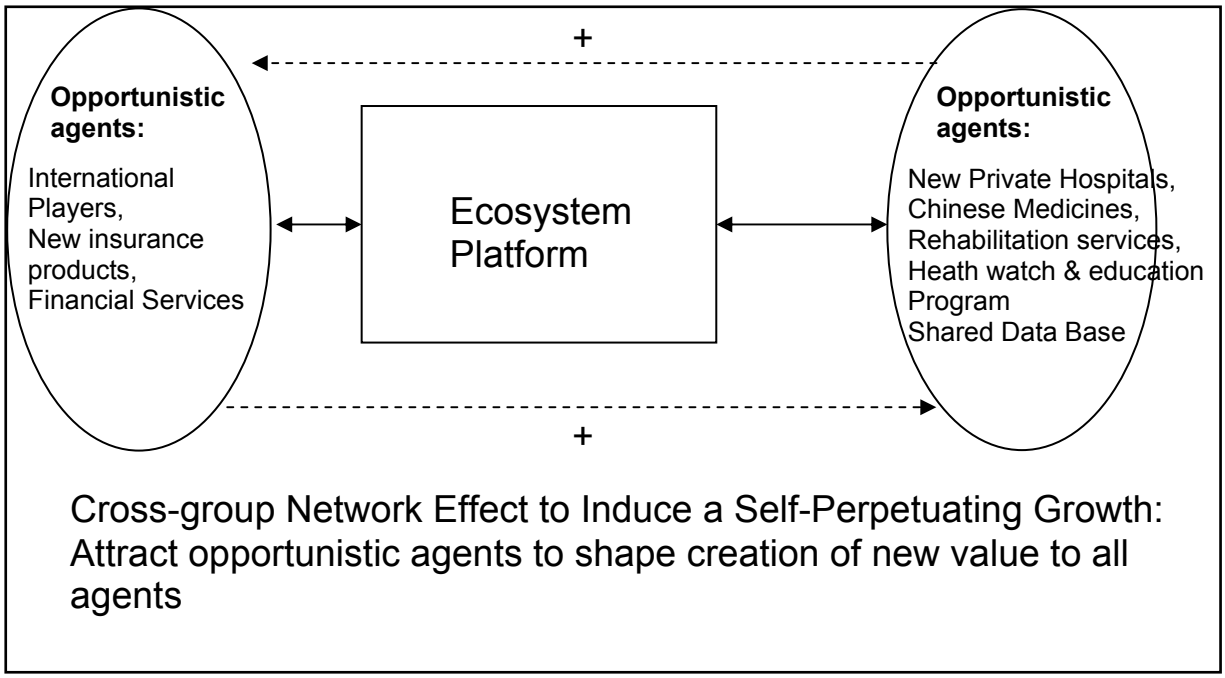
triggers the disruption. Whether it will create a sustainable new market depends on its dynamics to attract enough agents to participate and build up a strong value chain structure.

When there are not sufficient players around to initiate the cycle, we need some committed agents, like the public fund and the public hospitals network as backbone in the system. This committed agent would collectively control the set of attributes that increase the value proposition of the grabber vision to other agents, such as insurance companies, within the ecosystem. In the process, the public fund will build up infrastructure and other holder elements supporting the system. In order that a vision can survive and become a possibility, a set of attributes must be improved to reach a certain threshold level that would enable all committed agents to derive positive benefits. These set of attributes is referred as supporting drivers as they would support the grabber vision as a possibility. The size of the user group is one of this attributes. There are other attributes that we referred as the key drivers for the grabber vision. These key drivers, such as privatization of public hospitals and shared data base, are interdependent in the sense that improvement in an appropriate combination of them is necessary to yield increasing benefits to all committed agents in the ecosystem. We will illustrate this dynamic of growth in the diagram below:

- Mandatory framework serve as key driver
- More insurance companies participate
- Attract public & private hospitals to join
- Create market for back up services
- Enhance the financial market
- Value creation



Dynamic Supporting and Key Drivers Cycle of Proposed Health Care System



Cross-group Network Effect to Induce a Self-Perpetuating Growth: Attract opportunistic agents to shape creation of new value to all agents

Once the dynamic cycle is established and the value is created, all these new economic agents decide to embrace the vision and they can derive higher benefit by joining the ecosystem. We refer these agents as opportunistic agents. Each of these

agents would provide exogenous factors that improve the value for the ecosystem in a totally unpredictable manner.

4. Our Choice

The government has already done a complete study on different alternatives of future reform. It lists out all the pros and cons of different approaches. However the selective option, we think, should satisfy three criteria: *acceptable, affordable and sustainable*. Acceptable means the plan should be well accepted and borne by general public, and will not put excessive financial burden on them. The plan should also meet the desired objective and be sustainable in a long run. The alternative which closely match these criteria is the fifth option: **Mandatory Private Health Insurance option.**

According to the government study, it will cost $160 per month and is around 1.5% of monthly salary of $10,000. It will also cover 80% of the cases at general ward level without any top-up. It is estimated that this plan will pay 40% of the cost of public health services and the income stream is stable. If the plan is applied to a wider population base and the insurance is designed for his own personal use, there should be less resistant from the public. Although there will be an increase of premium in the future, it will be ease off through price ceiling. Beside, there are 7.6% of the present total health expenditure is covered by employer-provided medical plan, and if this plans are included, the objections will resolve to minimal. It may also attract more employers to join in order to retain their best candidates. The employee may also top-up his plan for better treatments and wider coverage. It may also applied the Singapore model to add in the Personal Health Reserve feature. However we do not suggest the above two options are mandatory. It should be up to the insurance companies to promote this products if they require additional revenues. Because of its long term commitment and secure nature, this market should be regulated. In order to attract financially strong players and avoid vicious competitions, we suggest that the number of players are limited to three or four. This will allow a sufficient large pool for each player with optimal efficiency. The statuary body will only set up the guidelines and price structure of the basic plan and invite biddings from qualified players. The rest will be left to the market. The process will be reviewed every five years to ensure services and price level.

Anybody who does not commit to a medical insurance plan, like MPF, will be fined and responsible for his own medical bills. For the low-income and under-privileged group, the government will buy a basic bulk plan. Anyone over 65 will also under this plan unless he choose not to.

It is foreseeable that the government will still be the prime resource for public health care program. However we suggest that most of the hospital should be privatized and only 4-5 big general hospitals are retained. The rest can either be lease out, for sale or even restructure for IPO. The money saved and the proceeds will go to the health care fund for future use. We believe the “money follows patients” principle will wok best and should be adopted. So the government should subsidize the patients instead of the public health services providers. As explained, we believe it will push the two-sided market forward. It is understood that this process may take years to complete in order to let time for public to buy in. However the principle should carry forward without hestitation.

To further enhance the supply side, the insurance plan may be designed in a way to allow the patients to use the creditable medical services outside Hong Kong but with bigger co-payments. This will allow Hong Kong to focus on its best and most efficient operations.

Nowadays it requires heavy subsidiary for the community to train a medical doctor. In order to secure the steady supply of trained personnel, the future graduates should be committed for additional two years of internship in public hospitals. If they choose to leave earlier, it is fair to charge them a fee to offset part of the subsidiary cost.

5. Roadmap

In general, each progress of change may be separated in different phases. The pace will depends on the acceptability of general public, number of stakeholders, and level of difficulties. Here is the steps we conclude:

1. The Hospital Authority will raise the public care rate from 5% to 20-30% of recovered cost.

2. Form a statuary bodies under the Food and Health Bureau:

- to formulate the legal frameworks
    - to determine services covered in the basic plan
    - to conclude the ceiling of community-rated premium
    - to approve the qualified insurers
- to monitor the medical insurance market
- to determine the boundary and level of subsidize

3. The Social Welfare Department will handle the public insurance for low-income and under-privileged group:

- set up guidelines and procedure
- process the applications
- apportion fund for premium

4. The Hospital Authority set up a committee:

- to formulate the privatizing strategy
- to determine the target hospitals:
    - Who?
    - When?
    - How?
        - Restructure for IPO or securitization

        - Join venture with private investment
        - For sale
    - To monitor the service of public and private hospitals

5. Another statuary body under Financial Services & the Treasury Bureau
    - To manage the public healthcare fund from government and privatization

6. Conclusion

The public health system of Hong Kong is long due for change. However the objective of change should not base on the product-centric view which only focuses on service improvement or cost deduction. Rather the government should put its resources to establish a framework which will foster an organic and self-fulfilling ecosystem in which it will allow the two-sided network to enjoy the healthy growth. The government, as platform sponsor, serves as the original creator who wants to bring as many mutually elements or agents to the ecosystem as possible. If the objective is fulfilled, not only the general public are benefit from the improved public health system, the economy of Hong Kong as a whole will also be rewarded with more value creation.