

Technology and Innovation in the Diffusion Process of 3G Mobile Phones in Japan

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Policy Brief

The study analyses specific technological innovations that have been developing in the Japanese mobile phone market to upgrade services and advancing to 4G. In accordance with the empirical results, technological innovations such as entertainment, e-payment, and high speed data services are crucial and are found significant in all aspect for the 3G diffusion. A brief summary of result is elaborated in Table 1. DOCOMO leads the market for every functionality development until now. Following DOCOMO, other two carriers emphasize to develop the same technology or upgrade according to their skilled R&D.

Table.1: Summary of result

Innovations	Whole market	Carrier		
		DOCOMO	au	SoftBank
Entertainment	(+)	(+)	(+)	(+)
e-payment	(+)	(+)	(+)	(+)
High speed	(+)	(+)	(+)	(+)
Pricing strategies	(-)	N/A	N/A	(+)
Network	N/A	(-)	(+)	N/A
Policy	N/A	(+)	(*)	N/A
Other	(+)	(*)	N/A*	(+)

(+)= Significance at the 1%, 5%, and 10%, respectively

(-)= Not significant

N/A= Excluded from the analysis

(*)= Positive "t" statistics with high coefficient

N/A*= Service is not available

Recommendations:

A number of implications and recommendations can be derived from analyzing and comparing technological innovations and policy for 3G, and looking beyond mobile communication technologies in Japan based on the empirical findings such as:

1. Entertainment comprised with video, mobile TV and music suggests significant role to adopt 3G mobile phones for Japanese subscribers. In order to meet future customer needs operators should emphasize more on contents such as mobile TV and music rather than video.
2. Electronic payment is the solution for traditional payment and helps human being to be more ubiquitous. In addition, it shows the convergence of services, that is, relation between mobile phone operators and financial institutions. This technological innovation

is important not only for Japan but also for the countries those who are thinking to adopt or already adopted the 3G services.

3. High speed in mobile phones is about to solve the imagination/innovation that every contents the mobile phone operators are considering. The emphasis is thus on upcoming developments related to high speed and to take advantage of the technological opportunities offered by new mobile and wireless technologies.

Conclusion:

It is difficult to predict which technological innovations will be the final winner of the next-generation mobile phone market in Japan. Furthermore, aside from the currently commercialized technologies, new technologies like LTE (Long-Term-Evolution) are under development and expected to launch for 4G. Since this paper examines Japan's case from the technological innovations and policy impact on 3G mobile phone diffusion, it might serve as a guideline for other countries that are considering evolving into 3G standardization. This study, however, has its own research limitations in that Japan has experienced different technological innovations and policy failure such as PTT and MNP for 3G diffusion. Further studies are required to perform a quantitative analysis on which technological innovations and policies are valid, considering the country's unique characteristics of geographical coverage, population, topography, and income level.