

# Personal Information Management in Mobile Environment in China: Protection and Utilization

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**Abstract.** Several researches have been done on management of personal information from the legal perspective and technical perspective in Chinese literature, but there is no management perspective in dealing with this problem. The paper presents a conceptual framework of protection and utilization of personal information in mobile environment from the management perspective, in which four management dimensions are discussed including the stakeholders, elements, procedures and levels.

## Introduction

With the rapid development of computer technology and radio-communication technology, mobile computing generates and becomes the hotspot. Mobile computing plays an important part in people's lives and brings about great changes. Over the past several years, mobile environment with mobile devices, such as laptops, tablets, notebooks and smartphones have increased substantially and most mobile users are equipped to access to the internet via a wide array of different carriers [1] [2]. But on the other hand, it also causes problems such as concerns about personal information protection and utilization are growing. In recent years, problems like illegal collection and selling of personal information, leakage of personal information, become serious and directly affect the safety and quality of people's lives [3].

To deal with the problems, multiple measures have been taken such as adoption of new technologies, setting of new legislation and regulations. Besides, much research has been done in China to deal with the problem of personal information protection and utilization, while management of personal information are either form the legal perspective or from the technical perspective, and few research has been done on mobile environment. Therefore, the paper proposes a comprehensive conceptual framework in China to support the management of personal information. It identifies the key elements and procedure of personal information protection and utilization in mobile environment in China and build the framework from lifecycle perspective and processed-based information resources perspective.

The paper is organized as follows: We first present an overview of personal information protection and utilization in mobile environment in China and representative theory, strategies practices have been selected for study. Then we propose a conceptual framework from the information management perspective to promote the management of personal information.

## Literature review

Representative Chinese literature from CSSCI database have been collected and studied, and literature shows that there is several research in China on issue of protection and utilization of personal information in internet environment, but nothing has been studied focusing on mobile environment.

Overall, current studies on protection and utilization of personal information can be centered into two perspectives. One is the legal perspective and the other one is technical perspective. Literature from legal perspective mainly concern about the construction of legislation framework, and two

kinds of framework model, Euro-model and US-model included, are discussed in detail. Literature review shows Euro-model legislation framework is mainly conducted by the government itself and personal information protection practice is also dominated by the government. Meanwhile, US-model legislation framework is built by the government but the personal information protection practice is implemented conscientiously by the industry and companies. In the legislation frameworks, key elements are discussion which consist of participants, mechanism, regime and so on[4]. And jurisprudence foundations are also discussed in the research to demonstrate there is necessary to protect personal information in all environment[5][6].

Literature from technical perspective mostly focus on various advanced technical measures which can be implemented on protection and utilization of personal information, such as digital watermarks, firewall technology ,electronic signature technology, Constraint Access Control Technology, data encryption technique, internet of things technology and so on[7][8].

Although much has been done on protection and utilization of personal information in internet environment, but all the research can be defined as the static research result. As personal information protection and utilization is a dynamic process and should be studied from the dynamic perspective. Therefore, the management perspective should be taken into consideration in this study. Besides, there is no systemic study on personal information protection and utilization in mobile environment, which should be kept up with the times and the actual demand.

### A Conceptual Framework for personal information management in China

Taking the existed research and implication into consideration, this paper propose a comprehensive framework of personal information protection and utilization, which is based on the management perspective, as shown in Figure1.

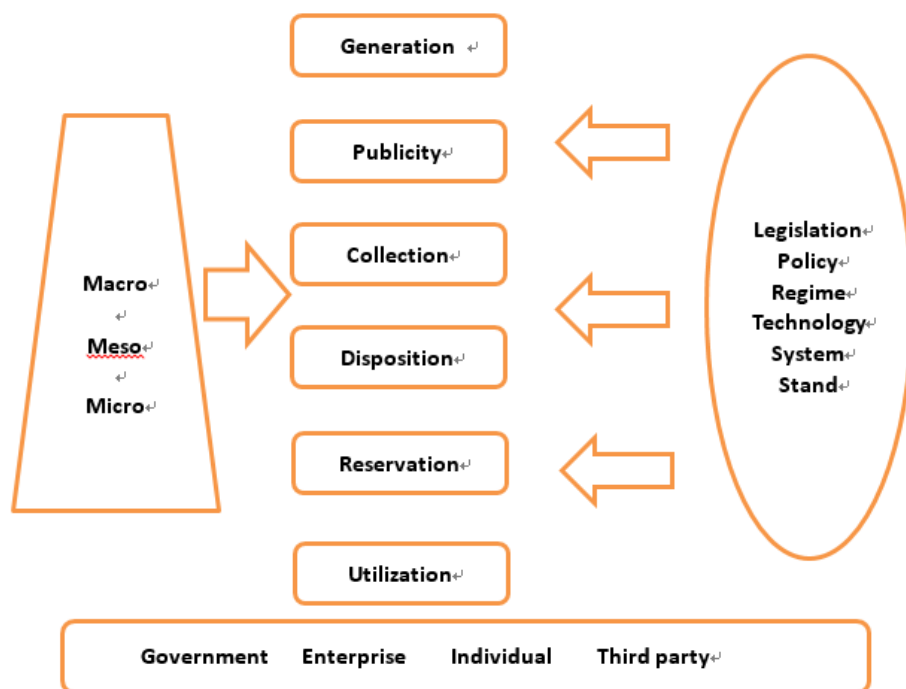


Figure 1 The conceptual framework for personal information protection and utilization.

The Proposed framework as shown in Figure1 has four management dimensions. The first management dimension is the personal information stakeholders. All the stakeholders should take part in personal information protection and utilization. Government, enterprise, individual and third party participants have to strengthen the awareness and take steps to better protect and make full use of personal information. In detail, to the government, they should take the responsibility of set about the legislation, policy, regime on personal information protection and utilization. To the enterprise,

especially the major network providers, mobile service provider, mobile terminal manufacturers, they should take measures to monitor and enhance self-discipline. To the individual, they should enhance the self-protection sense and scientifically manage their own personal information. To the third party, such as the industry association, they should investigate the industry regulation and technology development, and strengthen the guidance both for the enterprises and the public.

The second management dimension is the management elements of personal information protection and utilization. All the key management elements should be paid attention to. Key element includes the legislation, policy, regime, technology, system, standard and so on. Legislation can make basic legal analysis, principle and demand to the public; Policy can effectively sense the situation and need of personal information in different mobile environment and play the immediate functions. Regime shows the method to protect and utilize the personal information. System and technology can be defined as the facilities to protect the information, and standard can promote the efficiency and effectiveness of personal information protection and utilization.

The third management dimension is the procedures of personal information protection and utilization. The procedure should be a complete process. As personal information protection can be defined as a lifecycle procedure, there is a need to protect and utilize the personal information along the entire lifecycle of personal information, from the generation of personal information to the utilization of personal information.

The fourth management dimension is the management levels. Three layers should be set, including the macro, meso, micro levels; each separately represents the government level, enterprise and sector level, and the individual level.

## **Conclusions and recommendations**

Personal information protection and utilization in mobile environment is a completely dynamic procedure and there is a need to justify this problem from the management perspective. This paper recommends a comprehensive conceptual framework from the management perspective in mobile environment in China, which also synthesis the legal perspective and technical perspective.

This paper is limited to conceptual framework formulation based on literature review; empirical study empirical studies would be done in future to verify its effectiveness and potential applications.

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