

# THE IMPACTS OF ADMINISTRATIVE REFORM ON LOCAL E-GOVERNMENT DEVELOPMENT IN THE CHINESE CONTEXT

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## Abstract

*This paper presents the findings from a case study of implementing a personnel and salary management system in a middle-sized city in the People's Republic of China. It shows that implementing national policies at the local government level through the mechanism of developing an information system can be very problematic in terms of the local stakeholders. The problems of project delays and new and old systems working in parallel, as well as local issues like the lack of records of bonuses and allowances, represent the difficulties of understanding the local social context and managing inter-organizational co-operation. It also shows the impacts of national administrative reform policies on the local stakeholders when developing local e-government systems.*

*Keywords: Local E-government, China, Administrative Reform.*

## 1 INTRODUCTION

The development of e-government is often seen as a way to enable state organizations to become more successful, as poor governance in developing countries is often claimed to be the root of state failure and underdevelopment (Ciborra and Navarra, 2005). However, the literature argues that the objective of introducing administrative change solely by means of computerized information systems is unrealistic (e.g. Madon 1993, Cain 1996, Qureshi 1998). It is argued that the strategic use of IT should fit into long-term reform programmes (Avegrou 1990, Qureshi 1998) and should be viewed as an evolutionary process (Willcocks and Mark 1989, Westcott 2001).

Though some have argued that the biggest management challenge emerging from the process of system implementation-related transformation in the public sector lies in the effective management of functional and thereby policy integration (Taylor and Williams 1991, Spinardi et al. 1997, Jayasuriya 1999), national policy is often assumed to be a factor independent of the local context or as less important than local social factors.

This assumption is questioned here for two reasons. First, the limited rationality arguments in the policy making process have been well established in the literature (Perri, 2001:13), therefore the assumption that the government behaves rationally and makes policy decisions with adequate information is questionable. Hence, whether the objectives of national policies are achievable at the local level becomes a question itself. In other words, rather than simply asking how local governments can achieve administrative reform objectives, we also need to ask what the central government can learn from the studies of e-government development in local governments. Second, in many countries, central government has played a key role in systems development at the local government level. Higher-level governmental organizations prescribe the use of IT applications to the lower levels (Vriens and Achterbergh, 2004) to achieve the objectives of administrative reform. Particularly in those developing countries, like China, India and Indonesia, which were in transition from a centrally

planned economy to a market-oriented economy, the central government has always been a key player in developing IS at the local level.

Therefore, this research aims to study the implementation of information systems at the local government level to achieve administrative reform in China, using a case study of implementing a personnel and salary management in Foshan, a middle-sized city in south China.

China is chosen for this research for the following reasons. First, the Chinese government is committed to develop e-government as a way to achieve administrative reform. Second, considering the size and population, China is a good example of how studies of government policy implementation can inform government policy making. Third, empirical studies of e-government development in China are still very limited.

## **2 ADMINISTRATIVE REFORM AND E-GOVERNMENT DEVELOPMENT IN THE CHINESE CONTEXT**

Administrative reform in China is partly influenced by the popular concepts of New Public Management (NPM) but firmly rooted in the social context of China.

NPM aims to change the traditional public administrative model through deregulation, downsizing and privatisation by creating a new set of values for public administration. Citizens are regarded as customers who become the central focus in designing government service delivery (Osborne and Gaebler, 1992). Public officials are challenged to think about how to work with non-government organizations to deliver public services effectively and to empower citizens to take ownership of community problems. Moreover, successful managerial skills used in the private sector are recommended for the public sector to reduce costs. Despite the popularity of administrative reform across countries, the goals, contents and outcomes of administrative reform remain varied among countries (e.g. Tanzi and Schuknecht 1997, Polidano 1996), and the gaps between ambitious programmes and actual outcomes have been identified in various studies (e.g. Wright, 1997).

With the continuing debate on NPM, innovation and inspiration in public administration has become global. Countries tend to learn from each other. As Wolf (2000: 690-691) argues, “the world of public administration today has no centre, and there is no such thing as a ‘best country’. There are ‘good’ and ‘better practices’, which have to be identified on the basis of national needs and require adaptation to the national political and administrative context in which they are to function. In this sense we are hopefully moving towards a truly global learning process.”

<i>Old norms to be challenged</i>	<i>New norms to be achieved</i>
<b>All-round government</b>	<b>Service government</b>
In a centrally planned economy, the government was in the best position to manage the whole society, keeping the existence of the private sector to a minimum.	In a market economy, the government should be small and efficient. The private sector is encouraged to participate in appropriate government projects to reduce costs.
Government organizations should provide almost free social welfare to their employees.	Social welfare should be provided using the market mechanism, not by government organizations.
Local government organizations worked for the central government and senior officials at higher-level authorities.	Local government organizations should work for the public and facilitate economic development at the local level.
All local income and expenditure was managed by the central government, so local government over-budget spending was met by extra funding from the centre.	With shared tax income and public expenditure with the central government, local government organizations need to be cost-conscious, spending within budgets.
<b>Respect for authority</b>	<b>Respect for law</b>
Local government employees should follow the orders of the central government or senior officials under all circumstances.	Local government employees have the obligation to work following the procedures specified as rules and regulations.
Senior officials at higher-level authorities decided promotions and appointments of government officials.	Promotions and appointments of government officials are based on the rules of the personnel evaluation systems.
<b>Extreme egalitarianism</b>	<b>Clear reward and punishment system</b>
Life-long employment	Contract- or term-based employment with the possibility of losing jobs.
Pay was the same for those with the same job titles, regardless of their performance and how hard they worked.	Good performance and hard work are rewarded by extra bonus and promotion.
Promotion based on experience and personal relationships rather than job performance. Job titles move only in one direction, up.	Promotion based on evaluation, examination and competition. Job titles could go either way, up or down, depending on performance.

*Table 1. Ideal norm changes in Chinese administrative reform.*

In China, the ultimate objective of administrative reform is to establish a clean, hard-working, effective and efficient government (Guo and Liu, 2003), in accordance with the transformation from a centrally planned economy to a market economy. The objectives of administrative reform can be summarised from the following three perspectives (also see Table 1).

First, it aims to change the Soviet-style all-round government to a service government, matching the change from a centrally planned economy to a market-oriented economy. Before the reforms, the Chinese government was involved in every aspect of managing social and economic affairs, in compliance with the Chinese traditional administrative models and the planned economy. China had

been a feudal society for over 2000 years, from the beginning of the Qin Dynasty to the end of the Qing Dynasty. Emperors were the sole commanders for the whole society. Later, when it was a centrally planned economy, the government was in charge of the whole society. However, this type of government was unfit for the development of a market economy as it tended to restrict the functioning of market mechanisms.

China has taken a step-by-step approach to become a market-oriented economy since the open door policy was introduced in 1978. With China's recent entry into the World Trade Organization (WTO), the Chinese government has to further change its role from a commander to a public service provider in order to follow the WTO's fair trade, free trade and transparency principles. These principles require the government to have minimal involvement in economic activities, allowing Chinese companies to compete independently in both domestic and international markets.

Second, it aims to change the authority-based operational system to a law-based system. This objective is critical to ensure internal security and meet the needs of social and economic development. However, authority-based decision making has long been a feature of Chinese administrative culture. As a feudal society, for over 2000 years China was ruled by an emperor. Even after the establishment of the People's Republic of China in 1949, an authority-based rather than a law-based decision making mechanism still dominated the administrative structure (Li, 2004a). The problems of authority-based decision making include the lack of transparency in government operations, the inconsistencies and unpredictability in government policies and the lack of effective supervision in policy making. In an authority-based decision making system, the decision-maker can make new policies or change existing policies at will. Changes of decision makers often lead to sudden and unexpected changes of government policies. In addition to economic development, the establishment of a law-based administrative system also meets the requirements of China's entry into WTO.

Third, it aims to change the personnel management system from an extreme egalitarianism to a performance-based evaluation system. The reform leaders, especially Xiaoping Deng, recognized the importance of reforming the existing personnel management system in the public sector. The existing system was developed to meet the needs of the establishment of the People's Republic of China over fifty years ago. However, this system no longer suits current circumstances. The problems of over-staffing, low morale and inefficiency have produced a significant financial burden for the government (Li, 2004a), as well as fuelling the brain-drain and corruption

In terms of e-government development, the Chinese government is committed to use IT to facilitate administrative reform. The development of e-government is officially stated as one of the objectives of administrative reform.

First, economic development is a crucial driving force. It is believed that, in the digital era, China needs to develop e-government quickly to maintain its attraction to foreign investors. E-government is seen as both a response and a facilitator for the development of e-commerce. Moreover, it is hoped that e-government development can boost the national economy, particularly the information industry (Liu, 2002).

Second, China's entry into the WTO makes the development of e-government necessary (Yang, 2002). It is considered to be the appropriate way to reform public administration and increase the transparency of government operations.

Last, but not least, e-government is believed to be a good form of public administration with the possibility of performing government functions via Internet. The move to e-governance is officially justified by the theory of “three representatives” (see Li, 2004b), put forward by Jiang Zemin, the former General Secretary of the Chinese Communist Party. According to Jiang, the Party’s policies and government policies should represent the most progressive culture in China, the most progressive productivity, as well as the interests of the vast majority of the people.

The Chinese government aims to use IT to develop an open, efficient, hardworking and honest government. Six principles have been set out by the Chinese government to guide IT development in the public sector: IT development should be guided by practical needs; the design of the system should meet the needs of the public; good IS planning is essential; the IT system should enable proper information sharing and integration among government organizations; the IT systems should be secure and reliable; finally, the use of IT should improve efficiency.

Therefore, this research examines IS implementation in local government to achieve administrative reform using a case study of a Personnel and Salary Management System in Foshan, a middle-sized city in China.

### **3 CONCEPTUAL FRAMEWORK: STRUCTURATION THEORY**

Giddens’s structuration theory (1984, 1993) is used to build the conceptual framework to study the interaction between national policies and local social contexts during system development. It is used to study norm, power and interpretive scheme changes in each stakeholder group and the conflicts of perceptions among stakeholders.

The analysis proceeds as follows. In terms of legitimation, from each stakeholder’s perspective we discuss the old norms before reform, the ideal norm changes, and the conflicts with other stakeholders. Here, the norms refer to the ways of doing things, no matter whether they were written rules or unformulated, which are also subject to the interpretations of stakeholders.

In terms of domination, from each stakeholder’s perspective we discuss their views of the power structure before the development of the new system and the expected power structure after using the new system. Then, we analyze the conflicts among stakeholders and how this influenced the development of the new system. According to Giddens (1984), power is generated in and through the reproduction of structures of domination which are drawn from allocative and authoritative resources. Therefore, when discussing the power structure, we focus on these resources available to stakeholders and how they used them to influence the system development process.

In terms of signification, we study the changes of stakeholders’ perceptions of the development of the computerized Personnel and Finance Management System as a reform policy. The interpretive schemes for government bureaux are the three reform objectives outlined in Table 1, including the change from all-round government to a service government, the change from an authority-based to a law-based system and the development of a performance-based evaluation system. Then, we study the

conflicts of these perceptions among the stakeholders during the system development process, as a result of the continuous and reflexive communications with other stakeholders.

#### 4 RESEARCH METHODOLOGY

This project was initiated in the summer of 2000. It involved face-to-face interviews with government officials and system developers, attending meetings and the analysis of both primary and secondary data. In-depth semi-structured interviews were carried out with the key members in the project team from the city government, the Bureau of Personnel, the Bureau of Finance, and the technical staff from the IT Section of the Bank of China (Foshan branch). With the progress of the project and the research results emerging, government officials from the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office were also interviewed. Additionally, officials working in the finance and personnel divisions from individual government offices or institutes closely involved in salary payment were interviewed. Informal interviews were also carried out with other officials, who receive salary payments directly from the system. After returning from the site, continuing contacts were maintained through fax, emails and telephone conversations with key informants. The collected data were triangulated by cross-interviewing and analysis from multiple sources. The latter included internal memos and reports, published government documents and the popular press.

In this research, we treat as a “stakeholder” any “government organization(s) on the city level whose intentional involvement can significantly influence the outcomes of implementing the IS project.” Stakeholders identified in this research need to satisfy four criteria:

1. The involvement of stakeholders is ethical and legitimate. The legitimacy refers to the relationship to their organizational objectives and responsibilities.
2. A stakeholder can be an organization or a group of organizations that share similar interests and attributes.
3. A stakeholder in this research is restricted to the operational level, that is, the city government level, rather than the strategic level, such as central government.
4. The actions of stakeholders are intentional, no matter whether the outcomes are as they desired or not. In other words, they have an option of doing things in another way, which may affect the outcome of this project.

According to the above four criteria, in this case study we can identify the following stakeholders. The city government of Foshan oversaw the implementation of the new personnel and salary management system. It was responsible for the system development for the central government at the local level by co-ordinating various local government bureaux during the development process. The Finance Bureau was a stakeholder, because one of the objectives was to improve public finance management. Along with the Personnel Bureau, it was assigned the responsibility by the city government to design and develop the new system and it was a direct user of the new system. Similar to the Finance Bureau, the Personnel Bureau was also a stakeholder. The new system aimed to solve the problem of “ghost workers”, the prime cause of over-staffing. After the new system was developed, the Personnel Bureau was responsible for maintaining the database. The Housing Reform Office, the Social Insurance Bureau and the Local Tax Bureau were also stakeholders. Although they were not involved in the earlier stages of development, under the new system they would receive the data from the computerised system rather than from individual organizations. This output was related to income tax, social insurance contributions and housing funds, and thus they are considered as legitimate stakeholders for this research.

Another stakeholder was the Foshan city branch of the Bank of China, which was the vendor responsible for developing the new system. It was the only non-governmental organization involved in the project and it had a significant influence on the other stakeholders.

Finally, all the government organizations that needed the new system to pay their employees were considered as a stakeholder group. They provided the original data input to the system and, after the system was developed, they became important users. However, those government organizations who were no longer involved in the salary payment process were excluded from this research. These organizations had the power to make salary and allowances decisions but have now lost that power. Though they were involved in the old system, they did not actively take part in developing the new system. This was confirmed by the interviewees.

## 5 CASE STUDY

The case study concerns the implementation of a Personnel and Salary Management System in Foshan, a middle-sized city in Guangdong Province. The project was driven by the central government's initiative to use IT to automate the manual salary payments to government employees. The development of this system was among the first of its type in China and was considered as an experiment. This gradual and experimental approach in introducing reform policies is very common in China.

Foshan had set itself up as a pioneer in developing e-government and is designated by Guangdong Province as the pilot city for "informatisation" (the development of e-government). The city has one of the most advanced information infrastructures in China, including a good telecommunications network, computer-based data network and cable TV network that cover the city's urban and rural areas.

In January 2000, Foshan adjusted the income-distribution system in government institutes that fully relied on public finance, according to the principles of standardisation, unification and monetarisation. The project initiated by the central government was an attempt to experiment with the new anti-corruption mechanism of standardising basic salary, allowances and bonus payments, to facilitate the income-expenditure two-line management of government institutes and the separation of government offices and their involvement in enterprise management.

At the beginning of the project, there was no clearly specified schedule, just a deadline and vague plans. The system was developed through prototyping. The Bureaux of Personnel and Finance first explained their requirements to the system developers from the Bank of China, who then built a model and continuously modified it according to the feedbacks from the users. Considering the complexity of the Chinese payroll system, and various information requirements for future decision-making in public finance, the data collection and verification were considered important steps in system development. Additionally, more than 200 government organizations relied on this system to make salary payments. Therefore, completeness and accuracy were emphasised.

After collecting the data from individual government organizations, the system was ready for testing. During prototyping, old data had been used but for testing real data was used, with data input from the Bureaux of Finance and Personnel in July 2000. Both bureaux were first implementing the system to pay out salaries in August. Gradually, with the completion of data collection from other government organizations, the system was implemented by government offices in October, and by government institutes in December, with the exception of a few special cases. By the end of December, more than 200 government organizations were using the computerised payroll system to make salary payments to more than 13,000 people. This was the first complete implementation of the computerised payroll system in Guangdong Province.

Though the development of this computerised system was broadly seen as very successful by the local stakeholders and other city governments also came to learn from their system development experience, there were three main problems during system development that provided a good opportunity for us to study the interaction between national policies and local social contexts.

The first problem was the delay to the project owing to system integration difficulties. The original design of inter-organizational data exchange looked quite straightforward. After the direct deduction of income tax, social insurance and housing contributions from the salary payment, the detailed information would be sent to the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office in the form of paper or computer-disk. However, problems arose when the data output of the new system was not compatible with the existing systems in these bureaux. As a result, this delayed the project.

Additionally, the payroll system was designed implicitly as a shared database of salary and personnel details of government employees among different government departments. Though the Personnel and Finance Bureaux had direct access to the database, the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office would be able to benefit from the data generated from the new system.

The lack of inter-organizational co-operation, including the problem of data sharing, could be seen as the result of the traditional administrative culture or a lack of management support. However, it seems that this does not apply in this case. First, from the beginning of the project, the city government gave full support to the project, which was also recognised by the project team. In particular, it played an important role in solving the problems in inter-organizational co-ordination. Second, the problem of inter-organizational co-operation cannot be explained by the traditional administrative culture, which suggests that government departments are reluctant to share information and co-operate with each other. The problem in this case was that the Personnel and Finance Bureaux intended to share the personnel data with other bureaux but, from the perspectives of the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office, they had to make compromises and to some extent accept the direct deductions made by the new system.

The second problem concerns the bonus and allowance payments to the employees of individual government organizations. Although the new system was able to handle the basic salary payment, the payments of bonuses and allowances remained in the hands of the finance departments of individual organizations. The Finance and Personnel Bureaux were trying to integrate these payments into the new system to strengthen public finance management. However, they encountered many problems, while individual government organizations insisted on retaining their ability to manage allowances and bonus payments for effective organizational management. On the face of it, the problems of managing these payments from the Finance and Personnel Bureaux's perspective were due to the lack of

historical data. However, both the Personnel and Finance Bureaux and individual government organizations claimed that their interpretations matched the administrative reform objectives. In other words, the issue of whether and how the bonus and allowance payments should be handled by the new system was subject to debate. Therefore, it was worth investigating the reasons behind this problem.

The third problem was the parallel use of the old and new systems. The problems of data integration with the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office ended up with the adoption of three different solutions. However, all these solutions were compromises, such that the old and new systems had to work in parallel. The Local Tax Bureau accepted the data generated by the new system and from individual government organizations, and audited individual organizations through occasional visits as before. The Social Insurance Bureau checked the data generated from the new system against the information collected in the old way that included the information already held in its Intranet and the updates from individual organizations. The Housing Reform Office still required personnel staff in government organizations to hand in the information about their employees and checked it against the data generated by the new payroll system. The parallel use of the old and new systems was not the intention of the project; therefore, there is a need to understand how it came about.

## 6 RESEARCH FINDINGS

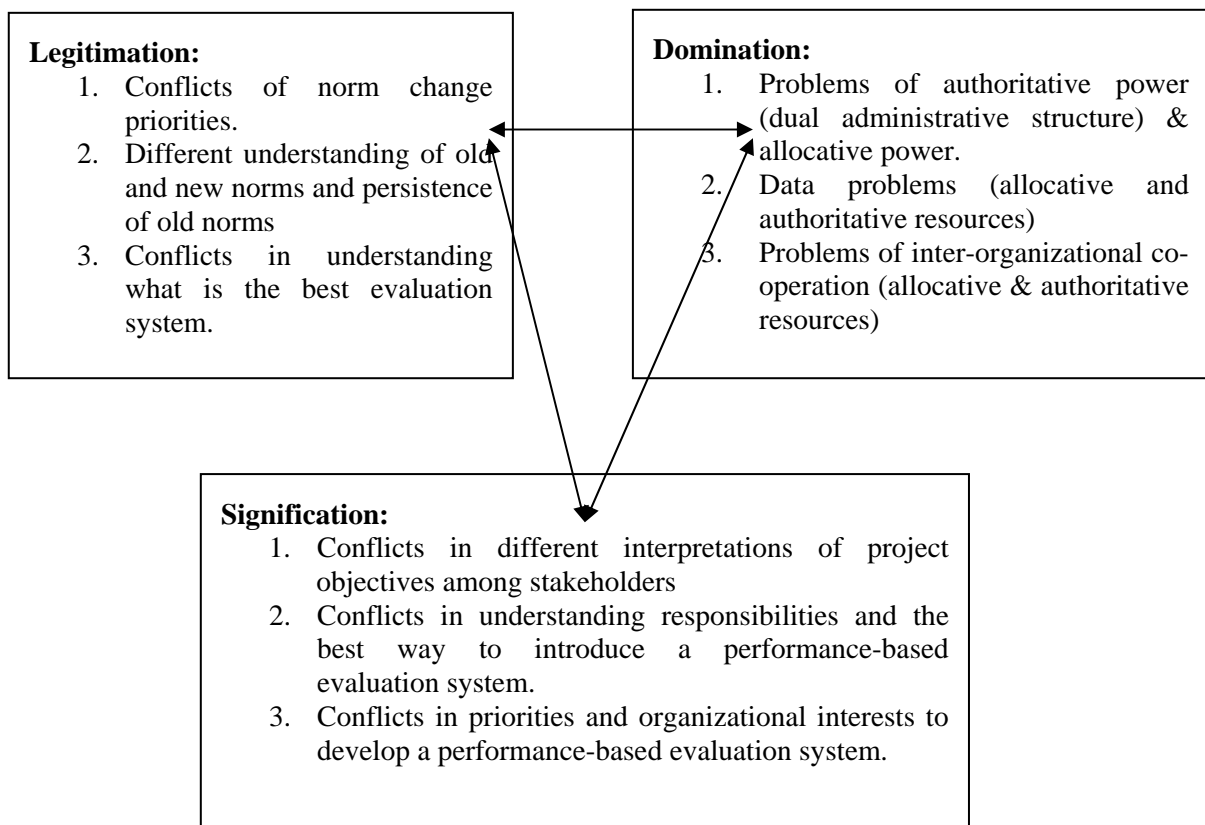


Figure 1. Summary of Findings.

Figure 1 summarises the results of analysing the case study from the three perspectives of structuration theory: legitimation, domination and signification. It shows that all three dimensions are inter-linked, which provides insight into the three main problems apparent in this case study.

### Project Delay

The project delay was blamed on the incompatibility of technical systems among different government agencies. However, the above analysis reveals the challenges of designing and implementing an inter-organizational information system to change the social structures at the city government level.

First, in terms of legitimation, it shows that different organizations had different perceptions of the existing norms and the ideal norm changes. One of the problems that caused the delay was that the Personnel and Finance Bureaux and the city government did not understand the existing practices and needs of the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office. From the Personnel and Finance Bureaux's perspective, the existing system was inefficient and a new system was needed. However, from the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office's perspectives, their existing system was an effective mechanism to manage income tax, social welfare and housing contributions. Therefore, the need for change in the Personnel and Finance Bureaux conflicted with the need to maintain the status quo in the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office.

Second, in terms of domination, the case study reveals that the existing practice in every local government bureau is associated with an underlying power structure, and hence the development of an inter-organizational system meant a change of resource allocation and power structure.

There was a lack of communication channels between the Personnel and Finance Bureaux and the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office. Since the Personnel and Finance Bureaux had worked together, they could use the new system to change the existing power structure to improve personnel and finance management. However, they had not worked with these other agencies and they did not understand how they used their existing system to collect income tax, social insurance and housing contributions from individual organizations. Therefore, they faced resistance when implementing the new system.

Finally, in terms of signification, the delay reveals the importance of identifying stakeholders and their needs before development starts and responsibilities are allocated. In this case, the city government identified the Personnel and Finance Bureaux as the main stakeholders at the start of the project. It held meetings with their heads, who were given the resources and responsibilities to develop the system. The Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office only became involved at a much later stage when integration problems occurred.

To summarise, when the policy was made by the central government and implemented by the local government, it was hard, if not impossible, for the central government to identify stakeholders, particularly to understand the local context. Therefore, as this case study shows, it was crucial to identify stakeholders and understand their existing practice to enable a smoother implementation of the new system.

### New and Old Systems Working in Parallel

Ideally, the new personnel and finance management system would have replaced the existing systems and established a new way of working. However, in this case, the result was that the new system and the old system had to work in parallel. From the above analysis, we can see the conflicts concerning

the reform objectives with existing practices at the local government level in terms of inter-organizational relationships.

First, in terms of legitimation, this problem shows the limitations of using the private sector in government projects and the use of performance-based evaluation systems. One of the administrative reform objectives was to achieve the change from an all-round government to a service government. A highly efficient service government should be able to provide an integrated service to the public, and the use of IT was to serve this end. IT is a tool to realize information sharing and inter-organizational co-operation among organizations.

However, as this case study shows, this conflicted with the performance-based evaluation system currently used in the Chinese administrative reform. The latter encouraged government bureaux to pursue their individual organizational objectives, and the co-ordination between agencies was left to the city government to manage. Without mutual benefits, such as the improvement of personnel and finance management for both the Personnel and Finance Bureaux, there was little incentive for the other agencies to co-operate. Moreover, these agencies had their own budgets and were encouraged to use the private sector to reduce costs. However, competition is the nature of business in the private sector and conflicts of interest were almost inevitable among government bureaux with different vendors.

Second, in terms of domination, this analysis shows the conflicts of power in the existing dual administrative structure. When there were conflicts between the new system developed by the Personnel and Finance Bureaux and the existing systems in the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office, these two interest groups were unable to command any changes from each other as they were at the same level in the administrative structure. Although the city government had the administrative power, it was unable to decide the direction of the project because of the dual administrative structure. As discussed before, the dual administrative structure left government bureaux with the discretion to decide their own priorities. Therefore, the final result, with the new and old systems working in parallel, was a compromise among government bureaux.

Finally, in terms of signification, this analysis shows the difficulties of inter-organizational co-ordination. In this case study, the priority of the Personnel and Finance bureaux was the improvement of personnel and finance management, while the priority of the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office was the management of government revenue, social insurance and housing reform respectively. The Personnel and Finance Bureaux designed the new system to ensure their control of personnel data and salary payments, while the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office insisted on retaining their existing systems to ensure the collection of income tax, social welfare and housing contributions.

To summarise, the difficulty of replacing the existing systems in various organizations with a new system reveals the delicate inter-organizational relationships at the city government level and the conflicts among local government bureaux in administrative reform.

#### Bonus and Allowance Payments

The bonus and allowance payments in individual organizations is an example of the ambiguous administrative reform policies that can bring conflict between different interest groups at the local government level. In this case, the Personnel and Finance Bureaux aimed to incorporate the bonus and allowance payments into the new system, while individual organizations aimed to retain their discretion on these payments.

First, in terms of legitimation, the conflict was concerned with who should be in charge of the payments, and hence who would be better at achieving the development of a performance-based

evaluation system. From the Finance Bureau's perspective, the standardization of bonus and allowance payments would help to develop an evaluation system based on the performance of individual employees, regardless of which bureau they worked for. From the individual organizations' perspective, each organization should have the discretion to develop a performance-based evaluation system tailored to their organizational needs, which would encourage their employees to work harder.

Second, in terms of domination, the conflict was about how to deal with the existing bonus and allowance payments that were not documented. The lack of knowledge of the rules and regulations regarding these payments illustrated the lack of power of the Personnel and Finance Bureaux to control and incorporate these payments into the new system. Although after the reform, individual organizations could not make bonus and allowance payments to their employees without the knowledge of the Finance Bureau, they had the power to make such decisions before the reform. Moreover, the Finance Bureau did not have the power to decide how to deal with these undocumented bonus and allowances payments.

Finally, in terms of signification, the conflict was concerned with the differences among organizational missions. Individual organizations felt that they needed to control these payments in order to improve organizational performance but the Finance Bureau wanted a rule-based evaluation system to be followed by all government organizations at the city level.

To summarise, the problem of bonus and allowance payments reveals that administrative reform policies have grey areas related to historical or cultural issues. Different interest groups try to make good use of these grey areas to retain or gain power to realize their organizational interests.

## 7 CONCLUSION

From the theoretical perspective, this research differs from existing literature in the following two areas. First, national administrative reform programmes have been given greater weight in our research, in which we studied IS implementation at the local government level. In the existing literature, it is recognized that government policy integration is a crucial issue and that it is difficult for IS implementation, particularly in developing countries, to achieve the objectives of administrative reform. However, the existing literature tends to treat administrative reform policies as a factor at the macro level, with a limited impact on IS implementation in local government. In many cases, national policies only refer to the national IT policies.

In this research, it is believed that there is a strong link between administrative reform and IS implementation in local government, particularly in transitional economies like China where the central government often prescribes IS projects to local government. Moreover, it is believed that the local stakeholders are influenced by national administrative reform programmes, and the effectiveness of these programmes depends on the outcomes of the local implementations. We do not assume that national policies are rational; instead we believe that local stakeholders are influenced by their perceptions of the project, the reform intentions of central government and other on-going administrative policies.

The findings of our research confirm the importance of taking national administrative reform policies seriously while studying IS implementation in local government.

First, it is found that the local stakeholders can have different interpretations of administrative reforms and how to achieve the objectives of these reforms. For example, the Finance Bureau and individual government organizations disagreed on who should be in charge of paying the bonus and allowance payments in order to develop a fair performance-based evaluation system.

Second, our research has found that the dual administrative structure in China leads to different priorities for the stakeholders in local government, causing difficulties in inter-organizational co-operation during system development. For example, the Local Tax Bureau focused its efforts on developing its own system to manage tax payments as part of the national Golden Tax Project and so they were reluctant to participate in developing the Personnel and Salary Management System.

Finally, our research suggests that studying IS implementation projects in local government can reveal the problems of national policies. There can be a mismatch between the reality and the design of the IS project, like the design of information sharing among different government bureaux, in conflict with the reality of varying data requirements and systems among government bureaux. There can also be conflicts between different government policies. In our case, the aim of using IT to enable information sharing and exchange among government organizations to develop an integrated service government conflicted with the performance-based evaluation system where every government bureau is responsible for its own budgets and organizational missions. The difficulty of inter-organizational co-operation is further complicated by the different vendors used for outsourcing by the various government bureaux.

The second way in which our research differs from the existing literature is in the conceptual framework, which is based on structuration theory. Its use in this research shows a way to understand IS implementation in local government that is initiated by central government to achieve administrative reform objectives.

Administrative reform policies are often studied at the national level while IS implementation in local government is often studied at the local level. This research uses structuration theory as a means to understand the relationship between individual and society and between action and structure. From the structural perspective, the administrative reform policies are seen as “traces in the minds” of the local stakeholders. Hence, the conceptual framework allows us to understand the interaction of national policies and IS implementation at the local government level.

Yet, structuration theory only provides a way of thinking of IS implementation in local government to achieve administrative reform objectives. To identify the objectives of administrative reforms in China, we refer to the principles of New Public Management, on which administrative reform policies in many countries are based, as well as the social contexts of the Chinese administrative reforms. Hence, the conceptual framework, based on structuration theory, and the identification of the Chinese administrative reform objectives, together provide a different way to view IS implementation at the local government level to achieve administrative reform desired by the Chinese central government.

Four recommendations for practitioners can be drawn from the findings of this research. First, that the difficulties of inter-organizational co-operation during system implementation cannot be solved at the local level alone. They call for changes at the central government level, in two ways. To start with, they call for policy integration and co-ordination among different government ministries, which means the strengthening of horizontal inter-organizational co-operation at the central government level. Secondly, they call for changes to the dual administrative structure, which is not suitable for inter-organizational co-operation, especially in an IS development project that requires information exchange and data sharing among government organizations.

Second, this research suggests that there is a need for an authority as a co-ordinator at the local government level that can be in charge of implementing IS projects. The authority should have the power to persuade the different local stakeholders to cooperate and, at the same time, it should be responsible for the system development projects. In this case study, although the city government played the role of co-ordinator, this was insufficient as the city government did not have the authority

and responsibility to oversee and co-ordinate the IS projects going on in different government bureaux. Although there was a local government Information Management Centre, it had little power and was in fact not involved in this project. There is a need for such an authority as a co-ordinator responsible for developing IS projects for the following reasons. First, as it oversees the development of IS projects at the local government, it can understand the local operations and identify the stakeholders at the start of the project. In our case, neither the city government nor the Personnel and Finance Bureaux had enough resources and working knowledge to understand the operations of the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office. Second, it should have the power as a co-ordinator to prioritise IS projects in different bureaux and the necessary resources to make changes if necessary. Third, it should be the point of contact between central government and local stakeholders, and it should ensure that the objectives of the IS projects are agreed in principle among the local stakeholders.

Third, our research suggests that local governments should be aware that the policies designed by central government may not be suitable for the local social contexts. When there are conflicts, the problems should not all be left to the local governments to solve and there should be an effective communication channel between central and local government during IS implementation. In our case study, we identified three conflicts between the assumptions made by the central government and the local reality. First, the design of the Personnel and Salary Management System assumed that all the rules for paying government employees were clear and unambiguous. However, in reality, the allowance and bonus payments were not very clear and sometimes the sources of such decisions were hard to trace. In other words, the ideal of developing a computerised rule-based salary management system can conflict with the existing confusion caused by the old authority-based decision-making system. Moreover, the existing rules and the perceptions of new rules can also vary among the local stakeholders. Second, as the purpose of the system was to improve personnel and public finance management, the central government identified the Personnel and Finance Bureaux as the stakeholders responsible for system development. However, this conflicted with the practices at the local level. It turned out that the Local Tax Bureau, the Social Insurance Bureau and the Housing Reform Office should have been involved in this project at an earlier stage. Finally, in this case, the vendor was completely responsible for funding and developing the system, which provided the cost-saving and budgetary control demanded by the central government. However, in reality, the conflicts between the stakeholders using different vendors and the lack of control of project funding brought problems to inter-organizational relationships, which could harm local IS implementation. Moreover, the existing performance-based evaluation system, in which government bureaux are responsible for their own budgets and organizational performance, does not encourage inter-organizational co-operation. A new and more creative performance evaluation system may be needed to encourage inter-organizational co-operation during system development.

Finally, although this research focuses on the social context of the People's Republic of China, the findings may be useful for governments in other countries, especially for other transitional economies, where central government often plays a key role in promoting IS development in local government. Although the reform objectives and the social contexts may differ, the conceptual framework developed in this research and the approach adopted can be useful for them to understand the difficulties of implementing IS in achieving administrative reform.

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