Insight into the Construction of Occupational Classification in E-Commerce in China

Xuewen Gui, Xiaolan Wu, Song Liu

Insight into the Construction of Occupational Classification in E-Commerce in China

Xuewen Gui[1]✉, Xiaolan Wu[2], Song Liu[3]

[1] Electronic Commerce Research Center of Hubei Province, Information Management School, Central China Normal University, Wuhan, China
guixuewe@mail.ccnu.edu.cn
[2] Information Management School, Central China Normal University, Wuhan, China
wuxiaolan666888@163.com
[3] Information Management School, Central China Normal University, Wuhan, China
147320325@qq.com

Abstract. The great advances on e-commerce industry have tremendously promoted the development of Chinese economy and society. However, thus far, there has been a lack of a comprehensive occupational classification system of e-commerce in China, which has inhibited the further improvement of Chinese e-commerce industry. In this article, on the basis of current situations, we highlight the importance, summarize the relevant researches and learn excellent experience of constructing e-commerce occupational classification system, from China and overseas, and thus put forward the reasonable methods and contents of the construction of e-commerce classification system in China.

Keywords: e-commerce; occupational classification system; e-commerce industry

1 Introduction

The rapid development of Internet technology has facilitated the emergence of Chinese e-commerce era during the past two decades. As a new kind of economic style, e-commerce has attracted considerable attentions from all sectors of society in China because of its excellent abilities to enhance economic benefit and effectiveness of traditional business. Especially in recent years, e-commerce has been recognized as sunrise industry or green industry, and has become one of the most fashionable and promising industries. The statistics from China E-business Research Center has demonstrated that the total transaction amount in e-commerce industry in China has reached 10.2 trillion Yuan RMB ($1.63 trillion) in 2013 [1]; "The 12th Five-year Plan of E-Commerce Development" predicted that the total transaction amount of e-commerce in China would exceed 18 trillion Yuan RMB in 2015 [2]. Meanwhile, according to the data provided by China E-business Research Center, there would be over 2 million employees engaging in e-commerce industry by the end of the fourth quarter of 2013 and e-commerce has brought over 1.5 million job chances for employees [1]. Obviously, e-commerce industry has huge influences on society and

economy at present. However, thus far, there has been a lack of a comprehensive occupational classification system in China, which may lead to the poor understanding of the standards and requirements of e-commerce personnel training in universities, pose negative effects to training e-commerce professionals, and trigger the mismatch between demand and supply of e-commerce professionals. Thus it inhibits the further development of Chinese e-commerce industry. Therefore, it is highly desirable to construct a comprehensive occupational classification system, because it can provide reliable guidance for the training of e-commerce professionals, contribute to the construction of meliorating occupational classification system, and lay solid foundation for the construction and development of economy in China. This article is based on the current status of Chinese e-commerce occupational classification, sheds light on the excellent experience of the occupational classification from America and Canada as well as Chinese IT industry, subsequently demonstrates the principles and goals as well as the construction contents of e-commerce occupational classification system in China.

2 Research Background

2.1 Occupation and its classification

It is well known that occupation is defined as a social work with the goal of meeting material and spiritual needs by means of expertise and knowledge, in which human beings engage to gain income, achieve personal values, and realize social values as well as create wealth for society [3]. Correspondingly, an accurate description of occupational classification then refers to that following certain scientific methods and standards, the various occupations are arranged and classified systematically to form a logical and ordered system [4]. Many advances on occupational classification have been achieved in various countries, which promotes the development of economy and society. For instance, Holland thought that occupations could be classified into six major categories, such as realistic, Investigative, artistic, social, enterprising, and conventional, and subcategories on the basis of the concept of personality types with the aid of Bayesian statistics and the Dictionary of Occupational Titles (DOT) [5]. Moreover, in 2010, the Office for National Statistics (ONS) published the second version of the occupational classification, which is revised every ten years in UK by collaborating with experts and consulting with users and producers of occupational statistics [6]. Obviously, these advances on the construction of occupational classification played positive effects on the continuous development of society.

2.2 E-commerce

Many previous reports have demonstrated that the concept of e-commerce could be defined from the following three aspects: in narrow sense, e-commerce belonged to a kind of business activity which focused on the exchange of goods and services on the basis of IT; in middle-level sense, e-commerce could be viewed as the electronization of business workflow in various industries, which was also called as e-business in-

cluding a wide range of businesses and services, such as e-government, networking, the electronization of intra and inter-enterprise operating system [7]; in broad sense, e-commerce was a new model of economic activity which conducted various businesses online [8]. In general, e-commerce is a cross-discipline subject covering the fields of economy, management, information technology, and law, and is associated closely with other industries, such as manufacturing, service and public utilities ones, which requires high-quality talents with both solid professional knowledge and skilfully practical operation abilities [9]. Furthermore, the emergence of e-commerce was highly inspired by the development of IT, and both of them shared some similarities in the occupation characteristic and requirement, such as web transactions that includes advertising, buying, selling positions and the application of IT covers through almost the whole e-commerce industry. The great similarity between e-commerce and IT provides a strong indication that constructing occupational classification system in e-commerce can base on methods and principles of occupational classification of IT industry [6]. Obviously, in view of the above considerations and the highly developed feature of network technology at present, the relatively more suitable description of e-commerce should be conducted from the perspective of narrow sense. Therefore, this article attempts to give a detailed discussion on various commodity exchange dominant commercial activities by electronic means and their corresponding occupational categories from the perspective of narrow sense of e-commerce.

2.3 Research on e-commerce occupations

Forty years ago, China Labor & Social Security promulgated “Dictionary of Occupation in China”, the first programmatic document to give an objective and comprehensive classification of Chinese occupations, which basically reflected the structures of social occupations and provided significant basis for statistic information of workers, employment guidance, and occupation introduction, etc. [10]. However, because of the development of economy, the advance of science and technology, and the improvement of industrial structure during the past four decades, the dictionary, at present, cannot meet the requirement for the construction of Chinese occupational classification in various industries, especially in newly emerging industries, such as e-commerce. Furthermore, the rapid development of e-commerce triggers the tremendous changes in its occupational structure and operation mode. Thus, these reasons result in that the principles of the occupational classification in the dictionary not only are unable to reveal the trend of the current e-commerce industry comprehensively and objectively, but also fail to provide efficient guidance for the development of the industry.

So far, there have been few research works focusing on the construction of occupational classification, even fewer in e-commerce industry. Research works on the classification of e-commerce occupations are still in their infant stage, which reserves numerous spaces for the further development. Recently some documents have generated on the construction of occupational classification of e-commerce. However, they mainly focused on elucidating the significance of occupational classification and their

instructive effects on vocational education, which could not meet the demand of the development of Chinese e-commerce industry.

With the continuous development of Chinese e-commerce, researchers have gradually realized the importance of e-commerce occupational classification, which stimulated their great research interests on this theme. Liang, B. (2007) first thought that the e-commerce positions could be divided into two categories in terms of the evolution process, namely the traditional positions modified by the effect of new information technology and the situation of e-commerce booming, and the newly-emerging positions induced by computer science, Internet and communication technology, which were the pioneering works on the original classification of e-commerce positions [11]. Subsequently, Meng et al. (2009) demonstrated the four types of e-commerce positions including technology, business, management, and e-commerce engineering ones, which further promoted the construction of Chinese e-commerce occupational classification [12]. Gui (2013) from the viewpoint of the development status of commercial services and applications, classified e-commerce occupations into two categories, namely e-commerce service and e-commerce application, on the basis of job demands [13]. The iResearch Consulting Group conducted extensively interviews and investigations on e-commerce enterprises and pointed out that the occupational classification positions in e-commerce industry could be sorted into six categories, such as positions of e-business operation, marketing, network engineering, logistics, procurement and customer service; besides, with the same method, a detailed subordinate classification was conducted on the basis of the above six categories [14].

On the basis of the aforementioned research results, it can be found that as great efforts have been made in e-commerce industry, the investigations on the e-commerce occupational classification has become more and more comprehensive and deepening. However, despite of some advances, the state-of-the-art of e-commerce occupational classification cannot satisfy numerous requirements of the development status and market demands in the industry. Therefore, the construction of a maturity e-commerce occupational classification in China is highly pursuing, but still a great challenge.

3 The Experience of Occupational Classification in China and Abroad

According to the researches of the authors, there also have been few completely comprehensive e-commerce occupational classification systems in abroad, which is adverse to the improvement of e-commerce worldwide. Thus, we have to build a new system to serve for the industry. In order to construct a consummate e-commerce occupational classification in China, we should take some effective and practical experience as references from China and overseas. The following are several typical examples of occupational classification from Canada, America and Chinese IT industry.

3.1 Features of occupational classification in abroad

Standard system.
An occupational classification book published in Canada, is one of the most abundant, substantial and comprehensive reference tools for the classification of e-commerce industry. This reference book demonstrates that the occupations in Canada can be systematically and thoroughly classified into 10 broad occupational categories, 40 major groups, 140 minor groups and 500 unit groups. There are approximately 40,000 occupational titles classified in the 500 unit groups of the NOC (National Occupational Classification) 2011, which constitute the classification system. In the system, each major group has a unique digit code orderly, as well as minor group, unit group and occupational title [15]. This reference book featuring with extremely comprehensive and professional characteristics of occupational classification method, covers a wide range of occupational classification for almost all positions in Canada, and provides detailed description of work skills and access requirements. Inspired by its broad universality, the construction methodology of occupational classification in this book is applicable not only for Canada, but also for other countries with different social systems, as well as for the construction of Chinese e-commerce occupational classification.

Flexible methods.
There is a widely applied information system on occupational classification in America. The system classifies jobs from generality to individual into 23 major occupational groups of the revised SOC (Standard Occupational Classification) system. These major groups include 97 minor groups, 461 broad occupations, and 840 detailed occupations according to the following six criterions: requirements of knowledge, requirements of practical experience, qualification of job holders, personalities, special work requirements and professional features [16]. Meanwhile the design of the system also focuses on the quality of the users experience, allows to be classified by different methods during collecting data, and displays high flexibility and customization, which agrees well with the practical demands of users. Thus, the construction methodology of occupational classification in this system is of great value for directing the construction of Chinese e-commerce occupational classification system.

Dynamic update of contents.
The contents in occupational classification system in America can be updated periodically, which can remove the outdated positions and simultaneously monitor newly-springing up professions on the basis of changes of social industries, such as revolution of IT, popularity of office automatic (OA) system and explosion of tertiary industry continuously. So users can make good use of the system to compare the newly developing positions with their own, and thus grasp the latest occupational information to serve for themselves. Additionally, the system gives emphasis to collecting the information of service-oriented and professional positions and eliminating the records

of positions of labor-intensive industries to update the system, which is in well accordance with the laws of social development.

Adaptable for users.
The occupational classification system in America is divided into four hierarchies which are convenient to information acquisition for both organizations and individuals according to their own requirements. The users can compare the data with their own work properties to orientate themselves to make decisions or to fulfill diverse needs.

3.2 Features of IT industry in China

A research group of IT field constructs a specific occupational classification system which is built according to two main reasons. The first reason is based on the considerations of the practical situation where the development prospects of economy, technological innovation and industries transformation present in China. The second reason is the rapid development of IT occupations with a large number of employees and positions emerging. In the scheme, the occupations in IT industries are firstly classified into 3 main categories, such as the major group, the application group and the related group. Secondly, the major group is subdivided into 5 minor groups, such as software, hardware, web, information system and manufacturing groups, which represent 5 crucial pillars in IT industry. Thirdly, the application group is subdivided into 7 minor groups, such as control, design, business, entertainment, education, and communication groups. Fourth, there are 41 unit groups formed on the basis of dividing the 12 minor groups mentioned above. Additionally, there is no subdivision in the related group [17]. The classification system data in the scheme shows that it covers almost all the positions and reflects the basic structure of occupations comprehensively in IT industry, which has been verified by its practical applications in personnel training and course arrangement.

In addition, because of the high variability of the IT occupations, the research group is currently considering constructing a long-term observable pre-warning system to monitor the variation of relevant positions, which will provide theoretical and experimental support for perfecting and updating the IT occupational classification system.

4 The Construction of Occupational Classification System in E-Commerce Industry in China

On the basis of combining the experience of the above excellent occupational classification methods with the situation of e-commerce development in China, the approach to construct occupational classification system in e-commerce industry can be divided into three parts, namely principles, aims and methods.

4.1 Principles and goals

Scientific and standardized.
Taking the development of global economy, improvement of industrial structure, and the progress of science and technology into consideration, the occupational classification system in e-commerce industry should be classified in light of properties, objects, range, and surroundings of work. Furthermore, the system should be constructed rigorously in line with rules of "Dictionary of Occupation in China". On the basis of the above considerations, the occupation system of Chinese e-commerce industry should be divided into four categories including major groups, minor groups, unit groups and detailed occupations. Of these classifications, the major groups are categorized according to working properties and capability requirements; the minor groups are classified further on the basis of working tasks and division of labor within the respectively major groups; the unit groups are divided and aggregated further on the basis of objects, circumstances and demands of work in the same minor groups; the detailed occupations are classified further according to the tools, equipment, techniques, etc. within the same unit groups; besides, those immature and indefinite positions should also be placed and explained properly. Moreover, if the method is in line with the traditional classification standards and rules, it may lead to the classification system failing to cover all the occupations in e-commerce industry accurately, because of the rapid, variable, and time-depending development of the e-commerce occupations, and as a result, the classification may be repeated or neglected. Therefore, it is highly desirable to classify e-commerce occupations flexibly to cover all their corresponding aspects to meet the criterion of national occupational classification.

Rational and applicable.
As the ultimate aim of classifying the occupational system of e-commerce is to boost the development of e-commerce industry and to provide efficient assistance for the economy development, so the system should agree well with the rational and applicable rules. During the classification process, the core concept for the construction species of each hierarchy should keep integrity, the standards of classification level should be identical, and the structure of the occupational system should be logical, which can ensure the rationality of occupational classification in e-commerce industry. Besides, the expressions in the system should be as concise and clarified as possible, which can sufficiently reveal the job properties, activity modes and work requirements, and also be applicable for business and national administration.

Comprehensive and long-acting.
The construction of occupational classification system of e-commerce should be comprehensive and long-acting throughout its every aspect including data collection, position setting and position description. Moreover, it should combine the advantages of all the similar researches and display distinct characteristics. Except for the rules mentioned above, the system should be advanced in its framework and long-acting in function, and in the top list among various occupational classification systems. Only

by using this method can the functions of the system be comprehensive and long-lasting.

Dynamic and open.
As e-commerce occupations develop rapidly and variably, the system of occupational classification in e-commerce industry should display the feature of dynamic update. Once new positions emerge, they should be first subjected to classification positioning timely and effectively and subsequently, match automatically on the basis of their working properties, ability requirements. Then, their corresponding affiliation classifications should be confirmed according to the above positioning results and this operation process needs to develop into a continuing system, which can facilitate the dynamic update and timely addition or deletion of e-commerce occupations. By adopting this sort of method, this system not only can reflect the state and trend of occupations scientifically, objectively, completely and accurately, and additionally, but also obeys the rules of development and meets practical demands in e-commerce industry.

Moreover, the construction of e-commerce occupational classification system should meet the relevant criterions and absorb advanced experience in China and overseas. And then, we should select the concrete e-commerce positions as the main constituents, and distinguish the difference among various e-commerce positions by analyzing their contents and styles to form a scientific, rational, ordered, open and applicable system of occupational classification.

4.2 The construction approaches of e-commerce occupational classification system

Meeting requirements and standards.
Through investigating and interviewing those relevant e-commerce enterprises in China to collect information from e-commerce market, we should grasp the situation of positions setting and then analyze the category of e-commerce corresponding to “Dictionary of Occupation in China” to place the e-commerce occupational classification system and finally construct the system in line with related standards and requirements strictly. Also, the system should meet requirements of Chinese current market system, and simultaneously be in accordance with national circumstances. Furthermore, the system should exhibit unique characteristic and also provide references to the revision and improvement of the “Dictionary of Occupation in China”.

Learning experience.
The authors hold that the systematically occupational classification results carried out previously in China and abroad should be studied thoroughly, and the statistics of those relevant positions in e-commerce industry should be paid more attentions. Moreover, after comparative researches, we should draw a comprehensive summary of all relevant experience, adopt excellent methods and eliminate outdated approaches.

Constructing a dynamical system.
The completed e-commerce occupational classification system should meet the standards of Chinese occupational classification, and in the meantime, it can develop into an independent system. In the vertical direction, the system should establish a logical framework including major groups, minor groups, unit groups, detailed occupations, and further form the main part and related part occupations in the classification, while in the horizontal direction, the definitions and descriptions of positions should be accurate and complete, which consist of basic skills, basic knowledge, work environment, relevant training, professional qualifications etc.

In addition to accurately revealing the state of e-commerce occupations, the system should predict the development trend of e-commerce industry. Therefore, it is suggested to build monitoring systems in universities or e-commerce institutes to track the trend of occupations, to detect emerging and fading ones, so that the contents and structures of the system can be adjusted and updated timely to reflect the e-commerce development authentically.

4.3 The construction of e-commerce occupational classification system

The system of e-commerce occupational classification should mirror the contents in the form of the catalog table, and can be divided into vertical and horizontal parts which interconnect and correspond with each other. In the catalog table, by taking management responsibilities and technical operations abilities as references, the vertical part is classified into four grades including high level, middle level, primary level and bottom level, all of which have an ordered arrangement. This construction method of e-commerce occupational classification, enables its pyramid-like characteristic, is well arranged and able to comprehensively cover the whole e-commerce industries. While the horizontal part of the system is classified according to the sequence modes of occupations, which can reflect the positions types comprehensively and avoid the repeating classification of emerging positions induced by monotonous arrangement. Additionally, because of the rapid development of e-commerce industry, the vertical-horizontal classification method can timely update the state of positions variation and maintain the system open. Furthermore, the single existence of every position ensures the independence and integrity of the system and the methods for maintaining and adding new classifications are very simple and convenient, which provides reliable references for the construction of other industries.

Below is the construction method of detailed e-commerce occupational classification system (as shown in Table 1)

Table 1. E-commerce occupational classification contents

Rank	**Type**	**Occupations contents**	
Senior manager		General manager/ Vice general manager	
Middle-level manager		Executive officer, Chief financial officer, Director of operation,	Director of marketing, HR director, Director of equipment,

		Chief procurement officer, Director of IT, Director of safety management
Comprehensive primary-level staff	Business	Online marketer, Salesclerk, Business operator, Secretary, Logistics staff, Financial officer, Administrative staff, HR clerk, Market developer, Information manager
	Technology	Website designer/ engineer, Picture /Video maker, Website art editor, Software designer, Maintainer, Database constructor, Mobile phone terminal developer, App developer, New media developer, Online stores director
	Service	Information service personnel, Consumer-service staff, Training service personnel, Casher, After-sales service personnel, CRM personnel
General staff		Securityguard, Mechanic, Sanitation worker, Operator

It can be seen from table 1 that in the vertical direction, the e-commerce occupational categories consist of 4 major groups: senior manager, middle-level manager, comprehensive primary-level staff and general staff representing four ranks which share similarities with the form and the personnel structure of traditional enterprises. At the same time, the comprehensive primary level staff contains three types of occupations which are business type, technology type and service type, however other ranks are not obviously with such types. In the horizontal direction, the construction of the system is on the basis of the four occupational categories, and highlights the vocational characteristics of e-commerce industry. Moreover, the method for the contents arrangement can basically meet the criterion of “Dictionary of Occupation in China”, which is beneficial for the human resource management and labor statistics in China.

Additionally, the system covers not only the majority of traditional occupations, but also some ones associating with newly emerging technology and information. Among the system, the whole senior management positions, parts of middle level and comprehensive primary-level staff positions and almost all the general staff ones originated from the evolution of traditional industries, and are still the dominating part of occupational categories in e-commerce industries and maintaining their characteristics and skills of original vocations, which also endows e-commerce industries with unique characteristic and novel definition, such as General manager in the rank of Senior manager, Executive officer in the rank of Middle-level manager, Financial officer and Casher in the rank of Comprehensive primary-level staff and Securityguard in the rank of General staff, etc.. Parts of middle-level and comprehensive primary-level staff positions associating with lately-emerging technology and information, have generated following the development of information technology, especially the e-commerce industry such as Director of IT, Information manager, App developer, CRM personnel, etc. Besides, all the positions of the system listed above are categorized basing on the narrow sense of the e-commerce concept, and basically

include all of them in the system of the industry, which induces the formation of a comprehensive system.

Obviously, the classification system established herein not only gathers all occupations in e-commerce industry, but also endows them with the specific industry characteristics. However, the occupations in American and Canadian classification systems are not classified according to industry content, which poses great obstacles to the development of those industries. Compared to Canadian and American occupational classification systems whose aims are to facilitate the management, the occupational classification systems of Chinese e-commerce established in this study helps the enhancement of e-commerce knowledge and professional qualities and has a goal of optimizing allocation of human resources and promoting the development of e-commerce, though both kinds of occupational classification methods share the same theories. More importantly, the construction methods originate from the combination between the consideration of current situations in Chinese e-commerce and the references of advanced occupational classification experience from China and abroad, which resulted in the formation of e-commerce occupational classification with Chinese characteristics.

5 Conclusion

In summary, through basing on the current state, obeying the rules of the development of relevant industry, following the corresponding classification modes and standards and learning advanced experience of classification system in China and abroad, we propose the construction methods and principles, and finally realize the reasonable construction of Chinese e-commerce occupational classification system. We believe that the successful construction of occupational classification system in e-commerce will have a far-reaching impact on the development of society and economy in the following aspects. First, the proposed methods and principles of classification can enrich fundamental theories of occupational classification. Second, constructing Chinese e-commerce occupational classification system can perfect the classification framework of the whole industries in China. Third, this event can undoubtedly boost the development of e-commerce industry. Fourth, the established theory of occupational classification in this study can offer efficient guidance, not only for the classification construction of other Chinese industries, but also for the construction of occupational classification system in other countries. However, some problems still remain unsolved, such as the classification of position properties, salary, job requirements, which encourage us to conduct a further exploration on these issues from a broader and deeper viewpoint in future.

References

1. Report on Monitoring Data of Chinese E-Commerce Market in 2013, http://b2b.toocle.com/zt/2013ndbg/

2. The 12th Five-year Plan of E-Commerce Development, http://www.miit.gov.cn/n11293472/n11293832/n11293907/n11368223/14527814.html
3. Li, H.Y.: Methodology and Functions of Occupational Stratification. Academic Exchange. 12:113-118 (2004)
4. Gui, X.W.2011. Theory and Method on Effect Measure of E-commerce Promoting Economic Development: Relevant Theory and Method on Effect Measure of E-commerce Promoting Economic Development. Dissertation, University of Central China Normal University studies in information management. Central China Normal University.
5. Viernstein, M. C.: The Extension of Holland's Occupational Classification to all Occupations in the Dictionary of Occupational Titles. Journal of Vocational Behavior. 2:107-121(1972)
6. Elias, P., Birch, M.: SOC2010: Revision of the Standard Occupational Classification. Economic & Labour Market Review. 4:48, 52 (2010)
7. Feng, G. L.: Analysis on Basic Principles of Occupational Classification Standard in China. China Training. 3:25-26 (1996)
8. Eleventh Five-year Plan on E-Commerce development, http://www.gov.cn/ztzl/2007-06/25/content_661213.htm
9. Chen, X.H.: Research on Cross-border E-commerce Talents Cultivating Pattern—Analysis based on Yiwu. Prices Monthly. 3: 66-67 (2014)
10. Dictionary of National Occupational Classification and Vocational qualification Authentication Committee.1999. Dictionary of Occupation in China: Introduction. Beijing: China Labor Press.
11. Liang, B.: Analysis on Professional Orientation and Personnel Training of E-Commerce. Journal of Anyang Institute of Technology. 5:118-121 (2007)
12. Meng, Z. X., Wu, H. Z.: Analysis on E-Commerce Personnel Training and Employment. E-Business Journal. 10:83 (2009)
13. Gui, X. W. 2013. New Impetus of Economic Booming—Mechanism and Effect of E-Commerce Measurement: E-Commerce Occupations. Beijing: Science Press.
14. Report on Occupational Development and Salaries of E-Commerce in China, http://b2b.toocle.com/detail--6096637.html
15. National Occupational Classification (NOC) 2011, http://www5.statcan.gc.ca/access_acces/alternative_alternatif.action?l=eng&loc=http://www.statcan.gc.ca/pub/12-583-x/12-583-x2011001eng.pdf&teng=National%20Occupational%20Classification%20(NOC)%202011&tfra=Classification%20nationale%20des%20professions%20(CNP)%202011
16. Cosca, T., Emmel, A.: Revising the Standard Occupational Classification system for 2010. Monthly Labor Review. 133:37(2010)
17. Report on Occupational Classification Research in IT Industry, http://www.chinajob.gov.cn/NewsCenter/content/2006-07/13/content_530717.htm