



# Technical Assistance Report

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Project Number: 47035  
Capacity Development Technical Assistance (CDTA)  
May 2014

## People's Republic of China: Chongqing Vocational Training Information Management Platform Development

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Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 24 April 2014)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1603
\$1.00	=	CNY6.2379

## ABBREVIATIONS

ADB	–	Asian Development Bank
BHRSS	–	bureau of human resources and social security
CMBF	–	Chongqing Municipal Bureau of Finance
CMG	–	Chongqing Municipal Government
PRC	–	People's Republic of China
TA	–	technical assistance

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Type</b>	–	Capacity development technical assistance (CDTA)
<b>Targeting classification</b>	–	General intervention
<b>Sector (subsector)</b>	–	Education (technical education and vocational skills training)
<b>Themes (subthemes)</b>	–	<b>Social development</b> (human development); capacity development (institutional development); governance (public administration, national and decentralized); private sector development (public–private partnerships)
<b>Location (impact)</b>	–	Rural (medium); urban (medium)

## NOTE

In this report, "\$" refers to US dollars.

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## I. INTRODUCTION

1. The Government of the People's Republic of China (PRC) requested technical assistance (TA) from the Asian Development Bank (ADB) to improve the planning and management system of vocational training and subsidies in Chongqing Municipality through the development of a unified information management platform for vocational training which will be integrated with the existing labor and social security information systems. Following a fact-finding mission in December 2013, ADB and the government reached an understanding on the objectives, scope, implementation arrangements, costs, and terms of reference for consultants. The design and monitoring framework is in Appendix 1.<sup>1</sup> The TA is included in the PRC's country operations business plan, 2013–2015.<sup>2</sup>

## II. ISSUES

2. The PRC assigns high priority to vocational training as a principal measure to (i) improve workforce skills; (ii) promote equal opportunity for quality employment; (iii) enhance innovation capacity and competitiveness of enterprises; and (iv) accelerate structural shifts in the economy, and the process of industrialization and urbanization. The government has been playing an active role in improving the vocational training system to respond to diversified needs. To encourage all of the working-age population to receive vocational training, the government provides subsidies for vocational training institutions and trainees. These subsidies have been combined with measures to improve quality and effectiveness of the training, such as strengthening quality assurance mechanisms for vocational training institutions, occupational skills assessment and certification systems, and public employment services. Allocation of vocational training subsidies has been linked to the results of the quality assessment of training institutions, and skills certification or employment of trainees.

3. To enhance equity, effectiveness, and efficiency of vocational training and subsidies provided for it, the government requires provincial and municipal governments to establish a unified information management platform for vocational training that is integrated with labor and social security information systems within the framework of the national Golden Social Security Project.<sup>3</sup> The unified information management platform for vocational training would be designed to improve transparency and efficiency of allocation and use of vocational training subsidies by allowing the dynamic management of vocational training institutions and training courses, real-name management of trainees to prevent multiple allocation of subsidies to the same trainees,<sup>4</sup> and improved planning of vocational training responding to the needs of the local economy and enterprises.

4. The Chongqing Municipal Government (CMG) has taken the lead in implementing the Golden Social Security Project. Chongqing, with a population of more than 33 million, is located in the southwestern region and is one of four provincial level municipalities that report directly to the central government. Chongqing has experienced substantial growth since the 1980s, with its

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<sup>1</sup> The TA first appeared in the business opportunities section of ADB's website on 1 May 2014.

<sup>2</sup> ADB. 2013. *Country Operations Business Plan: People's Republic of China, 2013–2015*. Manila.

<sup>3</sup> An e-government initiative to improve access to labor and social security services through information and communication technology networks of central, provincial, and municipal governments.

<sup>4</sup> Registration of each trainee by name and identification number for a particular vocational training course prevents the same trainee from receiving vocational training subsidies multiple times (a trainee is entitled to receive vocational training subsidies only once a year) and helps track each trainee from enrollment to course completion, and from course completion to skills certification or employment. The existing occupational skills assessment and certification system uses a real-name management system.

economic performance surpassing the national average. Along with economic growth, Chongqing's economy has been undergoing structural change, shifting outputs and employment away from agriculture to manufacturing and services. As part of the structural change of employment, about 8.8 million workers moved away from farms in 2011 to find employment, resulting in a corps of 13.7 million migrant workers in 2011. In addition, 0.14 million university and college graduates entered the labor market; this number has been increasing annually. Although the unemployment rate has remained low at 3.5%–3.9% between 2008 and 2011, the quality and stability of employment are serious concerns.

5. The CMG's vocational training subsidies are targeted at the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates who have not attended higher education. The municipal bureau of human resources and social security (BHRSS) supervises 56 public technical schools, in addition to a number of private vocational training institutions, and 113 public employment and human resource service centers in Chongqing. The number of people who benefited from vocational training offered by public technical schools increased from 0.17 million in 2011 to 0.19 million in 2012. Similarly, the beneficiaries of vocational training provided by private institutions augmented from 0.85 million to 1.13 million in that period.

6. Currently, the procedures for application, approval, transfer, and management of vocational training subsidies vary across districts and counties. The allocation and use of vocational training subsidies have not been transparent and efficient. For example, there is no means to verify and ensure whether (i) vocational training subsidies reach the targeted population, (ii) vocational training institutions benefiting from subsidies meet the quality and performance standards, and (iii) vocational training offered by institutions addresses skill demands of enterprises and the local economy. On the other hand, citizens (including employers and those targeted by vocational training subsidies) have limited access to information and services related to vocational training, employment, and their entitlement. For example, information on vocational training institutions and courses, the quality and performance of the institutions and the courses, benefits of vocational training (such as higher rates of employment, shorter time to get employment), and expected average wages are not readily available; or the procedures for registering, making payment, and enrolling for vocational training courses are cumbersome.

7. Within the framework of the Golden Social Security Project, the CMG plans to develop a unified information management platform for vocational training designed to enhance the equity, efficiency, and effectiveness of vocational training and subsidies. In 2012, it successfully completed phase I of the project with the establishment of a social security card system. Under phase II, the CMG intends to link the social security card system to labor and social security services. The TA is to (i) support the development of a unified information management platform for vocational training to be integrated with the existing social security card system,<sup>5</sup> occupational skills assessment and certification system,<sup>6</sup> and an online job placement system;<sup>7</sup> and (ii) disseminate information and knowledge on the unified information management platform to citizens and other provinces and municipalities.

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<sup>5</sup> Chongqing Municipal Human Resources and Social Security Public Information. <http://www.cqldbz.gov.cn:9001/ggfw/index.jsp>

<sup>6</sup> Chongqing Occupational Skill Testing Authority. <http://www.cqosta.org.cn/>

<sup>7</sup> Chongqing's Employment. <http://cqjy.cqhrss.gov.cn/cqjy/index.html>

8. The TA will support the government's goal of improving livelihoods by developing employment-oriented skills and promoting equal opportunities for quality employment by enhancing equity, efficiency, and effectiveness of vocational training and related subsidies. The TA is consistent with ADB's country partnership strategy, 2011–2015 for the PRC<sup>8</sup> and the pillar of inclusive growth, as it supports expanding livelihood opportunities for the poor. The TA will strengthen the knowledge base for ongoing and upcoming technical and vocational education and training projects, and related components of urban development projects (if any), by sharing good practices of vocational training planning, management and financing, quality assurance, skills assessment and certification, and links to labor and social security services.

### III. THE TECHNICAL ASSISTANCE

#### A. Impact and Outcome

9. The impact will be enhanced equity, effectiveness, and efficiency of vocational training and subsidies provided in Chongqing. This will be measured by (i) the percentage of those who receive vocational training among the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates who have not attended higher education increases from 6% in 2012 to 10% in 2018; and (ii) the percentage of trainees who obtain occupational skills certificates increases from 82% in 2012 to 88% in 2018. The outcome will be an improved planning and management system of vocational training and subsidies for it.

#### B. Methodology and Key Activities

10. The TA will have two outputs: (i) a unified information management platform for vocational training developed, and (ii) information and knowledge on the unified information management platform for vocational training disseminated.

11. **Output 1: Unified information management platform for vocational training developed.** The TA will develop a unified information management platform for vocational training to be used by the municipal, district, and county BHRSSs, occupational skill testing authorities, vocational training institutions, and citizens. The platform will (i) standardize quality assurance mechanisms for vocational training institutions, and training courses and procedures for application, approval, transfer, and management of subsidies for vocational training institutions and trainees across districts and counties; (ii) allow online registration, change, and cancellation for training courses and skills assessment and certification, online payment, and online training; (iii) host databases of vocational training institutions, trainees, employers, occupational classification, and financial transactions involved in vocational training subsidies; (iv) enable user management and authentication; and (v) provide access to information on vocational training institutions and courses, the quality and performance of the institutions and the courses, and labor market and vocational training analysis and forecast.

12. Output 1 will be developed in two phases. Phase 1 activities will be carried out during 4 months: (i) assess existing labor and social security information systems; (ii) review quality assurance mechanisms for vocational training institutions and training courses; (iii) review procedures for application, approval, transfer, and management of subsidies for vocational training institutions and trainees; (iv) collect and analyze available data on the labor market,<sup>9</sup> and vocational training and development of methodology, tools, and data to be integrated with

<sup>8</sup> ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015*. Manila.

<sup>9</sup> The existing online job placement system could be one source of data on the labor market (footnote 7).

the unified information management platform to conduct labor market and vocational training analysis and forecast; (v) visit countries with advanced labor and social security information systems; and (vi) conduct a preliminary study and design a unified information management platform that incorporates results of the first five activities. Phase 2 activities will (i) develop and test a unified information management platform and a user's manual (within 10 months); and (ii) train the municipal, district, and county BHRSSs, occupational skill testing authorities, and vocational training institutions on the use and operation of the information management platform.

**13. Output 2: Information and knowledge on the unified information management platform for vocational training disseminated.** The TA will support the dissemination of information and knowledge on the unified information management platform for vocational training to citizens, and other provinces and municipalities. Activities include (i) develop information materials on the unified information management platform for vocational training for citizens with consideration for the four categories of people targeted by the vocational training subsidies; and (ii) conduct a knowledge-sharing workshop on the information management platform, and the role of information and communication technology in developing integrated labor and social security systems.

14. The two outputs are based on the assumption that district and county BHRSSs are committed to using the information management platform. Other key assumptions are Chongqing Municipal BHRSS continues to be strongly committed to the information management platform and improvement of quality assurance mechanisms and procedures for vocational training subsidies, and willing to share information and experience. The key risks are policy changes with regard to vocational training subsidies; political risks, including leadership affecting project implementation; constraints on municipal, district, and county BHRSSs in terms of resources and other emerging priorities; and technical problems regarding data sharing and transfer.

### **C. Cost and Financing**

15. The TA is estimated to cost \$480,000, of which \$400,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources). The government will provide counterpart support in the form of counterpart staff, office space, servers, software licenses, maintenance, and other in-kind contributions. The cost estimates and financing plan is in Appendix 2.

### **D. Implementation Arrangements**

16. The Chongqing Municipal Bureau of Finance (CMBF) will be the executing agency, overseeing coordination of different bureaus and divisions involved in vocational training and related services. The Chongqing Municipal BHRSS will be the implementing agency and assume overall responsibility for TA activities in cooperation with other bureaus and divisions. A project steering committee, chaired by the deputy director of the Chongqing Municipal BHRSS and comprising representatives from the CMBF, Chongqing Municipal BHRSS, and Human Resources and Social Security Information Center, will be established to provide overall guidance and support for TA implementation. The Chongqing Municipal BHRSS and Human Resource and Social Security Information Center will be responsible for maintaining the information management platform for vocational training under the Golden Social Security Project. The TA will be implemented from 15 June 2014 to 15 December 2015.



17. Procurement, if any, will be in accordance with ADB's Procurement Guidelines (2013, as amended from time to time). Goods procured will be turned over to the CMBF upon completion of the TA. An advance payment facility will be established at the CMBF for the expense of training and workshops, international study visits, and miscellaneous administrative and support costs. All international study visits will be to ADB member countries. Proceeds of the TA will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

18. The TA will engage a consulting firm (national, 46.0 person-months) to provide one functional lead and seven information and communication technology specialists to develop the information management platform. The consulting firm will be selected using quality- and cost-based selection with a quality–cost ratio of 80:20. A national firm can be justified on the grounds that the estimated contract amount is small and unattractive to international firms, and national firms are available in the market for similar information system development. In addition, two international consultants for a total of 3.0 person-months and three national consultants for a total of 9.5 person-months will be engaged on an individual basis to provide expertise in labor and social security policies and systems, vocational training fund management, vocational training quality assurance, and labor forecasting. This will be done in line with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The outline terms of reference for consultants are in Appendix 3.

19. The TA will be monitored and evaluated based on the implementation of activities and satisfactory delivery of outputs following the agreed timeline and budget. The main mechanism to monitor and assess the TA will be TA review missions. To support monitoring and evaluation, the consultants will submit an inception report, a midterm report, a draft final report, and a final report in English and Chinese to the CMBF, the implementing agency, and ADB.

#### **IV. THE PRESIDENT'S DECISION**

20. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$400,000 on a grant basis to the Government of the People's Republic of China for Chongqing Vocational Training Information Management Platform Development, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b> Enhanced equity, effectiveness, and efficiency of vocational training and subsidies provided in Chongqing</p>	<p>Percentage of those who receive vocational training among the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates who have not attended higher education increased from 6% in 2012 to 10% in 2018</p> <p>Percentage of trainees who obtain occupational skills certificates increased from 82% in 2012 to 88% in 2018</p>	<p>Implementing agency's report and statistics available on the information management platform</p> <p>Implementing agency's report and statistics available on the information management platform</p>	<p><b>Assumptions</b> Government continues to provide the same level of subsidies for vocational training, especially for the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates</p> <p>No radical changes are made in the occupational skills assessment and certification system</p> <p><b>Risk</b> Political and economic factors impact the government's ability to maintain adequate support for vocational training</p>
<p><b>Outcome</b> Improved planning and management system of vocational training and subsidies provided for it</p>	<p>A unified information management platform for vocational training is available to all municipal, district, and county bureaus of human resources and social security (BHRSSs); occupational skill testing authorities; and vocational training institutions in the Chongqing municipality by 2016</p>	<p>Implementing agency's report and statistics available on the information management platform</p>	<p><b>Assumption</b> District and county BHRSSs are committed to using the information management platform</p> <p><b>Risk</b> Policy changes impact vocational training subsidies</p>
<p><b>Outputs</b> 1. Unified information management platform for vocational training developed</p>	<p>Recommendations for improved quality assurance mechanisms for vocational training institutions and training courses submitted to Chongqing Municipal BHRSS for consideration by month 4</p> <p>Recommendations for improved procedures for application, review and approval, transfer, and</p>	<p>Workshop feedback and consultant report</p> <p>Workshop feedback and consultant report</p>	<p><b>Assumption</b> Chongqing Municipal BHRSS continues to be committed to the information management platform and the improvement of quality assurance mechanisms and procedures for vocational training subsidies</p> <p><b>Risks</b> Capacity of municipal, district, and county BHRSSs is constrained by resources and other emerging priorities</p>

<b>Design Summary</b>	<b>Performance Targets and Indicators with Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
	<p>management of vocational training subsidies submitted to Chongqing Municipal BHRSS for consideration by month 4</p> <p>Methodology, tools, and data developed to be integrated with the unified information management platform to conduct labor market and vocational training analysis and forecast by month 4</p> <p>Unified information management platform for vocational training operating by month 14</p> <p>1,000 users including staff of municipal, district, and county BHRSSs; occupational skills testing authorities; and vocational training institutions trained on the use and operation of the unified information management platform by month 17</p>	<p>Workshop feedback and consultant report</p> <p>Workshop feedback, consultant and implementing agency reports, and website</p> <p>Workshop feedback, and consultant and implementing agency reports</p>	<p>Problems with data sharing and transfer affect the use and operation of the unified management platform</p>
<p>2. Information and knowledge on the unified information management platform for vocational training disseminated</p>	<p>Information materials on the unified information management platform for vocational training prepared for citizens with consideration for the four categories of people targeted by vocational training subsidies<sup>a</sup> by month 17</p> <p>Knowledge-sharing workshop on the unified information management platform for vocational training organized by month 18</p>	<p>Consultant report including the information material</p> <p>Implementing agency report</p>	<p><b>Assumption</b> Chongqing Municipal BHRSS is willing to share the information and experience on the information management platform</p> <p><b>Risk</b> Political risks, including change in leadership, affect project implementation</p>

<p><b>Activities with Milestones</b></p> <p><b>1. Unified information management platform for vocational training developed</b></p> <p>1.1 Review quality assurance mechanisms for vocational training institutions and training courses across districts and counties, and identify data and information needs for improved external quality evaluation and licensing and accreditation procedures, criteria, and methods for vocational training institutions and training courses (months 2–4)</p> <p>1.2 Review procedures for application, review and approval, transfer, and management of vocational training subsidies for vocational training institutions and trainees, and identify data and information needs for the improved procedures (months 2–4)</p> <p>1.3 Organize an international study visit to countries that have advanced labor and social security information systems (month 2)</p> <p>1.4 Collect and analyze available data on the labor market and vocational training; develop methodology, tools, and data to be integrated with the unified information management platform to conduct labor market and vocational training analysis and forecast (months 2–4)</p> <p>1.5 Finalize system requirement specifications and system design document of a unified information management platform for vocational training by incorporating the results of the reviews and the analysis (months 2–4)</p> <p>1.6 Develop a unified information management platform for vocational training (months 5–13)</p> <p>1.7 Assess training needs on the use and operation of the unified information management platform for vocational training, and prepare training plans and materials (months 12–13)</p> <p>1.8 Conduct training on the use and operation of the unified information management platform (months 14–16)</p> <p><b>2. Information and knowledge on the unified information management platform for vocational training disseminated</b></p> <p>2.1 Prepare information materials on the unified information management platform for vocational training for citizens with consideration for the four categories of people targeted by vocational training subsidies (months 13–16)</p> <p>2.2 Organize a knowledge-sharing workshop on the unified information management platform for vocational training (month 17)</p>	<p><b>Inputs</b></p> <p><b>ADB (TASF-other sources): \$400,000</b></p> <p>Note: The government will provide counterpart support in the form of counterpart staff, office space, servers, software licenses, maintenance, and other in-kind contributions.</p>
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<sup>a</sup> The four categories of people targeted by vocational training subsidies include the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates who have not attended higher education.

Source: Asian Development Bank.

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Amount
<b>Asian Development Bank<sup>a</sup></b>	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	57.7
ii. National consultants	208.9
b. International and local travel	18.0
c. Reports and communications	15.0
2. Training, seminars, and conferences	
a. Training and workshops <sup>b,d</sup>	35.0
b. International study visit <sup>d</sup>	30.0
3. Miscellaneous administration and support costs <sup>c,d</sup>	5.0
4. Contingencies	30.4
<b>Total</b>	<b>400.0</b>

Note: The technical assistance (TA) is estimated to cost \$480,000, of which contributions from the Asian Development Bank are presented in the table above. The government will provide counterpart support in the form of counterpart staff, office space, servers, software licenses, maintenance, and other in-kind contributions. The value of government contribution is estimated to account for 20% of the total TA cost.

<sup>a</sup> Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources).

<sup>b</sup> Training on the use and operation of the unified information management platform for 1,000 users including staff of the municipal, district, and county bureaus of human resources and social security, occupational skill testing authorities, and vocational training institutions; and review and knowledge-sharing workshops.

<sup>c</sup> Administrative and support costs include cost of translation and printing.

<sup>d</sup> Disbursed to the Chongqing Municipal Bureau of Finance through advance payment facility.

Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. A total of 3.0 person-months of international and 55.5 person-months of national consulting services will be required to ensure the effective implementation of the technical assistance (TA). Two packages are proposed: (i) one consulting firm contract for 46.0 person-months (quality- and cost-based selection with a quality–cost ratio of 80:20); and (ii) five individual consulting contracts (two international, 1.5 person-months each; one national, 3.5 person-months; and three national, 2.0 person-months each). All the consultants will be recruited according to the Asian Development Bank’s (ADB) Guidelines on the Use of Consultants (2013, as amended from time to time).

### A. Consulting Firm

2. The consulting firm will develop a unified information management platform for vocational training with the following functions: (i) standardize quality assurance mechanisms for vocational training institutions, and training courses and procedures for application, approval, transfer, and management of subsidies for vocational training institutions and trainees across districts and counties; (ii) allow online registration, change, and cancellation for training courses and skills assessment and certification, online payment, and online training; (iii) host databases of vocational training institutions, trainees, employers, occupational classification, and financial transactions involved in vocational training subsidies; (iv) enable user management and authentication; and (v) provide access to information on vocational training institutions and courses, the quality and performance of the institutions and the courses, and labor market and vocational training analysis and forecast. The platform will be integrated with the existing social security card system, occupational skills assessment and certification system, and job placement system.

3. The consulting firm is expected to work in collaboration with the labor and social security specialist, the vocational training quality assurance specialists, the training funds management specialist, and the labor forecasting specialists to be engaged on an individual basis; and to incorporate in the design of the unified information management platform the results of the following work of the specialists: (i) assessment of existing labor and social security information systems; (ii) review of quality assurance mechanisms for vocational training institutions and training courses; (iii) review of procedures for application, approval, transfer, and management of subsidies for vocational training institutions and trainees; and (iv) analysis of available labor market data.

4. The consulting firm will be engaged on a lump sum basis, payable upon completion of the following key deliverables:

- (i) process documentation and system design for the information management platform for vocational training (system requirement specifications and system design document) to be included in the inception report in Chinese and English;
- (ii) information management platform developed and customized, with the process recorded in the interim report in Chinese and English;
- (iii) software testing, including security test, user acceptance test, and operational acceptance test;
- (iv) user manuals and training of trainers; and
- (v) final report in Chinese and English.

5. **Vocational training information management system specialist—team leader** (national, 9.0 person-months). The specialist will have a master’s degree in computer science or

any related field, and substantial experience in designing and coordinating development of information management systems for government agencies, preferably in the fields of vocational training, labor, and social security. Proficiency in English is required. The specialist will undertake the following tasks:

- (i) establish workplans, and manage and coordinate the team of information and communication technology (ICT) specialists and their outputs;
- (ii) lead a study of business processes and functional requirements, and produce system requirement specifications and a system design document;
- (iii) lead the team of ICT specialists in developing and testing the information management platform;
- (iv) lead the preparation of user manuals;
- (v) design and conduct train-the-trainer sessions;
- (vi) act as a resource person at knowledge-sharing workshops; and
- (vii) produce monthly progress reports and milestone reports.

6. The consulting firm will recruit the following ICT specialists:

- (i) **One database architect** (national, 4 person-months, intermittent). The specialist will have a graduate degree in computer science and at least 3 years of database design and development. Knowledge of English is required. The specialist will design databases to support business applications ensuring system scalability, security, performance, and reliability; create and enforce database development standards; and take part in user manual preparation and user training.
- (ii) **Three developers** (national, 6 person-months each, intermittent). Each specialist will have a graduate degree in computer science and at least 3 years of coding and software development. Knowledge of English is required. The specialists will produce detailed specifications, write the program codes, and take part in user manual preparation and user training.
- (iii) **Three functional analysts and testers** (national, 5 person-months each, intermittent). Each specialist will have a graduate degree in computer science and at least 3 years of experience in business processes, functional analysis, design development, and software testing. Knowledge of English is required. The specialists will analyze business processes and define user needs; write functional files; conduct software testing (including security test, user acceptance test, and operational acceptance test); and take part in user manual preparation and user training.

## B. Individual Consultants

7. **Labor and social security specialist** (national, 3.5 person-months). The labor and social security specialist will have (i) at least a master's degree in public administration and management or any related field, preferably with a focus on labor and social security policies and systems; (ii) at least 7 years experience conducting research and advising governments on labor (i.e., vocational training and employment services) and social security policies, delivery mechanisms, and national and/or local management information systems; (iii) good writing skills; and (iv) proficiency in oral and written English. The specialist will work with the Chongqing Municipal Bureau of Human Resources and Social Security (BHRSS) and the consulting firm, which will develop the unified information management platform for vocational training, to (i) assess the existing social security card system, skills assessment and certification system, and job placement system already accessible online with a view to advising how the unified information management platform for vocational training can best be integrated with the existing systems in terms of data sharing and use, and prepare a report in Chinese and English; (ii) work

with the consulting firm to ensure that recommendations of the report are incorporated in the design of the unified information management platform; (iii) advise and assist the Chongqing Municipal BHRSS in arranging an international study visit; (iv) prepare information materials on the unified information management platform for vocational training for citizens with consideration for people targeted by vocational training subsidies (i.e., the unemployed, migrant workers, university and college graduates, and junior and senior secondary graduates who have not attended higher education); (v) prepare a report and presentation on the role of ICT in developing integrated labor and social security systems; and (vi) act as a resource person at training and knowledge-sharing workshops.

8. **Vocational training quality assurance specialists** (international, 1.5 person-months; national, 2.0 person-months). The vocational training quality assurance specialists will have at least a master's degree in education, training management, public administration, or relevant disciplines; and at least 7 years of experience in reviewing, developing, and implementing quality assurance mechanisms for vocational training institutions and training courses. Proficiency in oral and written English is required. The expert will work with the Chongqing Municipal BHRSS and the consulting firm, which will develop the unified information management platform for vocational training, to carry out the following tasks: (i) review the current external quality evaluation and licensing and accreditation procedures, criteria, and methods for vocational training institutions and training courses being used by the municipal, district, and county BHRSSs; (ii) review the current internal quality control mechanisms at vocational training institutions; (iii) prepare a report of the reviews in Chinese and English, including recommendations for improving external quality evaluation and licensing and accreditation procedures, criteria, and methods for vocational training institutions and training courses, with the use and operation of the unified information management platform for vocational training; (iv) work with the consulting firm to ensure that recommendations of the report are incorporated in the design of the unified information management platform; and (v) act as a resource person at training and knowledge-sharing workshops.

9. **Training funds management specialist** (national, 2.0 person-months). The training funds management specialist will have at least a master's degree in financial management; and at least 7 years of experience in reviewing, developing, and implementing procedures and institutional arrangements for application, review and approval, transfer, and management of public sector funds, preferably related to vocational training. Proficiency in oral and written English is required. The expert will work with the Chongqing Municipal BHRSS and the consulting firm, which will develop the unified information management platform for vocational training, to (i) review current procedures and institutional arrangements for application, review and approval, transfer, and management of subsidies for vocational training institutions and trainees being used by the municipal, district, and county BHRSSs; (ii) review the current practice of financial management and reporting, and internal control mechanisms at vocational training institutions; (iii) prepare a report of the reviews in Chinese and English, including recommendations for improving the procedures and institutional arrangements for application, review and approval, transfer, and management of subsidies for vocational training institutions and trainees; (iv) work with the consulting firm to ensure that recommendations of the report are incorporated in the design of the unified information management platform; and (v) act as a resource person at training and knowledge-sharing workshops.

10. **Labor forecasting specialists** (international, 1.5 person-months; national, 2.0 person-months). The labor forecasting specialists will have at least a master's degree in economics, statistics, or relevant disciplines; and demonstrated experience in conducting labor forecast analysis in developed and developing economies. Proficiency in oral and written English is



required. The expert will work with the Chongqing Municipal BHRSS and the consulting firm, which will develop the unified information management platform for vocational training, to (i) review available data on the labor market by identifying sources of data such as the existing online job placement system; (ii) review policy and strategy documents and plans of the central and Chongqing municipal governments; (iii) review available data on vocational training; (iv) prepare a report of the reviews in Chinese and English, including methodology, tools, and data to conduct labor market and vocational training analysis and forecast; (v) work with the consulting firm to ensure that the methodology, tools, and data to conduct labor market and vocational training analysis and forecast are incorporated in the design of the unified information management platform; (vi) prepare a report template of labor market and vocational training analysis and forecast in Chongqing Municipality in Chinese and English; (vii) prepare training materials on labor forecast analysis; and (viii) act as a resource person at training and knowledge-sharing workshops.