No. 0213

Social Protection Discussion Paper Series

Social Protection @ Your Fingertips

Using Information & Communications Technologies in Social Protection

Knut Leipold

May 2002

Social Protection Unit

Human Development Network

The World Bank

For free copies of this paper, please contact the Social Protection Advisory Service, The World Bank, 1818 H Street, N.W., MSN G8-802, Washington, D.C. 20433 USA. Telephone: (202) 458-5267, Fax: (202) 614-0471, E-mail: socialprotection@worldbank.org. Or visit the Social Protection website at http://www.worldbank.org/sp.

Social Protection @ Your Fingertips

Using Information & Communications Technologies in Social Protection

Knut Leipold

May 2002

Executive Summary

At the beginning of the 21st century, worldwide spending in Information & Communications Technology (ICT) has passed the threshold of US$ 2 trillions. In this context, ICT spending in low- and middle-income countries has grown faster than in the developed countries over the recent years. The World Bank has raised the awareness of the importance of using ICT for development and some 80 % of Bank-financed projects include ICT components throughout all regions and sectors including the Social Protection sector.

ICT offers the potential of moving from the traditional automation of existing processes and organizational structures of Social Protection agencies to transformation, i.e. aligning processes, organizational structures, and new technologies along the goals of social policies. Innovative approaches may also include the use of integrated ICT systems across government agencies and the customer-centered delivery of social services through electronic channels. Using the potential of ICT can provide value added in the process of Social Risk Management.

The costs and benefits of major ICT projects may be analyzed for each project phase in order to verify the overall value and decide for the appropriate ICT system. While costs and benefits may be easily identified, they can not always be measured in terms of money value. However, non-measurable costs/benefits may have an impact on managing social risk and, therefore, be evaluated accordingly.

Professional design and implementation is the basis of successful operation. Major ICT projects in Social Protection have experienced considerable overruns in costs and time and lack of quality. Lessons learned include some common and specific key success factors in the context of ICT project design and implementation.

Given the expected increases of ICT investments, particularly in low- and middle-income countries, the World Bank in general and the Social Protection sector in particular may contribute to bridging the Digital Divide through encouraging developing countries to use ICT. To this end, it is important to provide financial support and technical assistance, leverage the potential of ICT for social programs and service delivery, minimize the costs and maximize the benefits from ICT investments, and create the necessary environments for successful ICT implementation.

Social Protection @ Your Fingertips

Using Information & Communications Technologies in Social Protection

Knut Leipold[*]

I. Introduction

At the beginning of the 21st century, the world is characterized by technological innovations at an exponentially increasing pace. ICT has become a driving force of the transformation process towards the knowledge-based information society with a growing impact on political, economic, and social development. Although this technology-driven trend may offer new opportunities in all spheres of our life, it may also imply the danger of increasing the Digital Divide within and between countries.

Besides the Digital Divide, there is still a lot of poverty all over the world. While Social Protection (SP) programs may help to manage social risk in the fight against poverty, the use of ICT can contribute to bridging the Digital Divide. What about the synergy of the two: using ICT in SP?

The primer is intended to give an answer to this question and provide an overview about the role of ICT in the SP area. Sharing the experience of some major ICT projects, it may help task teams as well as SP agencies in low- and middle-income countries to better understand the trends and impact, costs and benefits, and project design and implementation of major ICT investments for social program delivery. In addition, the paper includes some templates and guidelines which may be used in the context of major ICT projects for the delivery of SP programs.

Section II includes some facts and figures in terms of ICT spending in the world and describes the situation of projects with major ICT components at the World Bank in general and the Bank's SP sector in particular. The following part, Section III, points out the trends and opportunities of using ICT in SP reflecting some innovative approaches. Section IV gives an overview about costs and benefits of ICT in SP including some general and specific

[*] The views expressed here are those of the author and should not be attributed to the World Bank or any of its member countries.

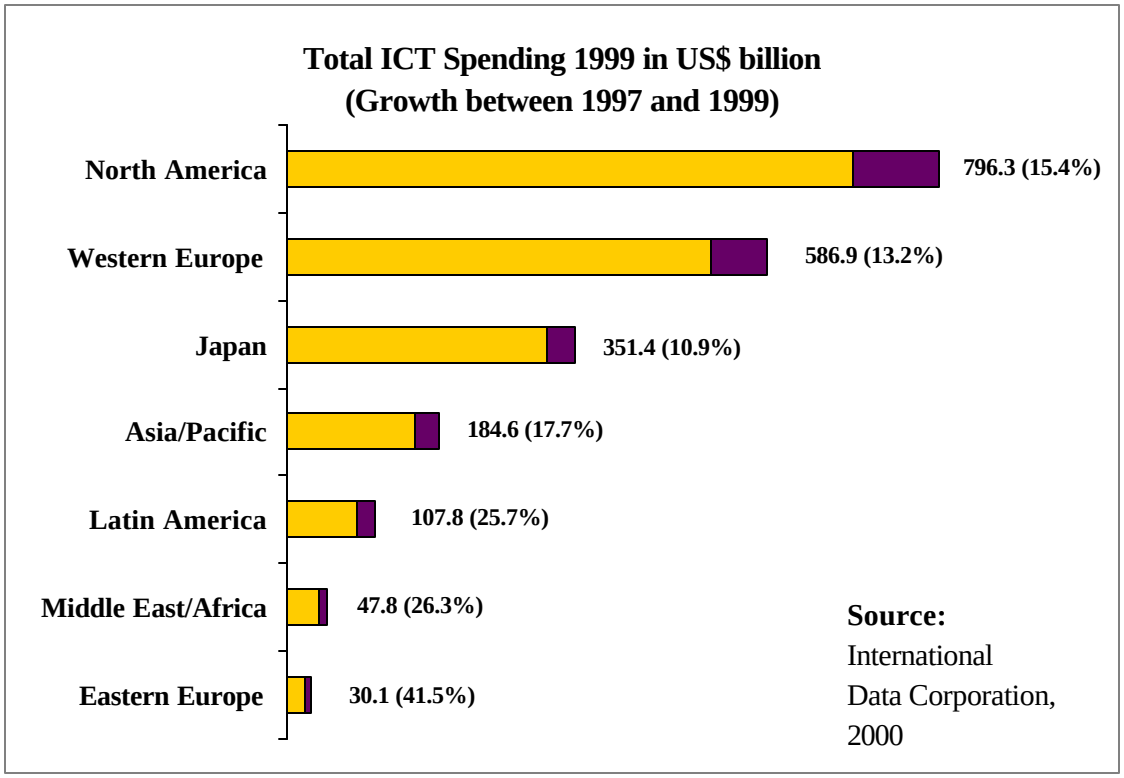
examples. Section V provides several key success factors for the professional design and implementation of major ICT projects. Some lessons drawn from these different sections are summarized as recommendations in Section VI. The annex includes specific information and examples related to sections II to V.

II. Facts and Figures

The World

The following basic forecasts of International Data Corporation reflect the important role of ICT all over the world. Having reached some US$ 2 trillion in 2000, ICT spending[1] will surpass the US$ 3 trillion mark in 2004. While North America and Western Europe are the world's largest ICT markets in terms of total spending, the regions with the smallest base of ICT are heading in terms of growth in ICT spending. Figure 1 shows that Latin America

Figure 1: ICT Spending by Regions in 1999 with Growth in ICT Spending between 1997 and 1999



[1] ICT refers to computer hardware, software, services (e.g. consulting, training, integration), telecommunications hardware and services, office equipment, and IT employee salaries.

and Eastern Europe ICT spending grew 42 percent between 1997 and 1999 compared with 15 and 13 percent in North America and Western Europe respectively.

The accelerated technological development and huge amounts of ICT spending in North America, Western Europe, and Japan involve the danger of increasing the gap between developed and developing countries. To this end, low- and middle-income countries may be well advised to sustain their fast growth in terms of ICT spending in order to bridge the digital divide by using new and modern technologies in their development process. International financial institutions, such as the World Bank, may encourage these efforts and offer financial support for projects with major ICT components in low- and middle-income countries.

The World Bank

It is not surprising that the World Bank considers the use of ICT as one of the key factors in achieving its mission of poverty reduction by helping the poorer countries to develop their political, economic, and social systems. Box 1 includes some examples of how the Bank's President, James D. Wolfensohn, points out the importance of ICT for Development.

Box 1: James D. Wolfensohn about the importance of ICT for Development

"And it is important for all countries that the Bank takes a more strategic approach to the provision of global public goods and supports the use of modern information technology."

(Joint Statement of the IMF and the World Bank, Sep. 5, 2000)

"And finally, the fact that we are not only in a new millennium, we are in a new age in which communications becomes critical. The age of technology and internet technology is perhaps the single most visible exemplification of globalization. It is used by the people who organize rallies, it is used by us, and it needs to be used by countries in development. And so we have a new focus to assist us in our development plans, and that, too, was discussed."

(Annual Meetings, Prague, Sep. 2000)

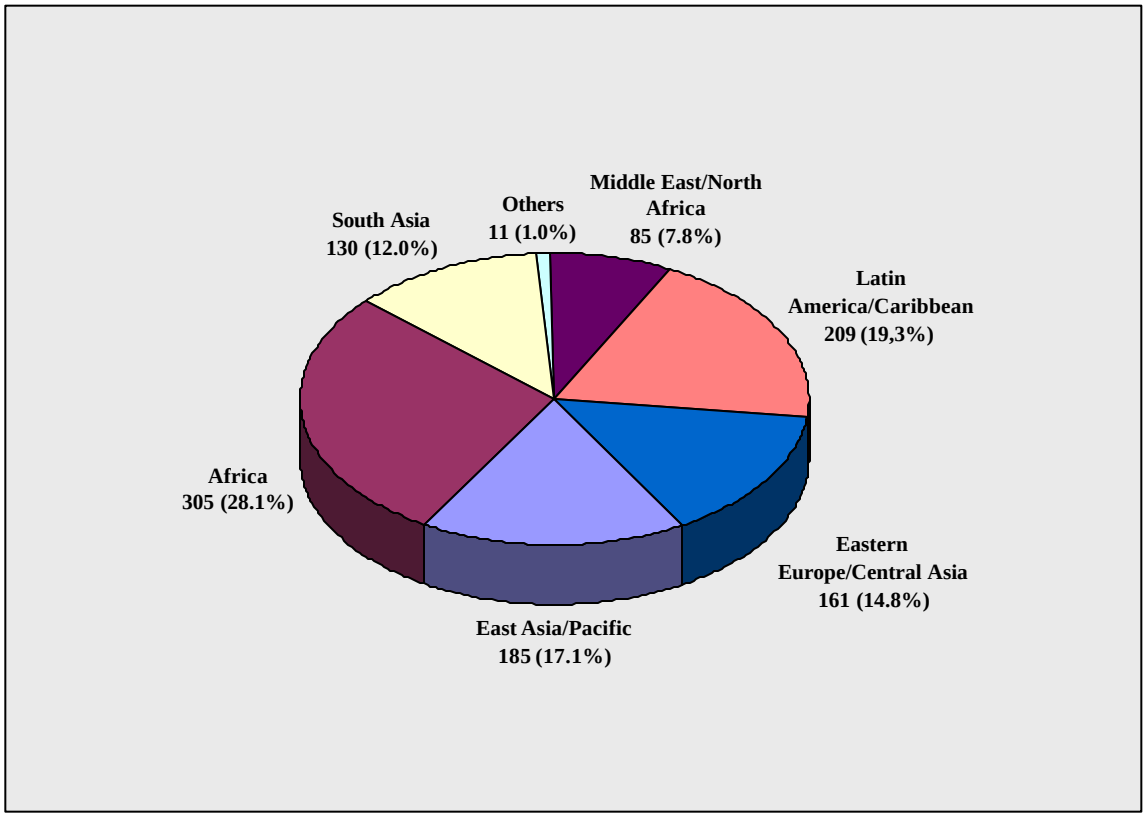
"We must work toward the day when through the internet, through distance learning, through cellular phones and wind-up radios, the village elder or the aspiring student will have access to the same information as the finance minister."

(Address to the Board of Governors, Prague, Sep. 26, 2000)

Some 80 % of projects financed by the World Bank are estimated to include ICT components. The latest inventory of Bank-financed projects with major ICT components identifies 1.086 projects across different sectors. The total funding of ICT components as part of Bank-financed projects in recent years is estimated to have averaged more than US$ 1 billion per year, with about 85% for the purchase of ICT goods and 15% for consulting services.

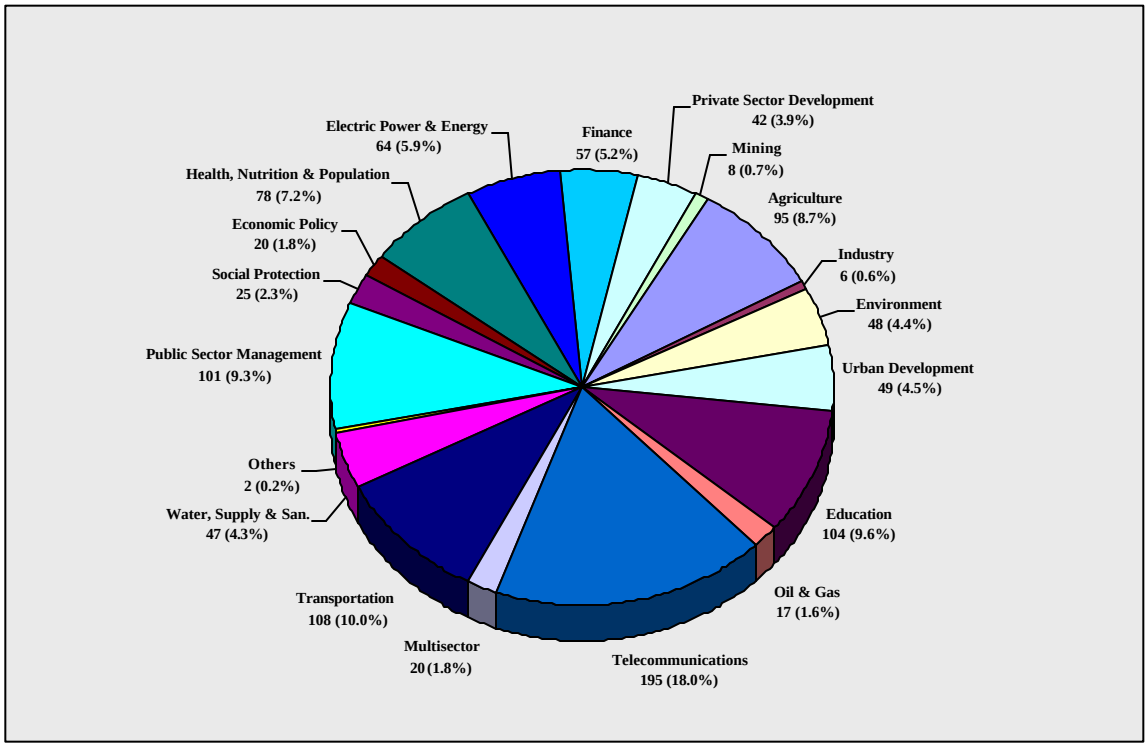
While no detailed evidence is available on the total amount of ICT spending by regions and sectors, the numbers of projects with ICT components according to the Core Database of the Bank's Environmentally and Socially Sustainable Development Network (ESSD) show Africa as the leading region with 305 (28%) over the recent ten years, followed by Latin America/Caribbean with 209 (19.3%). Fewer projects with ICT components were implemented in the Middle East/North Africa (85 – 7.8%) and South Asia (130 – 12%) regions. Figure 3 represents all the projects by regions.

Figure 2: Number of Bank-Financed Projects with ICT Components by Regions



Telecommunications (195 – 18.0%), Transportation (108 - 10%) and Education (104 - 9.6%) are the leading sectors in terms of projects with ICT components, whereas Industry (6 – 0.6%), Mining (8 – 0.7%), and Oil&Gas (17 – 1.6%) are the sectors with the fewest ICT-related projects. Figure 3 shows the 1.086 Bank-financed projects with ICT components by sectors.

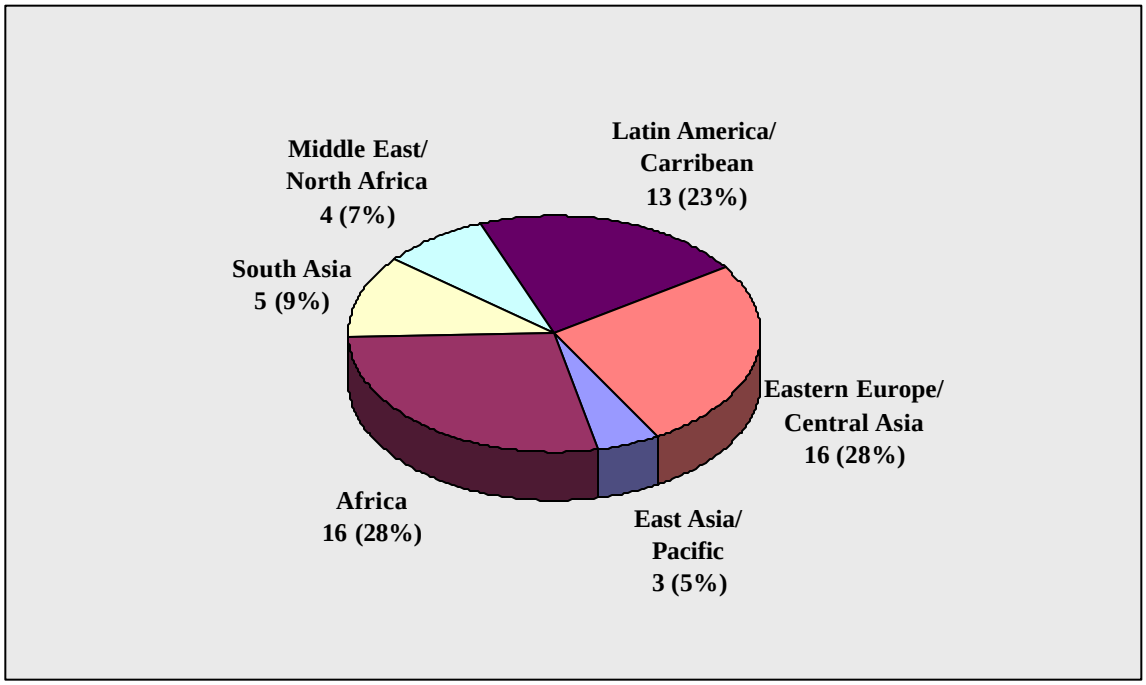
Figure 3: Number of Bank-Financed Projects with ICT Components by Sectors



The Social Protection Sector

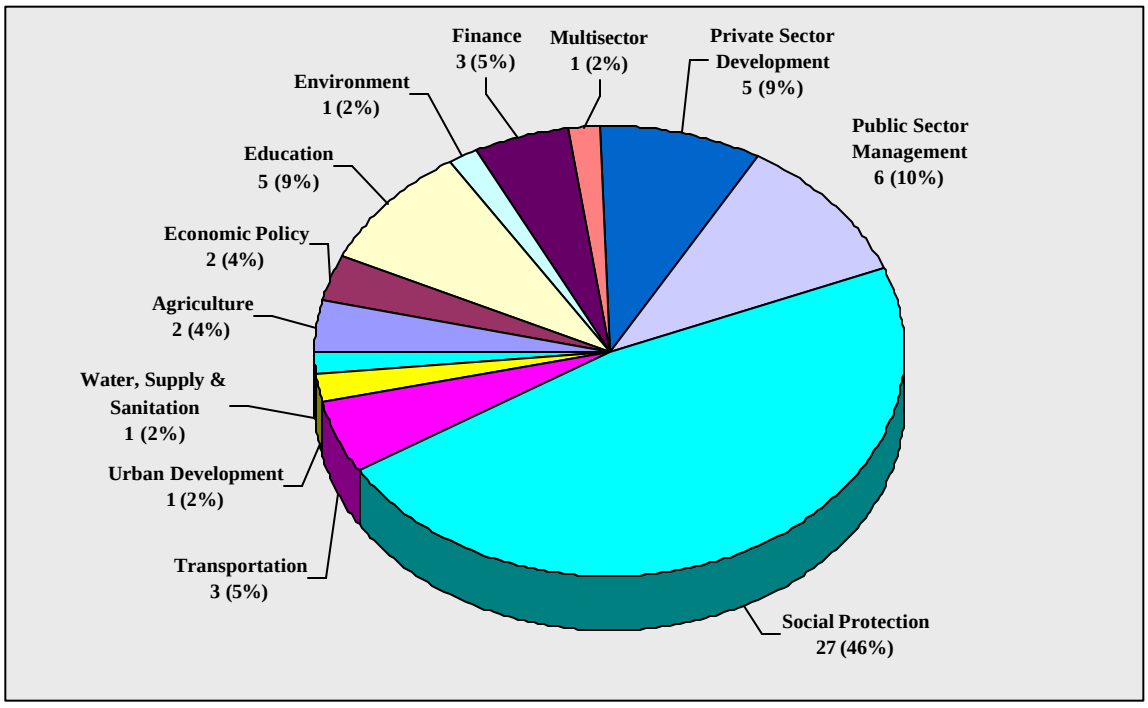
According to the ESSD Core Database, there is a total of 319 Bank-financed projects under Social Protection or under other sectors but with major Social Protection components over the last ten years. Cross-matching these 319 projects with the 1.086 ICT-related projects results in a total of 57 projects with major Social Protection and ICT components. While these projects are listed in Annex 1.1, figure 4 shows their breakdown by regions.

Figure 4: Number of Bank-Financed Projects with SP and ICT Components by Regions



More than double of the 57 projects with SP and ICT components are not listed under the Sector Group Social Protection but under various different Sector Groups (see Figure 5).

Figure 5: Number of Bank-Financed Projects with Social Protection and ICT Components by Sectors



As the ESSD Core Database includes the total Project Loan Amount of the 1,086 ICT-related projects (some 80 billion US$) without indicating the portion of the ICT components, there is no evidence about the total spending on ICT in the context of Bank-financed projects in the Social Protection area. Some of these projects include ICT investments of more than 50 % of the Project Loan Amount, while others have a rather small ICT component in financial terms.

Box 2: Difference in ICT Spending as Compared to the Total Project Loan Amount

With a total Project Loan Amount of US$ 100 million, the Polish Employment and Training Project spent some US$ 60 million for Information and Communications Technology. Another example is the Hungarian Pensions Administration and Health Project with a Project Loan Amount of US$ 132 compared to some US$ 20 million ICT spending for the pension recording system.

Source: International Conference on Information Technology in Social Protection, Poland, 2000

The tendency in terms of Bank-financed projects in the Social Protection area with major ICT components is rising. The World Bank as well as the borrowing countries are aware of the increasingly important role of ICT at a time when technological innovations at a high speed offer new opportunities for development. Thus, the current 18% of projects with major SP and ICT components compared to all Social Protection projects are supposed to grow in the future. The documentation of projects with major ICT components may be improved by collecting information of the total ICT spending in money value by project, sector, and region. Annex 1.2 provides a sample template for project references.

III. Impact and Trends

At the beginning of the 21th century, the world is characterized by political, economic, and social change. ICT offers a lot of potential in the context of adjusting SP systems to meet the needs of a changing world. To this end, ICT may have a critical impact on paving the way for shifting the paradigm from automation to transformation, not only in the private but also in the public sector, including SP agencies. New technologies with short innovation cycles enable these agencies to provide integrated social services, thus contributing to the management of social risk in general and to more effective public

interventions as one Social Risk Management (SRM) arrangement in particular. This chapter describes the impact and trends of ICT in the context of the delivery of SP programs and SRM.

Opportunities and Challenges

On the way to an information society, where knowledge and information become their own agent of production, new and intelligent approaches to solving problems are called for, with information and communications technology playing a key role. What are the opportunities and challenges of using ICT for the delivery of social programs and services? This question can be answered from two perspectives: ICT supports the administrative and operational processes of SP agencies and ICT drives institutional development towards business process re-engineering.

ICT has always been used to support processes in SP agencies. Huge amounts of information can be collected, stored, processed and disseminated with the help of automated systems consisting of computers, networks and databases. Personal data of job-seekers, contributors to and/or beneficiaries of unemployment benefits or old-age insurance can be put into a database via PC. Computer-based matching of job offers and demands, automated retrieving and archiving of individual work histories and contribution records, and modern multimedia systems for job counseling and vocational training are other examples of automatic information handling.

Also, internal institutional business processes, such as human resources, asset management, accounting, and procurement, may be supported by automated office systems. Electronic mailing systems are much more effective than writing documents manually and sending them to other staff by in-house mail.

The automation of processes usually results in better operational performance of SP agencies and improved quality of their program delivery. However, simply automate existing processes may not explore all the potential ICT offers today. The challenge of ICT is the transformation of business processes. To this end, ICT may not only support but also drive business processes.

Filing an unemployment insurance (UI) claim traditionally means that the unemployed person has to go to a local labor office and spend considerable time there being sent around to many offices and asked to do a lot of paperwork. The UI claim filing process is driven by the organizational structure of the labor office. The automation of this process may result in better operational performance and service quality with time and cost savings. However, the potential of modern call centers or Internet technology allows the transformation from in-person to remote UI claim filing. In this way, the UI claim filing process may be completely re-engineered driven by the potential of ICT for improved customer services rather than the organizational structure of the labor agency. Boxes 3 and 4 show the difference between the automation (Poland) and transformation (USA) of the UI claim filing process.

Box 3: Automation of UI Claim Filing in Poland

Automation

The Employment Promotion and Services Project in Poland is a good example in terms of the automation of traditional business processes. Part of this project was the Automation of Labor and Social Welfare Offices (ALSO project). ALSO included the automation of some 450 local labor offices all over Poland. As a result, the process of UI claim filing is now supported by ICT including the entry or update of personal data, check and approval of eligibility, calculation of benefits, and payment. The claimant, however, still has to complete and sign a paper form. The personal data will then be entered or updated in the computer system by office staff. In other words, it is still the traditional process of registration through in-person contact which is just supported by the computer system. The paperwork has to be done due to legal regulations requiring the signature of the claimant.

Source: Ministry of Labor and Social Policy of Poland, 1999

Box 4: Transformation of UI Claim Filing in Wisconsin, USA

Transformation

The implementation of a remote initial UI claims system in Wisconsin, USA, show the impact innovative technology may have in the context of Social Protection programs. Modern call-center technology, such as automated call distributors (ACD) and advanced interactive voice response (IVR), are used in order to complete the UI claim filing process without a visit to a local office. The traditional in-person UI claim filing was transformed in remote UI claim filing as follows: Wisconsin developed an involved IVR data collection script which attempts to collect all information that was practical over a telephone touch-tone keypad. As part of the IVR script, the claimant is asked to enter the driver's license number as a form of identification. The IVR system is connected to the State Department of Transportation (DOT) license database for on-line claimant verification. Once the claimant completes the IVR script, the call is transferred to the next available customer service representative (CSR). The CSR utilizes customized Graphical User Interface (GUI) software applications on the workstation which brings together data entered via the IVR, verification status from DOT, and claimant wage data that is downloaded from the wage files and benefits databases on the mainframe benefits system. The goal of the CSR is to review all data entered by the claimant and to ask questions that will establish the identity of the claimant. The CSR must then obtain additional data not collected by the IVR (e.g., claimant's address), verify previous employment, answer any questions asked, and, finally, close the call.

Source: Information Technology Support Center, USA, 1997

ICT as a driving force from automation to transformation may have a growing impact not only on business process re-engineering but also on the organizational re-structuring of the agencies. Taking the example of remote UI claim filing through call centers, the UI division of the responsible agency has to be restructured due to the requirements of a call center model. Integrated service delivery through one channel (see also chapter *Electronic Service Delivery*, pp. 16-20) is another example. The potential of ICT to integrate different applications, such as UI claim filing, vocational counseling, and job placement, may result in a re-organization of the labor agency from separate divisions for these services to a customer-friendly single point of contact.

In addition, ICT may have some major implications for the evaluation and redesign of SP programs. Information about different programs, such as social assistance, active labor programs, or alternative pension schemes, and their impact can be better collected, processed and distributed with the help of automated databases. To this end,

different programs may be evaluated on the basis of appropriate management information systems resulting in modifying or redesigning them to better target services and manage social risk. Innovative software applications, such as the Pension Reform Options Simulation Toolkit (PROST) of the World Bank, may be used for long-term projections on the basis of which policies may be defined or adjusted.

Box 5: The Pension Reform Options Simulation Toolkit of the World Bank

The World Bank's pension reform options simulation toolkit models pension contributions, entitlements, system revenues and system expenditures over a long time frame. The model is designed to promote informed policy-making, bridging the gap between quantitative and qualitative analysis of pension regimes. It is a flexible toolkit, easily adapted to a wide range of countries' circumstances. Modeling pensions can also assess different reforms, informing both policy-makers and the public about the impact of different reform options.

Source: Modeling Pension Reform, The World Bank, 2000

Finally, the use of innovative ICT may have an impact on policies beyond Social Protection. Particularly in the context of Social Insurance schemes, which are characterized by a lot of financial transactions in terms of contribution collection and benefit administration or payment, reliable and safe information systems including intelligent agents for checking compliance or eligibility may contribute to more transparency, thus avoiding fraud and corruption. As a result, increased revenues may be used to adjust the Social Insurance or Tax policy and lower contribution rates and income tax respectively. The Social Insurance Administration Project in Bulgaria is a good example in this context (see also section *IV. Costs and Benefits*, pp. 23-28).

Electronic Service Delivery

Social Programs include a lot of information and services to be delivered to people at social risk. Given the potential of ICT to move these information and services online and provide them through single electronic channels, there are three main issues with major implications for SP systems: integration, customer focus, and accessibility.

Integration

Traditionally, SP agencies are organized on the basis of function-oriented structures. Labor offices, for example, are often subdivided into several divisions, each of them offering a

special type of (social) service, such as registration, unemployment claim filing, job placement, career counseling, and retraining. With modern hardware, software applications, databases and networks, new opportunities of integration are emerging. Change the traditional structure into a process-oriented organization on the basis of an integrated ICT system may allow a SP agency to offer all the social services through one single interface to the citizens. To this end, vertical integration is the integration of all the social services provided by the same agency into on ICT system in order to deliver these services on a one-stop basis.

Box 6: Vertical Integration of the Turkish Employment Services

As part of the Turkish Employment and Training Project, the Automation of Local Labor Offices Project (ALLOP) is a good example of vertical integration. ALLOP includes an integrated ICT platform with a modular Software applications system. Thus, one employee is the contact partner for all requests of a citizen supported by an uniform application interface. This single-point-of-registration system is based on a common database for all of the following application modules:

- Labour Market Information Application System
- Document Tracking and Archiving Application System
- General Ledger Application System
- Human Resources Application System
- Job Career Counselling Services Application System
- Payroll Application System
- Unemployment Benefit Calculation Application System
- Active Labour Programme Application System
- Fixed Assets Application System
- Accounts Receivable Application System
- Systems Management, User Management

Source: International Conference on Information Technology in Social Protection, Poland, 2000

The integrated approach can be extended in the sense that social services not only of a specific but of all available agencies of a country‘ s SP system are provided through a one-stop center. With this type of horizontal integration, institutional staff in front-offices is trained to manage all the different social services for one individual with the help of integrated ICT systems. Horizontal integration may even go further and cover other governmental institutions. In this context, ICT systems can be used in citizen offices not only to look for a new job, calculate estimated pension payments or apply for social assistance but also to hand in the tax declaration, register a new car, issue a new passport or get other public information. In fact, this is what E-Government stands for. The delivery of social and other

services is no longer sector-driven, but ICT is shared in order to provide services in a customer-centered way.

Customer Focus

SP agencies process large volumes of information and routine transactions which may be moved online to a single electronic self-service channel. In this way, citizens do not have to wait any more in line during working hours in crowded public agencies. They have the free choice of when and where to access information and social services, such as printing out of contribution records or work history, applying for benefits, booking appointments with institutional staff, changing of personal data, matching job offers and wishes, skills-test programs, training courses, cash transactions, estimated pension calculation including retirement options, advice on filling gaps in social insurance coverage, eligibility for benefits, contents of individual accounts, available social programs, legal regulations, etc.

1. To this end, ICT can help to satisfy the requirements of the citizens. They may decide which information and services to get in real time thus feeling themselves as real customers. Moreover, this approach may result in political return. Citizens may acknowledge the SP agency as a modern service provider which, in turn, contributes to improving the image of the social policy of the country in general. Electronic delivery of social services around the needs of the citizens becomes an increasing part of E-Government strategies of more and more countries all over the world.

Box 7: Customer-Centered Delivery of Social Services in Australia and Canada

Australia and Canada are among the leading countries in terms of customer-centered service delivery. Their principle is to offer social services along the life-cycle of citizens rather than on the basis of governmental structures. This includes integration of sercvice delivery as well as accessibility for as many as possible citizens.

Annex 2 provides a short description of the Australian (Annex 2.1) and the Canadian (Annex 2.2) approach to social service delivery with customer focus. More information may be found under the respective websites http://www.centrelink.gov.au/ (Australia) and http://www.hrdc-drhc.gc.ca/common/home.shtml (Canada).

Source: International Conference on Information Technology in Social Protection, Poland, 2000

Accessibility

The basis for providing social information and services through electronic channels is a device at the user end. However, in most of the borrowing countries, only a happy few may be able to afford a PC for Internet access and be qualified to use the potential of ICT. The way to reach those at social risk may direct to diversification of the electronic delivery channels. Self-service kiosk-systems, interactive voice response, interactive television, screen phones, and the Internet are the main channels of electronic service delivery. Self-service kiosks can be installed in many public places. They allow real-time access to information via the Internet or other networks. Smart cards with PINs, fingerprint or other biometrics can ensure security of personal information or transactions. Call centers with toll-free numbers can help a lot to provide social services and Internet cafes are also public places where social services can be available electronically. In addition, all the platforms for electronic service delivery may offer a good potential for providing integrated governmental services.

Box 8: Improved Accessibility to Electronic Services in West Bank and Gaza

The Integrated Community Development Project in poor and marginalized areas of West Bank and Gaza aims at integrating information technology into community development through the provision of community centers with hardware and appropriate software to promote access and sharing of information in the areas of health, education, agriculture, and other sectors targeting local needs. These interventions could include computer based health and education information, assistance in productive sectors – such as prevailing crop prices, internet access in community libraries, etc.

Source: Integrated Community Development Project Concept Note, The World Bank, 2000

The integrated approach to the delivery of social services through one-stop electronic channels with customer focus and improved accessibility may be the basic pros of electronic service delivery. However, there may also be cons in the context of moving online social services and offering them through self-service devices in public places. The following table summarizes major advantages and disadvantages of electronic service delivery.

Table 1: Pros and Cons of Electronic Service Delivery

Pros	Cons
• Customer-friendly interfaces (one-stop-approach) • Simplification or elimination of routine and repetitive tasks • Improved accessibility (public places) • Active availability of services independent of place and time • Improved service quality (speed, actuality, contents) • Improved image of Social Protection (policy, program, agency) • Time savings (multiple services at same place, no waiting or extra leave) • Cost savings (resource sharing, public costs) • Self-learning by self-service devices (learning by doing)	• Confidentiality and privacy concerns • Intra- and inter-institutional consensus and coordination of sharing the resources • Uncertainty of agency staff about job loss • Social isolation • Misuse and fraud • Vandalism

ICT and Social Risk Management

The use of ICT to manage social risk may offer a variety of opportunities in terms of public interventions, integrated approaches to the SRM matrix, and social and economic development for fighting poverty. Complex ICT systems as part of E-commerce and E-government initiatives can encourage the electronic delivery of multiple social services to anyone at social risk at any place and any time.

Public interventions as part of the Social Risk Management (SRM) arrangements often include social programs provided by government agencies. Old-age insurance, unemployment insurance and active labor market programs with employment services, training and job creation may profit from well-organized agencies using complex ICT systems, such as Management Information Systems, or systems for automated contribution collection and benefit administration, telephone claim filing, and intelligent job-matching. In this way, social services can be offered with improved quality according to the needs of the demand side.

As ICT is becoming more and more a foundation of government-provided social services driving institutional development towards an integrated approach to service delivery,

ICT plays an increasing role in the context of the SRM matrix as well. This matrix combines arrangements (informal, market-based, public) and strategies (risk reduction, mitigation, coping) resulting in a ”multidimensional character of SRM” (Social Protection Sector Strategy, 2001). Integrated ICT systems may be used to increase the operational performance and provide a whole range of social services supporting the reduction, mitigation, and coping of social risk through one single interface. Public kiosk systems including applications for distance learning and job matching (both risk reduction), information delivery about social insurance programs (mitigation), or social assistance claim filing (risk coping) may be one example to deliver services through one interface and bring SRM strategies closer together.

Taking into account the fact that ICT-based service delivery through integrated channels offers the possibility to provide also market-based services, such as computer-based training, financial services of banks, or services of insurance companies, the role of ICT may even be a more driving one towards integration of market-based and government-based service delivery. In addition, community-based activities and services may be integrated into ICT systems in order to provide community-based SRM programs. To this end, the use of ICT can encourage the integrated delivery of an adequate mix of services across the whole SRM matrix.

Besides the growing importance of ICT in the context of public interventions and integration, ICT can be a critical factor for social and economic development in general. Given the short innovation cycles of ICT, the gap between the most advanced developed countries and the developing and transition countries is likely to get wider. There is only one way to avoid that the poorer countries fall further behind in the development process: ICT transfer into those countries, including the development of ICT skills.

In addition, integrated, complex ICT systems offer the potential to provide transparent information and are the basis of Management Information Systems using statistical data and projections for the modification of existing or the design and implementation of new SP programs.

In its Strategy Paper, the SP Sector of the World Bank summarizes the increasingly important role of ICT for the management of social risk.

Box 9: The Role of ICT in the Context of the World Bank's SP Strategy

Information and Communications Technology (ICT) is developing at a rapid pace and is a critical factor in social and economic development. ICT is also important for social risk management and social protection, and transferring the technology, management and know-how is crucial for three main reasons:

- Reducing the "digital divide"
- Improving the business process
- Redesigning social protection programs.

Financing social protection projects containing ICT components would increase the efficiency and effectiveness of service delivery, thus making it easier for vulnerable people to manage risk.

The World Bank will intensify its work with clients to incorporate appropriate information and communications technology into projects and review its procurement processes to facilitate implementation.

Source: Social Protection Sector Strategy, The World Bank, 2001, p. 35

IV. Costs and Benefits

This chapter may help SP agencies to get a better understanding of the nature of costs and benefits resulting from major ICT investments in the context of social program delivery. Whether an ICT system will be used for the first time or simply replace an old one, there should be clarity about the impact the new IT system may have on the SP agency and its program delivery in terms of costs and benefits. A Cost-Benefit-Analysis (CBA) may be a good methodology to find this out.

Before making the decision on a major ICT investment, alternative ICT systems may be compared to the existing system and to each other in case of more than one alternative. Alternatives may refer to an upgrade of existing ICT components or purchase and implementation of new equipment.

Box 10: Comparison of Alternative ICT Investments in Latvia

The Latvian Welfare Reform Project took into consideration three different alternatives: a modest upgrade of the existing IT system (option 1), a new IT system without full national network (option 2), a new IT system with full national network and new financial management system (option 3). This allowed the Latvian Ministry of Welfare to choose from four different systems (the existing plus the three alternative ones). After evaluation, it decided on option 3.

Source: Latvian Welfare Reform Project, Project Appraisal Document, World Bank, 1997, p. 31

While the CBA of alternative ICT systems prior to the project design and implementation basically contributes to taking a reasonable investment decision, it may be useful to perform another CBA during and/or after the mostly lengthy project implementation process. Thus, a CBA may help to support and justify decisions in the context of change management. Actual costs and benefits are assessed and documented versus the estimated ones. In case of discrepancies, corrective actions may be taken.

In addition, a post-implementation CBA, again by evaluating actual versus estimated costs and benefits with possible findings of discrepancies, may have some learning effects, e.g. how to evaluate costs and benefits or manage ICT more effectively in the future.

Besides assisting in making investment or corrective decisions and learning some lessons in terms of major IT investments, a CBA may contribute to justifying the use of public money for the implementation of a new ICT system. Taxpayers may be happy to know that the public money is spent in order to improve the efficiency of social program operations. Moreover, a CBA can provide financial projections which may have a tremendous impact on program delivery and policy analysis and decisions.

Box 11: Financial Projections in Bulgaria

The automation of the National Social Insurance System is the main component of the Bulgarian Social Insurance Administration Project. In the context of a cost-benefit analysis prior to the project implementation, revenue increases have been projected under a pessimistic and an optimistic fiscal impact scenario. According to the pessimistic scenario, the present* value of savings to the fund is BGL 14.5 billion by 2020. The increased revenues could be used to reduce the current* tax rate by 1.67 percentage points in 2004, which represents a reduction of 0.4 percentage points more than could be considered under current* operational policies. The more optimistic scenario projects the present* value of savings with BGL 141.5 billion by 2020. This would allow for a reduction in the tax rate of 3.5 percentage points by 2004 while continuing to building up a contingency reserve. By the end of the projection period in 2019, the effective tax rate could be reduced by 5.8 percentage points, even when a contingency reserve is created.

** basis of 1996*

Source: Social Insurance Administration Project, Staff Appraisal Report, 1996, pp. 73-74

Basically, a CBA includes identification, measurement, and evaluation of costs and benefits of the existing and/or all alternative ICT systems to be taken into consideration for an investment decision. As a prior CBA usually is performed on the basis of future costs and

benefits, it is necessary to work under special assumptions, such as the life cycle of the alternative ICT systems. From experience, IT systems may have a life cycle of 3 to 7 years or even longer depending mainly on the level of sophistication and complexity.

Identification

The first stage of a CBA involves the identification of the costs and benefits associated with the project life cycle period which includes initiation, design, acquisition, implementation, and operation of the ICT system. Different costs and benefits which may or may not be quantified in terms of direct money value are associated with these phases. What is the nature of these tangible and intangible costs and benefits that may result from any major ICT investment in the SP sector?

Major ICT investments typically see three major categories of tangible costs (measurable in terms of direct money value): Investment costs, Recurrent costs, and Contingencies. While Investment and Recurrent costs refer to money which will be invested, Contingencies may be taken into consideration as a financial reserve. Investment costs usually include technical assistance, equipment, software, training, and facilities. Recurrent costs may be used for personnel, supplies, maintenance, and operational costs. There may be contingencies for both unforeseen physical variations and price increases. Annex 3.1 provides a generic analysis of tangible costs.

Annex 3.2 lists investment and recurrent costs of an ICT system for the different project cycle phases. Again, this is a generic model which gives a general idea about the relevant costs to be taken into consideration at different times within the project cycle. There may be overlaps, e.g. maintenance & support costs or some operational costs starting already in the implementation phase.

The following examples represent intangible costs which are not measurable in terms of money value: unfavorable impact on other projects resulting from the fact that internal professional staff is hired from these projects, less motivation of staff due to fear of job loss, or loss of image due to failure in project implementation.

As far as tangible and intangible benefits are concerned, they may be assigned to four basic categories: policy, program, institution, and public. Annex 3.3 provides some general examples of both tangible and intangible benefits in these four categories, while Annex 3.4

includes some specific examples of financial projections, fraud detection, cost savings, and time savings.

Measurement

After having identified all the costs and benefits for both the existing as well as the alternative ICT systems, they have to be measured. Measuring costs and benefits of the existing system may be easier, as it has already been used, and thus give some proven information on costs and benefits. Concerning the alternative ICT systems, the expected costs and benefits have to be measured primarily on the basis of assumptions. Standard hardware components and network fees, for example, tend to fall in price periodically due to increasing competition and innovations. Therefore, future investment and/or operational costs can only be estimated based on experience.

Tangible costs and benefits may be easy to quantify in money value. For example, the automation of claim filing usually saves time that can be measured and translated into reductions of personnel costs. Further examples are the electronic archiving of documents, which leads to measurable reductions of paper costs and costs of storage space, and electronic data transfer in the context of contribution collection between employers and the different levels of SP agencies.

Intangible costs and benefits may be more difficult to be quantified monetarily. However, these costs and benefits may be of critical importance for the decision-making process, and therefore should not be excluded from the CBA. If costs and benefits cannot be expressed in dollars or minutes, they may be described in the final evaluation for the decision-making in order to get a better understanding about their impact on the business case.

Improved accessibility to information about SP programs, agencies, and services or improved customer satisfaction, are some examples of intangible benefits which can not be translated into money value. However, these benefits may be benchmarked, for example, on the basis of statistics or surveys. Statistical data on the frequency and success of using electronic self-service job matching systems, as well as ratings about the overall quality of a SP agency or overall level of social service delivery, may contribute to evaluating benefits such as service accessibility and quality or customer satisfaction.

Public costs and benefits are also more difficult to be monetized. They usually occur in the context of service delivery to the citizens. What is the difference in public costs and benefits when the service is delivered electronically via the Internet, call centers, or public kiosks compared to in-person contacts, i.e. office visits? It is possible to measure the difference in time but it is more complicated to convert this time difference into money value. The following example of the California Employment Development Department shows how they calculated the public cost savings on the basis of time savings due to a call center for the Unemployment Insurance claim filing process (see also Annex 3.5).

Box 12: Conversion of Time into Money Value in California

The California Employment Development Department (EDD) offers a Call Center service for Unemployment Insurance (UI) claim filing. In the context of evaluating costs and benefits of telephone UI claim filing versus in-person UI claim filing, the EDD investigated how long it took for a citizen to get his/her UI claim filed in both cases. According to this investigation, it took a total of 272 minutes in urban areas and a total of 388 minutes in rural areas in order to get one UI claim filed. This includes commuting time, waiting time in the office, time to complete forms and meet an agent, and also time for a follow-up visit in order to present documents which the claimant could not provide at the first office visit. In addition, the average mileage of the necessary two round trips amounted to 40 miles in urban areas and 228 miles in rural areas. With the telephone UI claim filing, it takes an average total of 15 minutes in both the urban and rural areas. To express the public costs of UI claim filing via office visit and via telephone, the EDD calculated $ 5.00 in time costs and $ 0.24 per mile in commuting costs. Hence, the average public costs of filing one UI claim through an office visit would amount to $ 31.27 in urban areas and $ 87.05 in rural areas, compared to $ 1.25 via telephone, regardless of the geographic area.

Source: Employment Development Department, California, 1997

Evaluation

Once all the costs and benefits of the existing and alternative ICT systems have been identified and measured, they have to be compared. As far as measurable costs and benefits in financial terms are concerned, numerous techniques exist to perform such a comparison. The most common techniques include Net Present Value (NPV) of total savings, Internal Rate of Return (IRR), payback period of the IT investment, and Return on Investment (ROI).

Considering all the costs and benefits at different stages of the project, particularly in the case of large ICT systems, a basis for a comparison may be established by discounting all

the yearly future costs and benefits for the project life cycle using the present value factor. The yearly discounted costs must be subtracted from the yearly discounted benefits to obtain the yearly net benefits. Combining the yearly net benefits will amount in the net benefits or NPV of savings for the whole project cycle. IRR is another technique that may be part of a CBA. Closely related to NPV, the IRR is the discount rate at which the project‘s net present value equals zero. Investments with higher internal rates of return may attract money away from investments with lower internal rates of return.

The payback period is the break-even point in time when the cumulative present value becomes positive. This indicates how soon the investment amount will be recovered, i.e. when the proposed system could be expected to have paid for itself through savings that should result from its implementation. If the payback period is very short, the risks are lower, which is especially important with regard to ICT. However, the payback period does not take into consideration the costs and benefits occuring after this period, and therefore may not be the only decision criterion of a CBA.

ROI (Return On Investment) is the net present value of savings expressed as a percentage of the investment amount (net present value of costs). This may be helpful if small investments in small systems have to be compared with large investments in large systems. A small investment in a small IT system may have a greater return on investment, although the absolute net benefit of a larger system is higher.

V. Design and Implementation

Major ICT investments in Social Protection very often combine a whole variety of ICT equipment (e.g. Hardware, Software, Networks) and applications (e.g. back-office systems, operational systems and management information systems). Moreover, these systems have to be rolled out in local, regional, and national Pension, Employment, or Social Welfare offices throughout the country. Successful design and implementation are a particular challenge in the context of such major ICT investments mainly depending on the capacity of managing large ICT projects in specific environments and on the complexity of the ICT system.

Basically, governments experience many problems when implementing major ICT projects. While limited capacity of managing large ICT projects may be common to governments of all types of countries, unstable political and legal environments additionally may affect the design and implementation of major ICT systems in low- and middle-income countries.

This chapter reflects the experience in the design and implementation of major ICT projects in SP financed by the World Bank. It will identify some key factors which may help task teams to successfully supervise the process of designing and implementing major ICT components in the context of SP projects.

Common Key Success Factors

Management commitment, flexibility in change, user involvement, and capacity building may be among the most critical factors common to both the design and implementation of major ICT projects for SP systems. Design is the process from identifying to defining the ICT system to be implemented including the preparation of the bidding documents. Implementation starts with the bidding and furthermore includes contracting, supply, installation, testing, transfer, and operation of the ICT system.

Management Commitment

Successful design and implementation of ICT projects needs commitment on all management levels. If Ministers and Deputy Ministers for Labor and Social Security or Presidents of National SP Agencies understand the value and potential of ICT they may be willing to put the project on their priority list and take appropriate decisions. Such decisions may include the development of an ICT strategy along with organizational restructuring, business process reengineering, and resource allocation in order to achieve the goals of the SP program.

The lack of management commitment and appropriate decisions usually is one of the major reasons for the failure of large ICT projects which may result in cost- and time overruns or quality problems. Making quick and sometimes risky decisions may not be common to government agencies. If the ICT investment is on the priority list of a Labor and

Social Security Minister or President of a National SP Agency, he or she may be accessible at all times for any decision to be made in the context of the ICT investment.

Management commitment may not be limited to only a few high-ranking decision-makers. It may be build on a broad basis in order to have sufficient support left if some of the committed managers have to resign from their positions for political or other reasons. Therefore, the planned design and implementation of a major ICT project should be made transparent to all management levels in order to make them better understand the value added of the major ICT investment. On the other side, they may also be aware of the risks of such an investment in order to take the right decisions in the context of risk management.

Box 13: Examples of Lack in Management Commitment in Poland and Latvia

The Automation of the Labor and Social Welfare Offices project in Poland had lots of problems due to poor management support in its beginning. This situation changed with the commitment of the new Deputy Minister for Labor and Social Welfare who took the project on his priority list and got different management levels involved thus contributing considerably to the project's successful design and implementation.

The implementation of the ICT components of the Latvian Welfare Reform Project had seen some major project delays, partly due to the lack of the decision-taking capabilities of the State Social Insurance Agency's (SSIA) line management. Among the recommendations, a supervision mission of the World Bank gave to the General Director of the SSIA, were to maintain a high level of senior and line-management attention to the project activities and steadily increase the representation of SSIA's line-of-business management in the IT project management.

Source: Ministry of Labor and Social Policy of Poland, 1999, and SSIA of Latvia, 2000

User Involvement

The users of the ICT system may be involved from the very beginning of project design and implementation in order to understand their needs in terms of the new ICT system and start a continuous training process as early as possible.

The ICT system and its components may be used on different levels of a SP agency, such as executive management, middle management, and agency staff. While executive and middle management usually are responsible for and, at the same time, users of the ICT investment from different perspectives, agency staff use the ICT system on the operational level. Agency clients may use the system either directly (e.g. self-service applications

available through the Internet) or indirectly (e.g. in-person services through agency staff using the ICT system).

From the decision-making perspective, executive and middle management may be involved by being part of executive project teams or steering committees to take decisions and accept project goals, plans, and reports during the design and implementation of the ICT system. As users of the management information system component, they may have some valuable feedback and suggestions on how to improve the ICT system and/or related processes.

Similar to the management, agency staff may not really be interested in the technology per se but rather in the effects of using it. They may want user-friendly systems which support their daily operational work and simplify repetitive tasks. As agency staff will have to work with the planned ICT system, their involvement in the design and implementation phase may result in higher quality and acceptance of the final ICT system.

Agency clients may be involved in the project process to find out their opinion in terms of user-friendly self-service ICT systems resulting in the development of easy-to-use applications. Their ideas may be collected through surveys and interviews or test and pilot systems. Agency clients may also give input for potential system improvements due to their experience with in-person services supported by the ICT system.

Box 14: User Involvement in Ghana

The Ghana Social Security and National Insurance Trust (SSNIT) began in 1992 to involve users of the electronic system in discussions about how their needs could be served. This became possible with the recruitment of more staff who had the necessary background for the job at hand. Initially, the users were apprehensive and not very cooperative in getting involved; however, the users have increasingly dictated how the ICT systems should work and look like.

Source: Kientzler, IT Projects for SP Institutions in Countries with Infrastructure Constraints, 2000, p. 14

Capacity Building

While technology offers a huge potential for improved operational agency performance and SP program delivery, it is human beings who take relevant decisions, define processes, build organizational environments, and operate the technology. Much of the project success depends on qualified staff at all agency levels. Therefore, capacity building

should be a continuous process throughout all the project design and implementation including operation. Different ways and methods may be used to invest into this process and develop and retain knowledgeable agency staff with appropriate skills.

Capacity at all agency levels includes management, staff who works with the ICT system, and technical staff representing the automation unit. Management should be able to develop a clear vision and strategy in terms of using ICT to achieve the agency's goals and take the right decisions in this context. Operational agency staff should understand these decisions and be able to operate the implemented hardware and software applications. Technical staff need to keep the ICT system up and running and to solve system problems.

Concerning the project design and implementation process, the project implementation unit should be sufficiently qualified to successfully manage the project process. This may vary depending on the selected procurement approaches. Basically, this issue becomes more important if the project management unit decides to contract with multiple suppliers rather than with one turnkey contractor (see also chapter Procurement, pp. 38-46).

Capacity may be built through different ways and methods. Training is the most common one. It may include training courses, study tours, and fellowship programs. Train-the-trainer is a proven concept, particularly, if the ICT system is used in a decentralized environment. To this end, experience has shown that local staff training in the satellite agencies throughout a country may be enforced. User involvement (see pp. 30-31) may be a practical, learning-by-doing way to transfer knowledge and know-how about the ICT system to be implemented. Continuous communication and dialogue (e.g. user forum meeting on a regular basis, online discussion forum, Q&A bulletin) may contribute to acquiring and improving knowledge about the ICT system.

Capacity building may also take into consideration the development of appropriate incentive systems in order to retain qualified agency staff. Very often, agencies invest in building technical capacity by developing and staffing their own automation unit. However, once the technical staff is qualified many of them may leave for the better-paying private sector. To this end, splitting the income of technical agency staff into a fixed and a variable part may allow to link the variable income to ICT systems availability. Thus, the longer ICT

applications and/or equipment is not operating due to systems problems, the lower the variable income of the staff who is responsible to fix the problem. However, such a model has some limitations as technical staff may not be blamed for systems errors that are of objective nature and not resolvable at all.

Box 15: Training under the Automation of Local Labor Offices Project in Turkey Flexibility in Change

Part of the Turkish Automation of Local Labor Offices Project was training with a total of some 1,320 trainees. This included 1,280 agency staff representing users of the software applications and 40 technical staff responsible for keeping the ICT system up and running. Given one central office and 117 local labor offices, not all offices got trained technical staff.

The training, study tours, and fellowship program included areas such as network, system software, and quality assurance. They took place not only in Turkey but also in Germany, Poland, Austria, England, USA, and Canada.

Here is what the Deputy Director General of the National Turkish Employment Organization said during the International Conference on Information Technology in Social Protection, May 2000, Warsaw, Poland:

"The current IIBK personnel with its training background is not capable of using let alone managing a complex automation project. Therefore, the training of all users starting from computer literacy and from there on building to more complex processes is absolutely essential for the success of an IT project with a very wide scope as we are trying to implement in Turkey.

This training has to be an on-going activity starting from the initial phases of the Project and continuing during the implementation phase. The training requirements may change as the staff get to know the system and therefore the organization has to be able to cope with different requirements and be adaptable enough to answer these even after the completion of the Project.

Therefore the training of a core group who may later on act as the trainers within the organization will undoubtedly contribute to the successful implementation of the Project. In this context, careful time planning and allowance for training in the overall Project implementation is of essence."

Source: International Conference on Information Technology in Social Protection, Poland, 2000

Low- and middle-income countries are often characterized by political instability as well as changes in regulatory frameworks. In addition, ICT changes all the time driven by very short innovation cycles. All these factors may have a less or more considerable impact on the ICT investment in the SP sector which usually takes up to five or even more years and therefore needs professional change management including flexibility.

Political instability in low- and middle-income countries may result in major changes in terms of organizational structures and responsibilities. Executive management (e.g. Prime Ministers, Ministers or Deputy Ministers of Labor and Social Security, Presidents of National

SP Agencies) may be replaced in short cycles, thus setting different priorities in terms of the ICT investment. Stakeholder involvement on all levels may help to develop broad consensus and understanding in order to mitigate the risk of project disruptions.

Regulatory changes of SP policies and programs, very often due to political changes, may have an impact on the ICT project process. No matter whether during the design or the implementation phase, flexibility to adapt relevant ICT components to these changes may be critical for process continuity. Basically, compatible and modular ICT components and structures may be the appropriate approach to be flexible enough in case of regulatory changes, such as change or decentralization of responsibilities, change in benefit eligibility criteria, or change of contribution rates.

Due to the short ICT innovation cycles, initially planned technical specifications of computer equipment may no longer be available at the time of the bidding. Even during the bidding and implementation period, initial mandatory requirements may have to be changed. Often, technological changes include functional improvements but also higher prices. In this context, the SP agency may focus on the overall performance of the ICT system and be flexible enough to take changes appropriately into consideration.

Changes of software applications already under design or development may have an impact on the required hardware parameters (e.g. higher CPU performance, more memory or storage capacity). This may be a good reason for purchasing hardware components only when software development is close to the testing and piloting phase.

Box 16: Legal and Regulatory Changes in Poland

The two software application modules for the Polish labor and social welfare offices were developed under an extremely changing legal and regulatory environment. The PULS (Labor Offices System) application development was influenced by a total of 44 law changes between 1995 and 1998 resulting in an labor resource increase of approximately 30 percent. Similarly, the POMOST (Social Welfare System) software development saw a total of 33 law changes during the same period with an labor resource increase of some 30 percent. Both software application projects were completed with major delays: 1.5 years (PULS) and 1 year (POMOST).

In this context, one of the lessons learned was that hardware procurement should not precede software development.

Source: International Conference on Information Technology in Social Protection, Poland, 2000

Design

In addition to management comittment, user involvement, capacity building, and flexibility in change, professional planning may be pointed out as a particular key success factor of the design phase. The planning process may include strategic, business process, technical, and project management considerations covering the whole complex project cycle of the planned ICT investment.

Strategic Considerations

Given the growing importance of ICT in all spheres of our live, major ICT investments may be planned from a strategic perspective. A clearly defined ICT strategy based on the business goals of the SP agency may contribute to bridging the gap between where the agency is today and where it wants to go to tomorrow. In addition, professional planning may include the process of aligning the ICT investment with appropriate business processes and organizational structures of the SP agency.

Major ICT investments may also be explored in terms of possible impacts on the policy framework. As the Bulgarian Social Insurance Administration project (see Box 11, p. 24) has shown, a new countrywide ICT system may result in increasing revenues which, in turn, can have an impact on the country's tax policy. Also, the use of new ICT systems may allow financial projections over a long period contributing to the modification of existing or the formulation of new SP programs.

While building its ICT strategy, the SP agency may look beyond institutional borders and aim at placing it under the umbrella of a possibly existing government ICT strategy. In this way, the SP agency may become an early player in the context of E-Government initiatives and be able to provide social services through standardized electronic delivery channels.

Business Process Considerations

Major ICT investments may be used in order to (re-)engineer existing operational processes of a Social Protection agency. To this end, the Social Protection agency may explore how the potential of ICT can be used to improve the quality of the Social Protection Program through alternative delivery processes. This approach may result in major changes

of the traditional processes including organizational restructuring of the Social Protection agency.

If a SP program, such as Unemployment Insurance, is introduced for the first time, the process engineering of the whole program may take into consideration alternative ICT systems. At the end, traditional process approaches, such as in-person claim filing, may be replaced by remote claim filing through a call center or the Internet, thus providing more effective and customer-centered services.

In the context of already existing SP programs, the challenge is to re-engineer the business processes rather than to keep them and simply replace an old by a new ICT system. Integrated ICT systems offer the potential of transforming SP agencies with old business processes and stove-piped organizational structures into customer-centered service providers.

Technical Considerations

Concerning the technological level, planning may take into consideration the options of developing a completely new system or integrating already existing ICT components. While a new system built from scratch is supposed to support the idea of leapfrogging, the integration of already exisiting ICT components may include staff experience and expertise also in future systems operation.

Think big and start small means incremental development of ICT systems on a modular basis in compatible structures. With the overall ICT system in mind, this approach may allow to build, pilot, and implement smaller ICT modules. Once operational, these small modules may show early benefits and contribute to motivating staff in favor of ICT.

Hardware equipment and software applications may be planned on the basis of standard architectures and open systems (e.g. client-server structure, object-oriented software development, relational database management systems). This is important not only for competitive reasons during the bidding process but also for follow-on investments.

Project Management Considerations

Professional project management planning may include the management of time, quality, resources, change, and risk throughout all the project phases. Time management may play a critical role in the context of scheduling the project components and deliverables.

Concerning quality management, the project may be managed on the basis of standards, such as ISO 9001. Resource management may include financial as well as human resources. Change and risk management procedures may be planned as even the best planned ICT implementation may not be implemented as initially designed and therefore result in cost and time overruns or lower quality (e.g. solution lacks functionality, difficult to enhance, or unfriendly to end users; poor system performance). Contracts may even be abandoned or never completed.

ICT project risks as key reasons for these undesired results may be identified very early and categorized according to their nature: Project Management, Technical, Commercial, and Contractual. The following table lists some examples of typical ICT project risks:

Table 2: Different Categories of ICT Project Risks

Project Management	• Filling key project roles by simply assigning employees who are known or happen to be available • Lack of competence/enthusiasm in the project team • Poor motivation and inadequate incentive systems
Technical	• Failure to choose proven but modern architectural concept • Use of immature technologies • Failure to plan version updates well in advance and to coordinate updates with multiple suppliers • Avoiding security issues with relation to data manipulation, access, etc.
Commercial	• "Over-competitive" pricing in attempt to win a bid, resulting in "repressing" the costs for risk provision • Inconsistency in payment schedule and technical delivery milestones, so the ICT provider and customer are not working on the basis of a common project plan (problems with regard to value appreciation and service acceptance)
Contractual	• Fixed pricing and defined deadlines combined with lack of detailed design and delivery specification • Ambiguously defined acceptance procedures and delivery milestones • Failure to define customer obligations or customer collaboration • Failure to approve and secure third-party suppliers contractually • Insufficient research and benchmarking in partner selection

The attached generic model of a major ICT project (Annex 4.1) may help to better understand the complexity of the project and give an idea about the different components relevant for the project planning process. While each of these components may need its own planning process, particular attention may be paid to the planning regarding the interaction of all components.

Implementation

Besides the above common key success factors (pp. 29-35), there are two key issues in the context of the implementation process of major ICT projects: procurement and sustainability. While procurement includes the process of purchasing the ICT system and make it operational, sustainability includes some important factors for efficient systems operation after the procurement process.

Procurement

Basically, ICT procurement is characterized by many problems and difficulties for reasons such as political, legal, technological, and management changes during the lengthy procurement, incomplete specification of requirements and terms of contract, or fraud and corruption. Cost and time overruns are the most common result. Many of these problems may be avoided by good planning including a clearly defined procurement strategy and professional advice to build the necessary procurement capacity among the project implementation unit of the SP agency.

A set of ICT procurement standard bidding documents was developed at the World Bank most recently which may help to manage the procurement of ICT systems of different scope and nature. The next paragraphs may help project implementation units to get an overview about the basic principles of ICT procurement approaches for World Bank financed projects. In addition, they may get a better understanding about the pros and cons of multiple versus turnkey contracting and about some alternative approaches to ICT procurement.

Bidding Documents

While small ICT projects with low volumes mostly use shopping or direct contracting, large ICT investments use bidding as procurement method. In general, ICT procurement had been based on the World Bank's Standard Bidding Documents (SBD) for

Goods until most recently. Today, a trial set of SBD for ICT procurement is part of the World Bank procurement guidelines and recommended for Bank-financed ICT projects.

The new set of SBD for ICT procurement includes three basic bidding documents: SBD for Procurement of Information Technology Products, Single-Stage SBD for Supply and Installation of Information Systems, and Two-Stage SBD for Procurement of Information Systems. The decision about the most appropriate SBD depends on the complexity of the ICT system. The table below proposes which SBD should be used under which circumstances and gives some additional information on the editorial status.

Table 3: World Bank Standard Bidding Document for ICT Procurement

Name	Document Title	Comments
ITP SBD	Standard Bidding Documents for Procurement of Information Technology Products (off-the-shelf supply and maintenance) Trial Edition, Issued in August 2000.	This SBD is for the majority of straightforward technology supply procurements. It emphasizes strong, professional procurement of both off-the-shelf technology and of the maintenance and support services essential to make it work. The ITP SBD is also used to implement new process and content innovations resulting from feedback from users and IT Industry, and therefore it will become a core part of future SBDs.
1Stage IS SBD	Single-Stage SBD for Supply and Installation of Information Systems Trial Edition, 2/99, Rev. 8/00	This SBD can be used for single stage, complex IT Supply and Install cases where the services component of the procurement goes beyond the routine installation and maintenance of technology. This SBD will be used as a basic building block for the ”Information Systems Engineering” SBD which will target the whole range of complex ICT procurement cases and is targeted for issue by OCSPR in late FY2001.
2Stage IS SBD	Two-Stage SBD for Procurement of Information Systems Trial Edition, 9/96, Rev. 8/00	This is a transitional SBD for two-stage ICT procurement, pending development of the ”Information Systems Engineering” SBD targeted for issue by OCSPR in late FY2001.

Annex 4.2 provides a decision tree about the use of SBD for ICT procurement. For more information on this topic, see the World Bank's ICT procurement website under http://www.worldbank.org/html/opr/procure/bdocpage.html which gives an overview about available draft bidding documents for ICT procurement as well as some additional information such as selection tips of the appropriate bidding documents.

Clearly set procurement guidelines may help to avoid corruption. However, experience in major ICT investments under the World Bank's procurement rules shows that bidders and public agencies may try to find some ways to bypass at least some of the guidelines. Complaint letters from bidders during the bid evaluation process or the acceptance of delayed bids are only two examples. Also, there may be situations where SP agencies have a preferred ICT supplier trying to get waivers or to disqualify better evaluated bids (Leipold 1999).

Multiple versus Turnkey Contracting

Each country may have its own experience. While the Polish Ministry of Labor and Social Welfare is in favor of the multiple contracting (bad experience with international turnkey contractor who did not really understand the needs of the Ministry in a fast-changing political and regulatory environment), the Turkish Employment Organization supports the turnkey approach (simplification of bureaucratic procedures and single point of contact) with one turnkey contractor for the design and implementation monitoring and one turnkey contractor for the implementation. In between, the Bulgarian National Social Security Institution recommends to work with a few contractors (better control of implementation, more competition).

The following table is a summary of the pros and cons of multiple and turnkey contracting resulting from a panel discussion at the International Conference on Information Technology in Social Protection which was held in May 2000 in Warsaw, Poland. Representatives from SP agencies in Bulgaria, Poland, and Turkey as well as from the World Bank and from private contractors shared their views and experience on this issue.

Table 4: Pros and cons of multiple vs. turnkey contracting

	Multiple Contracting	Turnkey Contracting
Pros	• Choice for most economical proposal for each ICT component • Small manageable contracts minimizing the risk of failure • Control in user hand without any monopoly situation • Specialist contractors • Flexible timetable	• Single point of contact • Single responsibility for whole system • "Bulk-Buy" price negotiating power • International response to tender
Cons	• Requires management capacity and overhead • Multiple bid preparation • Responsibility in case of system problems • Loss of information due to lack of communication	• Dependent on single firm without control over contractor resources (number, quality, turnover of staff over time) • Work quality of sub-contractors and subcontracting costs • Complex procurement exercise which can be inflexible

Pros of Multiple Contracting

Multiple contracting offers the choice among competing suppliers for each ICT component. The most economical proposal for each ICT component can be chosen. Also, it may open business opportunities for smaller businesses and contribute to local private sector development.

Under the multiple contracting approach, the contracts are of convenient size and therefore better manageable which may result in minimizing the risk of failure of the smaller contract. Also, the risk of overall project failure may be minimized with multiple contractors. The failure of just one contractor out of five to deliver a specific ICT component may be compensated and not lead to the failure of the whole project.

More control is in user hand with multiple contracting. To this end, the users are managing several separate contracts which may allow them to be more flexible under fast changing conditions in the political, legal, and technological environment. The user (i.e. SP agency) is the owner of the project process avoiding a monopoly situation where one turnkey contractor would dominate the project process.

Separating different ICT components such as standard hard- and software from application software development or networking components offers the advantage of contracting to a specialist company with proven best practice in a specific area. The value added for the SP agency may be best-in-class products from a professional supplier with a lot of experience in the very required ICT components.

Multiple contracting offers the advantage of more flexibility in terms of the overall timetable for the ICT project. As design and implementation of these large ICT projects may take several years and initially designed ICT components would not be available for implementation due to the short innovation cycles of technology, the SP agency may be much more flexible in contracting the right ICT components at the right time with the right company. Specific requirements may be defined only shortly before they really are required.

Cons of Multiple Contracting

The management of multiple contractors including the coordination of deliveries of different ICT components is a big challenge by nature. It requires excellent project management capacity which very often is not available in public SP agencies. It will definitely add some coordination overhead for the agency.

Multiple contracting means multiple bid preparation. As long as SP agencies or Project Implementation Units do not have sufficient capacity to manage the rather complex procurement guidelines, the multiple bid preparation, evaluation, and contracting may be very time-consuming and result in time and budget overruns.

If the ICT system is built together by using components from different contractors, the responsibility of the overall functionality might rest with the SP agency. In addition, if there are operational problems, each contractor may insist that the problem is not due to his component and it may be hard to locate the error in order to define the contractor who would be in charge of the problem.

The more contractors are involved in the ICT project, the more difficult communication may become. Loss of information due to lack of communication or different understanding may have a negative impact on the design and implementation of major ICT projects.

Pros of Turnkey Contracting

The turnkey contractor is the single point of contact for the SP agency. From the agency's point of view, it may be much more comfortable to communicate on a one-to-one basis rather than on a one-to-multiple basis. The less contractors for the ICT system are involved the easier to set up meetings, channel information, and reach at common understanding.

The integration of all the different components of a large ICT system is one of the major factors that influence the success of an the ICT project. With a turnkey contractor being responsible for the integration, including compatibility and coordination of sub-contractors, the SP agency will have to approve one complete ICT system rather than several ICT components from different contractors not being sure that all of them will run without any problems as one system. It is the turnkey contractor who is responsible for the total functionality and interaction of all ICT components. Given the many changes which may have an impact on the design and implementation of the ICT system, the resulting increase or decrease of project components as well as necessary system changes may be better managed by a turnkey contractor who will have to consider the changes in the context of the overall functionality of the ICT system.

The SP agency may be in a better position to negotiate the price. This may effect the price for large numbers of computers. The Automation of Labor and Social Welfare Offices Project (ALSO) in Poland included the delivery of some 18,000 computers and printers. With two separate packages of 9,500 and 8,500 for the Social Welfare Offices and Labor Offices respectively, the negotiating power of the Polish Ministry of Labor and Social Welfare was already strong. It might have been stronger with only one contractor delivering all the 18,000 pieces. An additional 5%-discount would have saved the purchaser about US$ 1 million.

Large turnkey contracts under World Bank financed projects will use the International Bidding as procurement guideline. To this end, the turnkey contractor may be a large international company with lots of experience in ICT projects in the SP area. This may open new ways for knowledge sharing such as study tours and fellowship programs to countries throughout the world.

Cons of Turnkey Contracting

With one turnkey contractor, the SP agency is dependent on one single contractor. Whenever the contractor faces any problems, this may have a strong impact on the whole ICT project and endanger its success. Also, the agency does not have any control over the resources of the turnkey contractor. Number, quality, and turnover of the turnkey contractor's staff may vary and affect the ICT project during the rather lengthy process of design and implementation, which very often takes several years.

Turnkey contractors usually subcontract components of the ICT project. Again, this is out of the agency's control. Besides uncertainty of the quality of the subcontractors' work, failure of a subcontractor may pose considerable problems for the whole ICT project. In addition, subcontracting costs for managing the subcontractors may increase the total project costs to be paid by the agency.

Turnkey contractor approaches are a very complex procurement exercise. Complex proposals cannot be compared and evaluated as easily as smaller proposals. One turnkey contract includes all ICT components and deliverables and may easily come up with hundreds of pages. It may be hard to follow through a contract of such inconvenient size. Also, it may limit flexibility in terms of contract modifications.

Different Experience

All of the following three projects were quite successful which shows clearly that multiple versus turnkey approach cannot be generalized, but project- and country-specific factors such as the nature and scope of the project components and the capacity of the borrower may play an important role.

Box 17: Examples of Different Procurement Approaches in Poland, Bulgaria, and Turkey

The Automation of Labor and Social Welfare Offices project (ALSO) as part of the Polish Employment Promotion and Services Project started with a turnkey contract for the design. This contract was cancelled after three years as there was no common understanding of project goals and local needs between the borrower and the international contractor. From then on, the Polish Ministry of Labor and Social Welfare set up an own experienced project management team which contracted to multiple consultants and suppliers for the design as well as for the implementation process. The Ministry contracted to more than 30 different suppliers. Bad experience with turnkey contracting, control in user hand, and flexibility in terms of timeline were the basis of the multiple contracting decision.

The Social Insurance Administration project (SIA) in Bulgaria decided for a mixed approach. Business Reengineering (design) was contracted to one supplier, whereas application software development, computing infrastructure, and network infrastructure were split up into three separate contracts. This approach was chosen due to more competition among different suppliers, better control in implementing solutions, and more flexibility in implementing changes.

The Automation of Local Labor Offices Project (ALLOP) was a major component of the Turkish Employment and Training Project. The Turkish Employment Organization decided for a turnkey contractor approach for the design as well as for the implementation. This decision was based on four key issues: integration and compatibility of ICT components, single contact and responsibility, limited project management and coordination capacity of borrower.

Source: International Conference on Information Technology in Social Protection, Poland, 2000

Alternative Approaches

The latest trends with regard to ICT procurement in the public sector, including the SP area, show that alternative forms of major ICT systems delivery are emerging. Public-private partnerships, such as Private Financed Initiatives (Great Britain) or Outsourcing of an entire ICT system (Flemish Employment Organization in Belgium), are based on long-term contracts of five, ten, or even more years.

Under such a partnership approach, the SP agency defines the functional requirements based on its mission and objectives and invites potential contractors to submit a proposal on the basis of service-level agreements. Design, installation, and operation of the required ICT infrastructure, including training, maintenance, and upgrades, is up to the contractor who usually owns the ICT system or may transfer its ownership to the SP agency in the long run.

Outsourcing may be an option in the low- and middle-income countries where qualified ICT staff may prefer to move to the better-paying private sector rather than to stay in governmental institutions resulting in the lack of skilled and experienced staff. The Thailand Social Security Office is an example, it defined the functional requirements and left the design, development, installation, and operation of the ICT system with the contractor.

These long-term partnership approaches are also known as BOO (Build-Own-Operate), BOT (Build-Operate-Transfer), or BOOT (Build-Own-Operate-Transfer) contracts. The contractor may take over ICT staff from the SP agency or found a new legal entity while owning and operating the ICT system.

The pros of such long-term partnership contracts are obvious. Single point of contact as only contractor simplifies coordination and communication. The SP agency defines the output on the basis of the overall goals. Asset-based services through performance-related payments is the dominating contract component. Technical ICT capacity and skills are not needed (outsourcing) or may be developed continuously over a long time after which the ownership of the ICT system may be transfered from the contractor to the agency.

On the other hand, there are some cons, such as opportunity of abuse by one monopolistic contractor, dependency on one contractor, and less competition. Only large international contractors may be able to deliver such a partnership which usually includes much pre-investment.

Sustainability

Once the ICT system is up and running, the project may be officially closed. However, project closure does not mean that there are no more activities necessary in order to use all the potential of the system and justify the high initial investment costs after a short time. Using the implemented ICT system for sustainable contribution to improved operational performance and service delivery needs operation and maintenance, adaptation, security, and evaluation. Management should be aware of this fact and set up an appropriate organizational structure and environment including the budget for the required recurrent costs as well as an attractive incentive system to keep qualified staff.

Operation and Maintenance

SP agencies running major ICT systems may need an ICT unit with technical staff in order to support system users and keep the ICT system up and running. The structure and size of such an unit depends on the agency's technical maintenance & service strategy. An agency may contract out the complete maintenance of the ICT system to service companies. To this end, call centers may serve as a first service level for problems due to the application software or systems hardware and software components. As a second service level, the service contractor may have to respond within a certain time and fix the problem. Responding time may differ from "immediate" to "4 hours" or "1 day" depending on the impact the problem may have on the overall operational performance of the agency.

Building inhouse capacity in terms of ICT support and maintenance is the option to contracting these services out. According to the size and different components of the system, ICT units may be set up starting within the main location of the SP agency where the operating center including mainframes and/or high-end servers usually are located. Technical staff of this unit may cover all the local satellite offices or it may even be reasonable to set up own technical support units in these offices.

Besides user training, ongoing technical training is necessary in order to keep technical ICT staff (e.g. sytems administrator, network specialist, etc.) of the SP agency up to date. They may handle a feedback mechanism on the basis of regular meetings or an online discussion forum on the internal agency website. In this way, pros and cons of the implemented ICT system experienced by users may be collected and provide a lot of input for system improvement. As first contact of the external ICT contractors, technical staff may follow new trends and developments on ICT markets.

First-time users of the ICT system and its different applications may get training in order to use the applications efficiently during their daily work. In addition, training may be provided after software modifications (updates to new versions) or changes (upgrades) due to additional and/or modified functionalities.

Purchase and management of supplies, such as consumables (storage media, printing paper, toner cartridges) and spare parts may contribute to successfully operate the ICT system in general. Staff very often have to print paperwork, such as benefit application forms

to be signed by the visiting applicant. If the printer runs out of toner, the replacement may be done by the user or technical staff within a short time. In the case of other technical problems, the IT unit of the agency may have some inventory of spare parts which would allow them to change defect monitors or other peripherals, such as keyboards, mice, and printers.

Adaptation

Given the short innovation cycles of ICT, it may not be seldom that initially designed specifications of certain computer equipment will no longer be available by the time of its implementation. Major ICT systems may be operated over different life cycles. However, it is almost for sure that, during this time, changes in terms of systems capacity or functional requirements will happen. Besides these necessary changes, new investments may be taken into consideration to add new components to the existing system.

Increased information volume and new functional features may have an impact on systems capacity. Both are variable factors, the information volume may depend on the number of registrations, financial transactions (contribution collection or benefit payment), or other processes, whereas modified functional features are mostly due to changes in the regulatory framework (new eligibility criteria to be implemented in a benefit calculation program). To this end, systems capacity may have to be increased by hardware upgrading (importance of systems scalability) and software applications may have to be modified (importance of variables which may simply be set rather than some software re-development).

New investments may include modifications of the existing ICT system which are not necessarily resulting from limited systems capacity but from the effort to improve the system in terms of ease and convenience of use. The feedback of the users may propose some new layout features or modified functionalities. Also, new trends, such as electronic service delivery, may be taken into consideration. To this end, a whole range of social services may be moved online and provided through self-service kiosk systems in public places which are linked to the database of the existing ICT system. Altogether, these new investments may not be necessary; however, they may contribute to increasing the operational performance and quality of social program delivery.

Security

As SP agencies are collecting, storing, and processing data about individuals and their status in terms of employment, pensions, or social assistance confidentiality and security play an important role during systems operation. Personal data may be accessible only by authorized agency staff through the use of passwords. Systems administrators may update authorizations on a regular basis. New passwords need to be set up for new staff whereas existing passwords of leaving staff have to be deleted. Each user may be authorized to change the own password.

The availability of electronically captured and processed data depends on the operational stability of the ICT system. The SP agency may be prepared for systems problems which may have different reasons such as viruses, data overloads, broken components, external incidents (e.g. power disruption, fire, water). To avoid or minimize the loss of data, security copies of updated files may be made on a regular basis and stored in physically different places. To this end, complete back-up systems in a different room/building/city may be used for replication. Storage media such as magnetic tapes, compact discs, or optical discs are the cheaper option.

Evaluation

Project evaluation may be helpful to find out any differences between the objectives planned before the project beginning and the post-project achievements. Similar to a cost-benefit-analysis during or after project implementation, this may help to take some immediate adjustment steps and to share experience and lessons learned for future projects.

According to OECD experts, success and failure in major public ICT projects are assessed by using three dimensions: budget, timeliness, and usability/quality. Budget and timeliness might be assessed quite easily by finding out whether the ex-post expenses lie within the budget and the project is delivered on time.

Usability/quality evaluation may be a little more complex. Besides covering the productivity improvements of the SP agency due to the use of the new ICT system, the evaluation may take into consideration the user perspective. Executives look at the efficiency of the ICT system in terms of supporting decision-making processes. Agency staff prefer

user-friendly ICT systems and applications whereas technical staff primarily want ease of maintenance.

Annex 4.3 includes questions which may be helpful for establishing a comprehensive evaluation questionnaire of major ICT investments in SP. Annex 4.4 is an example of a standardized questionnaire which was used in the context of the evaluation of the ICT component of the Russian Pension Project.

VI. Conclusion

The concluding section draws some lessons of the considerations under sections II to V. It provides several recommendations which may be helpful in the context of projects with major ICT components in the SP area.

A lot of major ICT projects have already been designed and implemented in low- and middle-income countries. The World Bank may continue to encourage the use of ICT in Social Protection and increase the inclusion of appropriate ICT projects in its lending portfolio. Specifically in terms of facts and figures, the World Bank may keep ICT spending transparent through appropriate documentation, e.g. adding to the ESSD Core Database the functionality of total ICT spending in money value by projects, sectors, and regions.

ICT is more than technology per se; it offers the potential to redesign policies, processes, and organizational structures. These opportunities may be taken much earlier into consideration, i.e. from the beginning of developing SP policies, programs, and agencies. Using ICT for SP program delivery may increasingly focus on the electronic delivery of SP services through self-service systems. Connectivity and accessibility may be increased by sharing electronic delivery channels in public places and providing a broad range of services in addition to SP services.

Costs and benefits may not always be measurable in terms of money value but have a significant impact on the delivery of SP programs and services. Therefore, they may be estimated with a money value, e.g. as a percentage of the total costs or by assuming a monetary value per time or mileage unit. If this is not possible, they may be explained and added to the evaluation of the costs and benefits of the planned ICT systems. Initially higher costs of alternative ICT systems may result in higher benefits. Market studies on major ICT

suppliers and their products may help to get a better understanding of cost planning prior to the purchase. Recurrent costs may not be underestimated.

In the process of designing and implementing major ICT projects in Social Protection, the importance of professional planning of all project phases may be pointed out. Committed stakeholders and users on all levels may be involved and support the ICT project. Early and continuous training may contribute significantly to building the professional capacity required to successfully managing the ICT project. Appropriate procurement approaches may be selected due to the scope of the ICT project and capacity of the project implementation unit. Finally, SP agencies may be aware of the need of resources in order to operate and use the implemented ICT system under optimal conditions.

VII. Abbreviations and Acronyms

ACD	Automated Call Distributor
AFRVP	Africa Regional Office of the Vice President
ALLOP	Automation of Local Labor Offices Project
ALSO	Automation of Local and Social Welfare Offices
ATM	Automated Teller Machine
BOO	Build, Own, Operate
BOOT	Build, Own, Operate, Transfer
BOT	Build, Operate, Transfer
BGL	Bulgaria Leva (1 US$ = 2.17 BGL as of March 21, 2001)
CBA	Cost-Benefit-Analysis
CPU	Central Performance Unit
CSR	Customer Service Representative
DOT	Department of Transportation
DSS	Department of Social Services
EAPVP	East Asia & Pacific Regional Office of the Vice President
ECAVP	Europe & Central Asia Regional Office of the Vice President
EDD	Employment Development Department
ESC	Employment Security Commission
ESSD	Environmentally and Socially Sustainable Development
ESSP	Employment Service and Social Protection
FY	Fiscal Year
GDP	Gross Domestic Product
HRDC	Human Resources Development Canada
HW	Hardware
ICT	Information and Communications Technology
IIBK	National Employment Organization of Turkey
IRR	Internal Rate of Return
IS	Information Technology
ISO	Information System
IT	International Standard Organization

VII Abbreviations and Acronyms (cont'd)

ITP	Information Technology Products
IVR	Interactive Voice Response
LCRVP	Latin America & Caribbean Regional Office of the Vice President
MNAVP	Middle East & North Africa Regional Office of the Vice President
NPV	Net Present Value
OCSPR	Operational Core Services Network - Procurement Policy & Services Group
OECD	Organization for Economic Cooperation and Development
PIN	Personal Identification Number
POMOST	Software Application for Polish Social Welfare Offices
PROST	Pension Reform Simulation Toolkit
PULS	Software Application for Polish Labor Offices
Q&A	Questions & Answers
ROI	Return on Investment
SARVP	South Asia Regional Office of the Vice President
SBD	Standard Bidding Documents
SIA	Social Insurance Administration
SP	Social Protection
SRM	Social Risk Management
SSIA	State Social Insurance Agency
SSNIT	Social Security and National Insurance Trust
SW	Software
TCF	Telephone Claim Filing
UI	Unemployment Insurance

References

Bournens Umberto (1999), *Information and services to citizens (Project: Publincontro),* Conference Paper for 9th International Conference on Information Technology in Social Security, International Social Security Association, Montreal, Canada

Centrelink (2001), http://www.centrelink.gov.au/, Australia

Dar, Amit and Tzannatos, Zafiris (1999), *World Bank Lending for Labor Markets: 1991-1998,* SP Discussion Paper No. 9902, The World Bank, Washington D.C., USA

Diamond, Peter (1998), *Administrative Costs and Equilibrium Charges with Individual Accounts,* USA

Employment Development Department (1997), *Unemployment Insurance Claim Filing,* California, USA

ESSD Coredatabase (2001), The World Bank, Washington D.C., USA

Ferreira, Carlos (2001), *Information Technology in ECA Region Projects Design and Implementation,* The World Bank, Washington D.C., USA

Human Resources Development Canada (2001),

http://www.hrdc-drhc.gc.ca/common/home.shtml, Canada

Information Technology Support Center (1997), *Planning Guidance Document for Telephone Initial Claims,* http://www.itsc.state.md.us/ITSC/delvrbles/Deliverables/P06/PGD/cov.htm, USA

International Conference on Information Technology in Social Protection: Design and Implementation (2000), Ministry of Labor & Social Policy of Poland/The World Bank, Warsaw, Poland

International Data Corporation (2000), http://www.idc.com

Kientzler, Francois (2000), *IT Projects for Social Protection Institutions in Countries with Infrastructure Constraints,* Conference Paper for International Conference on Information Technology in Social Protection, Ministry of Labor & Social Policy of Poland/The World Bank, Warsaw, Poland

Kiiski, Markku (2000), *Document Imaging: A Way to More Efficient Social Security Provision,* Social Insurance Institution, Finland

Leipold, Knut (1999), *Investigation of the Design and Implementation of Information and Communciation Technology in the Social Security Area*, The World Bank, Washington D.C., USA

Ministry of Labor and Social Security (1999), *China Pension System Reform Project*, Project Implementation Proposal, Beijing, China

News Release (1997), *Employment Security Commission*, North Carolina, USA
News Release (1997*), Department of Labor*, Idaho, USA

News Release (1997), *Employment Department*, Oregon, USA

News Release (1996), *Employment Security Commission*, Michigan, USA

Social Security Administration (2000), *Audit Report on Matching Agreements Using Biometric Technologies*, Washington D.C., USA

Social Security Administration (2000), *Agency Level Comprehensive Cost-Benefit Analysis*, Washington D.C., USA

The World Bank (2001), *Social Protection Sector Strategy: From Sefety Net to Springboard*, Washington D.C., USA

The World Bank (2000), *Modeling Pension Reform: The World Bank's Pension Reform Options Simulation Toolkit*, Washington D.C., USA

The World Bank (2000), *Integrated Community Development Project*, Concept Note, Washington D.C., USA

The World Bank (2000), *Planning and Acquisition of Information Systems*, Technical Note Draft, Washington D.C., USA

The World Bank (2000), *IT Procurement – Selection of SBD for IS Procurement*, Technical Note 8, Washington D.C., USA

The World Bank (2000), *Welfare Reform Project Latvia*, Technical Note on SSIA Information System Project, Washington D.C., USA

The World Bank (1998), *Social Benefits Administration Project Slovak Republic*, Aide Memoire, Washington D.C., USA

The World Bank (1997), *Welfare Reform Project Latvia*, Project Appraisal Document, Washington D.C., USA

The World Bank (1996), *Social Insurance Administration Project Bulgaria,* Staff Appraisal Report, Washington D.C., USA

The World Bank (1995), *Guidelines to Procurement under IBRD Loans and IDA Credits,* Washington D.C., USA

The World Bank (1993), *Pensions Administration and Health Insurance Project Hungary*, Staff Appraisal Report, Washington D.C., USA

The World Bank (1991), *Employment Promotion and Services Project Poland*, Staff Appraisal Report, Washington D.C., USA

Annex

Annex 1: Projects with major SP and ICT components

1.1 – List of Projects at the World Bank

1.2 – Sample Template for Project References

Annex 2: Trends of using ICT in Social Protection

2.1 – Example Australia

2.2 – Example Canada

Annex 3: Costs and Benefits of Major ICT Investments in Social Protection

3.1 – Cost Categories

3.2 – Investment and Recurrent Costs along the Project Cycle

3.3 – Benefit Categories

3.4 – Specific Benefit Examples

3.5 – Example California

Annex 4: Design and Implementation of major ICT projects in Social Protection

4.1 – Generic Project Cycle Model

4.2 – Decision Tree for Using Standard Bidding Documents

4.3 – General Questions for Project Evaluation

4.4 – Sample Questionnaire of the ESSP Project in Russia

Annex 1.1 – List of Projects at the World Bank

Project ID	Country	Region	FY	Project Name	Sector Group	Project Loan Amt in $ millions
437	Cape Verde	AFRVP	1994	PUB SEC REFORM & CAP	Public Sector Mgmt.	8.1
426	Cape Verde	AFRVP	1995	BASIC EDUCATION	Education	11.5
44975	Chad	AFRVP	1997	SAC II	Economic Policy	25
39264	Eritrea	AFRVP	1996	COMMUNITY DEVELOPMENT FUND	Social Protection	17.5
41548	Gabon	AFRVP	1997	PRIV. & REG. CB TA	Private Sector Devel	10
50731	Guinea	AFRVP	2001	MICROFINANCE - DROPPED 9/19/00	Finance	5
35915	Guinea-Bissau	AFRVP	1995	TRANSP.& URBAN INFRA	Urban Development	22
1348	Kenya	AFRVP	1993	PARASTATAL REFORM TA	Private Sector Devel	23.3
1367	Kenya	AFRVP	1995	INST. DEVELOPMENT	Private Sector Devel	25.4
1552	Madagascar	AFRVP	1992	VOC. EDUCATION	Social Protection	22.8
1553	Madagascar	AFRVP	1993	FOOD SECURITY & NUTR	Social Protection	21.3
1555	Madagascar	AFRVP	1997	PRIV SECT DEV & C.B.	Private Sector Devel	23.8
35608	Niger	AFRVP	1998	TRANSP. INFRA. REHAB	Transportation	28
48606	South Africa	AFRVP	1995	IND. COMPET&JOB CREAT	Social Protection	46
41280	Togo	AFRVP	1998	PUB.ENT.RESTR.&PRIV.	Private Sector Devel	30
3236	Zambia	AFRVP	1998	NATIONAL ROAD	Transportation	70
34618	China	EAPVP	1996	CN-LABOR MARKET DEV.	Social Protection	30
3952	Indonesia	EAPVP	1994	SKILLS DEVELOPMENT	Education	27.7
36052	Mongolia	EAPVP	1998	ULAANBAATAR SERV.IMP	Water Supply & Santn	16.7
8252	Albania	ECAVP	1994	LABOR MRKT DEV	Social Protection	5.4
8265	Albania	ECAVP	1994	SOCIAL SAFETY NET	Social Protection	5.5
35768	Armenia	ECAVP	1996	SIF	Social Protection	12
44389	Bosnia-Herzeg.	ECAVP	1996	EMG RECOVERY	Multisector	45
8323	Bulgaria	ECAVP	1997	SOC INS ADM	Social Protection	24.3
8495	Hungary	ECAVP	1993	PENSIONS ADM & HEALTH	Public Sector Mgmt.	132
8506	Kazakhstan	ECAVP	1995	SOCIAL PROTECTION	Social Protection	41.1

Annex 1.1 – List of Projects at the World Bank (cont'd.)

Project ID	Country	Region	FY	Project Name	Sector Group	Project Loan Amt in $ millions
8515	Kyrgyz Republic	ECAVP	1995	SOCIAL SAFETY NET	Social Protection	17
35807	Latvia	ECAVP	1997	WELFARE REFORM	Social Protection	18.1
38092	Macedonia	ECAVP	1995	SOCIAL REF	Social Protection	14
8582	Poland	ECAVP	1991	EMPLYMT PROMO	Social Protection	100
8776	Romania	ECAVP	1995	(ESPP) EMPLOY. & SOC. PROTECTION	Social Protection	55.4
8822	Russian Fed.	ECAVP	1993	EMPL. SERVICES & SOC. PROT.	Social Protection	70
44202	Tajikistan	ECAVP	1997	PILOT POV ALLEV	Social Protection	12
9064	Turkey	ECAVP	1993	EMPLOYMENT & TRG	Social Protection	67
45940	Ukraine	ECAVP	1997	SOC PROTECT SUPPORT	Social Protection	2.6
35495	Argentina	LCRVP	1996	SOCIAL PROTECTION	Social Protection	152
6041	Argentina	LCRVP	1998	SMALL FARMER DV.	Agriculture	75
57396	Bolivia	LCRVP	1998	REGULATORY REFORM & PRIVAT. (TA)	Economic Policy	20
7164	El Salvador	LCRVP	1997	PUBLIC SECTOR MODERN	Public Sector Mgmt.	24
7326	Haiti	LCRVP	1997	FOREST & PARKS TA	Environment	21.5
34607	Honduras	LCRVP	1996	PUB SEC MOD TAC	Public Sector Mgmt.	9.6
7387	Honduras	LCRVP	1996	PUB SEC MOD SAC	Public Sector Mgmt.	55
7724	Mexico	LCRVP	1993	LABOR MARKET & PROD.	Education	174
34490	Mexico	LCRVP	1995	MX: TECHNICAL EDUC/TRAINING	Education	265
7786	Nicaragua	LCRVP	1993	SOC INV FUND	Social Protection	25
7790	Nicaragua	LCRVP	1997	RURAL MUNICIPALITIES	Agriculture	30
8062	Peru	LCRVP	1994	SOC DEV FUND	Social Protection	100
54667	Peru	LCRVP	1998	EL NINO EMERGENCY LN	Transportation	150
4978	Algeria	MNAVP	1996	SOCIAL SAFETY I	Social Protection	50
39647	Iran	MNAVP	1995	LSMS	Social Protection	

Annex 1.1 – List of Projects at the World Bank (cont'd.)

Project ID	Country	Region	FY	Project Name	Sector Group	Project Loan Amt in $ millions
5745	Tunisia	MNAVP	1996	2ND EMPL. & TRG.	Education	60
5912	Yemen, Rep. of	MNAVP	1996	VOC. TRAINING	Social Protection	24.3
40985	Bangladesh	SARVP	1997	POVERTY ALLEVIATION (MICROCREDIT I)	Finance	105
53578	Bangladesh	SARVP	2002	SOCIAL INVESTMENT PROGRAM	Finance	50
10505	India	SARVP	2000	RAJASTHAN DPIP	Social Protection	100
45049	India	SARVP	2000	AP DPIP	Social Protection	111
49301	India	SARVP	1997	A.P. EMERG. CYCLONE	Public Sector Mgmt.	150
					Total	**2,836.9**

Annex 1.2 – Sample Template for Project References

Project ID: 8582	**Region:** ECA	**Country:** Poland
Project Name: Employment Promotion and Services Project		
FY: 1991	**Loan Amt ($ mill.):** 100	**Sector Group:** Social Protection
Name of ICT Component: Automation of Labor and Social Welfare Offices (ALSO)		

Description of ICT Component:

1. SUP – Labor Offices System

- Automation of some 450 Labor Offices supporting the following processes:
- Registration of unemployed, job offers, and job seekers
- Job matching
- Supervision of Labor Fund flows
- Registration, calculation, and payment of unemployment benefits
- Labor Market Information
- Administrative operations of Labor Offices

- Application SW for the supported processes (Computerland)
- Vertically and horizontally integrated system
- Modules: Administration, Finance, Formal Person Servicing, Job Exchange, Periodical Jobs, Training and Advising, Financial Benefits, Statistics, Personnel, Payroll, Material Administration, Loans, Legal Acts, Effectiveness Indicators, Substitute Army Service, Foreigner Employment, Fund of Guaranteed Labor Benefits, Legal Employment Check, Correspondence Flow, Appeals/Complaints/Proposals, Abroad Employment

- Client-Server Architecture including the following HW (Siemens-Nixdorf)
- 71 UNIX Servers, 464 Pentium Servers
- 5,270 Pentium Workstations
- 2,789 Printers, 535 modems, 535 Uninterrupted Power Supply
- Cabling partially by Labor Offices (406), Optimus (86), and Olivetti (34)

2. SPS – Social Welfare System

- Automation of some 2,500 Social Welfare Offices

- Application SW (Computerland) includes the following modules:
Client servicing, Finance and Accounting, Cooperation with non-government organizations, Statistics and Reporting, System Administration

- Client-Server Architecture including the following HW (Bull)

- 2,590 Servers
- 2,945 Workstation
- 3,474 Printers

Implementing Agency: Ministry of Labor and Social Welfare	
Task Team Leader: David Fretwell	**ICT Amt ($ mill.):** 60

Annex 2.1 – Example Australia

Centrelink: Linking Social Services to the Benefit of Citizens

Centrelink is a public service provider which was officially launched as part of the Federal Government's public sector reforms in 1997 with the objective to produce more efficient and streamlined services to people who need to obtain information or assistance from a range of Commonwealth Government programs.

A better service for customers

The creation of Centrelink has provided a more efficient service for all its customers. Bringing the customer contact and service delivery functions of different Government departments under one roof will make it easier for Centrelink's customers to access the services they need.

The physical layout of most Centrelink offices has also being changed, to make them more customer-friendly. Counters are being replaced by open-plan customer bays, where people can conduct their business with staff on a one-to-one basis.

A new Customer Charter has been developed, outlining customers' rights and the information they are expected to provide to assist with the processing of their requests.

The name, Centrelink, reflects the centralized approach of the agency, linking Australians to the services they need and for which they qualify along their life cycle, which is demonstrated by the following picture.

The services of Centrelink

Centrelink Customer Service Centres provide, under one roof, a range of customer services currently being delivered for:

- Department of Family and Community Services
- Department of Education, Training and Youth Affairs
- Department of Health and Aged Care
- Department of Employment, Workplace Relations & Small Business
- Department of Veterans` Affairs
- Department of Agriculture, Fisheries & Forestry
- Department of Transport and Regional Services
- Department of Communication, Information Technology & the Arts
- Tasmanian State Government, and
- State & Territory Housing Authorities

The services include:

- all services formerly provided by DSS offices, as well as childcare and student assistance payments and services;
- registration and acceptance of all new applicants for income support and employment assistance;
- self-help job search facilities, including computer access to a national job vacancies database;
- referrals for employment assistance; and
- specialist labour market assistance services for disadvantaged groups, including Aboriginals and Torres Strait Islanders, sole parents, people with disabilities,migrants and young people.

Programs and information services administered by Centrelink

For retired people or people planning retirement

- Age Pension
- Financial Information Service
- Pensioner Concession Card
- Commonwealth Seniors' Health Card
- Pensioner Bonus Scheme

For people in special circumstances

- Disability Support Pension
- Career Payment
- Sickness Allowance
- Mobility Allowance
- Carer Allowance
- Postal Concessions for the Blind
- Special Benefit
- Bereavement Allowance
- Bereavement Payments
- Widow Allowance

- Widow Pension Class B
- Partner Allowance
- Pensioner Concession Card
- Farm Household Support
- Drought Relief Payment
- Disaster Relief Payment
- Health Care Cards
- Wife Pension
- Remote Area Allowance

For job seekers students and young people

- Youth Allowance
- Austudy
- ABSTUDY
- Assistance for Isolated Children Scheme
- Pensioner Education Supplement (PES)
- Loan Supplement (for the above payments)
- Newstart Allowance
- Community Development Employment Projects (CDEP) Participants Supplement (CPS) and Supplementary Benefits (Add-Ons)
- Mature Age Allowance
- Mature Age Partner Allowance

For Families

- Family Allowance
- Family Tax Payment
- Double Orphan Pension
- Maternity Allowance
- Parenting Payment
- Jobs, Education and Training program
- Maternity Immunization Allowance

Annex 2.2 – Example Canada

Human Resources Development Canada: Focus on Citizens

The Department of Human Resources Development Canada (HRDC) was officially created by Bill C-11- ***The Department of Human Resources Development Act*** which came into force on July 12, 1996. From November 1993 to the enactment of Bill C-11, HRDC had been operating under a series of Memoranda of Understanding involving various components of the founding departments: Employment and Immigration Canada, Health and Welfare Canada, Labour Canada, Secretary of State and the Department of Multiculturalism and Citizenship.

Vision

- provide the highest quality services
- count on human ingenuity and innovative technology
- provide Canadians with a full array of service choices
- maximize client service at first point of contact

Responsibilities

HRDC's main objectives are:

- helping Canadians prepare for, find and keep work
- assisting Canadians in their efforts to provide financial security for themselves and their families
- promoting a fair, safe, healthy, stable, cooperative, and productive work environment.

HRDC is responsible for:

- Employment Insurance Programs (such as Employment Insurance)
- Human Resources Investment Programs (such as Canada Student Loans)
- Income Security Programs (such as Canada Pension Plan and Old Age Security)
- National Labour-related activities (such as the Canada Labour Code)

Key drivers of client satisfaction

- timely service – by far the most important
- fair treatment
- competent knowledgeable staff
- courtesy
- getting the result you want

Improving government service delivery

The following table is the result of a survey among citizens and reflects the priorities the federal government is expected to place on each of the following areas?

Area	High Priority	Med. Priority	Low Priority	Undecided
Simplify forms and reduce red tape	82	11	5	2
Make government service easier to find and access	77	14	7	2
Provide one-stop service where you can access a wide range of programs in one place	68	18	11	3
Improve the courtesy and promptness of staff	66	21	10	3
Reduce line-ups and waiting times	58	24	15	3
Improve telephone service	54	26	18	2
Advertise government services better	53	24	22	1
Extend hours of service	49	28	20	3
Provide service through new technologies such as the Internet	49	23	24	4
Place more government services in shopping centres	37	29	32	2

Annex 3.1 – Cost Categories

Category	Type	Examples
1. Investment Costs	Technical Assistance	• Studies (e.g. cost-benefit analysis, impact analysis, review of business processes and organizational structure) • Strategic Systems Plan • Implementation Plan • Market assessments • Agency standards review on technologies, information, codes, forms • Needs assessment (functional requirements, technical specifications) • System analysis • Project Management • Contract Management (procurement) • Quality assurance • Training programs • Post-implementation reviews (cost-benefit, impact)
	Equipment	• Hardware (Computer, Network Components, Peripherals) • Testing, Piloting, Deployment, Installation, Integration with existing HW components • Other office equipment
	Software	• Software (System SW, Application SW, Development SW, Database SW) • Testing, Piloting, Deployment, Installation, Integration with existing SW components • Data migration
	Training	• Fellowships/Study visits • Technical training (e.g. systems, network, and SW administration) • User training • Training materials (printing, distribution)
	Facilities	• Site preparation (cabling, conditioning, security) • Facility renovation • Furnishings

Annex 3.1 – Cost Categories (cont'd)

Category	Type	Examples
2. Recurrent Costs	Personnel	• Staff salaries • Overhead (Management staff)
	Supplies	• Consumable materials • Spare parts
	Maintenance & Support	• Hardware • Software • User help desk
	Operational	• Hardware lease • License fees • Communications charges • Service fees (IT Outsourcing) • Building lease • Overhead (premises, utilities) • Other administrative costs
3. Contin-gencies	Physical	• Follow-on investments in the context of change management (HW upgrades, Software updates or changes), usually 5-10% of the base investment and recurrent costs
	Price	• Price increases of local and foreign costs

Annex 3.2 – Investment and Recurrent Costs along the Project Cycle

Category Project Cycle	Investment Costs	Recurrent Costs
Initiation	Technical Assistance: • Studies (e.g. cost-benefit analysis, impact analysis, review of business processes and organizational structure) • Strategic Systems Plan • Agency standards review on technologies, information, codes, forms • Market assessments • Project Management • Quality assurance • Training programs	Personnel: • Staff salaries • Overhead (Management staff)
Design	Technical Assistance: • Implementation Plan • Needs assessment (functional requirements, technical specifications) • System analysis • Project Management • Quality assurance • Training programs Training: • Fellowships/Study visits • Technical training (e.g. systems, network, and SW administration) • User training • Training materials (printing, distribution) Facilities: • Site preparation (cabling, conditioning, security) • Facility renovation	Personnel: • Staff salaries • Overhead (Management staff)

Annex 3.2 – Investment and Recurrent Costs along the Project Cycle (cont'd)

Category Project Cycle	Investment Costs	Recurrent Costs
Acquisition	Technical Assistance: • Contract Management (procurement) • Project Management • Quality assurance Equipment: • Hardware (Computer, Network Components, Peripherals) • Other office equipment Software: • Software (System SW, Application SW, Development SW, Database SW) Facilities: • Furnishings	Personnel: • Staff salaries • Overhead (Management staff)
Implementation	Technical Assistance: • Project Management • Quality assurance • Training programs Equipment: • Testing, Piloting, Deployment, Installation, Integration with existing HW components Software: • Testing, Piloting, Deployment, Installation, Integration with existing SW components • Data migration Training: • Fellowships/Study visits • Technical training (e.g. systems, network, and SW administration) • User training • Training materials (printing, distribution)	Personnel: • Staff salaries • Overhead (Management staff) Operational: • Building lease • Overhead (premises, utilities)

Annex 3.2 – Investment and Recurrent Costs along the Project Cycle (cont'd)

Category Project Cycle	Investment Costs	Recurrent Costs
Operation	Technical Assistance: • Post-implementation reviews (cost-benefit, impact) • Quality assurance • Training programs Equipment: • Follow-on investments out of contingency Software: • Follow-on investments out of contingency Training: • Due to follow-on investments (HW and SW changes) and for new staff • Training materials (printing, distribution)	Personnel: • Staff salaries • Overhead (Management staff) Supplies: • Consumable materials • Spare parts Maintenance & Support: • Hardware • Software • User help desk Operational: • Hardware lease • License fees • Communications charges • Service fees (IT Outsourcing) • Building lease • Overhead (premises, utilities) • Other administrative costs

Annex 3.3 – Benefit Categories

Category	Tangible benefits	Intangible benefits
Policy	• Modification of income tax rates resulting from higher contributions revenues due to improved compliance and fewer expenditures due to fraud and abuse detection and prevention • Modification of contribution and/or benefit rates resulting from higher contributions revenues due to improved compliance and fewer expenditures due to fraud and abuse detection and prevention	• Strengthen the decision-making process due to improved data provision • Improved corrections or modifications of political decisions, e.g. change of the tax rate due to revenue increases • Ability to estimate the impact of proposed policy alternatives based on financial projections due to modeling Software • Transparency and anti-corruption • Improved sustainability of the SP policy • Support of integrated Social Risk Management with one IT platform for different SP programs
Program	• Increases in revenues due to improved compliance in the payment of social contributions through unified electronic contribution collection with automatic notification and follow-up auditing • Expenditure savings due to improved fraud and abuse detection and prevention by nationwide cross-matching computer systems and on-line check during means-testing • Gray market employment detection due to on-site inspections with on-line connection to contribution and benefit databases via notebook and mobile	• Improved management, monitoring, evaluation of social protection and labor programs • Improved delivery and sustainability of the social safety net and basic social services • Improved public confidence in SP programs • Strong in-house capacity to evaluate the long-run financial balance of SP programs • Ability to integrate the contribution collection in the context of different programs (e.g. pension, sickness, industrial accident, unemployment, and health insurance) into one IT system

Annex 3.3 – Benefit Categories (cont'd)

Category	Tangible benefits	Intangible benefits
Institution	Cost/time savings through: • Reduction in delays between claim filing and benefit payment due to on-line access to eligibility databases • Simplification and/or elimination of routine and repetitive tasks • Increased processing speed of registration, claims, contribution collection, and benefit calculation and payment • Ability to share information, communications, and files through the SP agency network • Reduction in staff through automation of manual processes such as registration, claim filing, job placement, vocational counseling • Electronic document management and archiving systems for contributions and work history reporting • Less printing, paperwork, duplication of paper forms, and file space for paper • Faster turnaround in providing statistical reports • Cost avoidance of new staff due to increased workload	• Provide more relevant, accurate, and timely data and information to the right people at the right time • Transparent accounting • Improved user friendliness • Development of IT skills (managerial, technical and user level) • Additional processing capacity for increased workload • Increased information accuracy • Replacement of low-value staff activities with high-value work • Skills-based job placement due to intelligent software • Improved quality of almost all major functions of SP agencies

Annex 3.3 – Benefit Categories (cont'd)

Category	Tangible benefits	Intangible benefits
Public	Cost/time savings through: • Self-service systems for citizens (Internet, Call Center, Public Kiosks, ATMs) offering electronic information, registration, claim filing, and benefit payment • Electronic information, registration, and contribution collections systems for employers • Cost avoidance for public transportation, gas and parking, leave due to fewer face-to-face meetings	• Improved quality of the service to the public (accessibility to social services at any time and any place) • Improved IT skills by using automated self-service systems (self-learning effect) • Improved customer satisfaction • Focus on citizens and employers as customers of SP agencies by offering one-stop centers on the basis of integrated IT platforms

Annex 3.4 – Specific Benefit Examples

Benefit	Country and Project	Example
Financial projections	Latvia: Welfare Reform Project (1997-2002)	The total fiscal impact including revenue increases due to better information systems combined with new benefit formulas and expenditure savings due to fraud detection and prevention is expected to be about 2.5 percent of GDP per year after 10 years.
	Bulgaria: Social Insurance Administration Project (1996-2001)	The 1996 present value of savings to the fund was BUL 14.5 billion (pessimistic scenario) or BUL 141.5 billion (optimistic scenario) by 2020. The increased revenues could be used to reduce the 1996 tax rate by 1.67 percentage points (pessimistic scenario) or by 3.5 percentage points (optimistic scenario) in 2004.
	Poland: Employment Promotion and Services Project (1991-1999)	It is estimated that the automation of some 450 local labor offices and 2,500 social welfare offices improves compliance, administrative processes as well as the detection of gray market employment and fraud, which would lead to an increase of the effectiveness of spending some US$ 3 billion annually of the Labor and Social Welfare Fund by one percent. Thus, the automation would be paid back to Polish taxpayers in 2 years.
Fraud detection	USA (Oregon): Computer cross-match system (1996)	In 1996, county courts in Oregon convicted 56 people of defrauding the unemployment fund. Those convicted last year were ordered to repay the state nearly $250,000. The Employment Department uses a computer cross-match system to detect fraud.
	USA (California): Biometric technologies for fraud detection in Social Security (1994)	California estimates that finger-imaging welfare clients in 7 counties saved the State over $86 million in the first 2 years of operation.

Annex 3.4 – Specific Benefit Examples (cont'd)

Benefit	Country and Project	Example
Fraud detection (cont.)	USA (Connecticut): Biometric technologies for fraud detection in Social Security (1996)	Including case closings and attempted dual enrollments, the Department of Social Security estimated savings of $9 million and $6 million in the first 2 years of operation, respectively.
	USA (North Carolina): Computer Scanning for fraud detection (1996)	According to the Employment Security Commission (ESC), more than $ 2.3 million in fraudulent unemployment insurance payments was recovered in 1996. Using computer technology, which allows ESC to scan approximately 200,000 claimant files each quarter, a total of 3,466 cases were investigated in 1996, with 1,107 individuals being tried and 1,106 being convicted for illegally obtaining unemployment benefits.
	USA (New York): Biometric technologies for fraud detection in Social Security (1995)	As of December 1998, New York' s Department of Social Services (DSS) had enrolled about 1 million individuals in its finger-imaging data base. DSS estimated savings of $396 million over the first 2 years of the program. These savings resulted from 1,437 case denials for refusal at intake, 45,030 case closings, and 379 fraud investigations for dual enrollees.
Cost savings	Italy: Publincontro – Self-service kiosk systems for social service delivery (1990s)	Reduction in requests for leave during working hours to apply for service: 72,000 million Lira in the first three years of operation. Reduced traffic congestion due to better distribution of kiosks compared with central government offices: 120,000 million Lira in the first three years of operation.

Annex 3.4 – Specific Benefit Examples (cont'd)

Benefit	Country and Project	Example
Cost savings (cont.)	USA (Michigan): MARVIN – Michigan's Automated Response Voice Interactive Network (1995)	MARVIN was launched in 1995 by the Michigan Employment Security Agency as a high-tech alternative to the Agency's old system for administering unemployment benefits. Savings from reduced staffing of temporary workers once used when unemployment claims increased due to layoffs were projected to result in $ 1 million in 1997. Further annual savings of $ 200,000 were due to less paperwork (6.4 million forms eliminated by MARVIN).
	USA (Idaho): Tel-A-Claim - Unemployment Insurance Telephone Reporting (1995)	In order to receive their unemployment insurance checks every week, unemployed workers can use telephone reporting based on voice response technology instead of submitting paper reports and receiving a check every other week. Telephone reporting has reduced the annual processing costs of the Department of Labor by $ 125,000.
	Finland: Document Imaging System of Social Insurance Institution (1996)	The savings in staff costs achieved through the introduction of document imaging was about 5.5 % in spring 1996.
	USA (California): Call Center for Unemployment Insurance claim filing (1997)	Costs per UI claim filing process reduced from $ 31.27 (urban areas) and $ 87.05 (rural areas) to $ 1.25.
	USA (Wisconsin): Telephone Initial Claims (1997)	As a result of the cost-benefit-analysis for the UI claim filing via Call Center, the Project Internal Rate of Return is 10.1 %, the break-even point after 4 years, and net annual savings after fully operational is about $ 1 million per year.
	USA: Individual retirement accounts (1998)	Providing account information over the internet costs 1 % of the cost of providing the information by an operator responding to an 800 number, and 4 percent of the cost of providing it by an automated 800 number.

Annex 3.4 – Specific Benefit Examples (cont'd)

Benefit	Country and Project	Example
Time savings	Latvia: Welfare Reform Project (1997-2002)	Benefit processing time will fall from up to 2 weeks to less than 1 day, with a lower error rate.
	USA (California): Call Center for Unemployment Insurance claim filing (1997)	UI claim filing time reduced from 272 (urban areas) and 388 (rural areas) minutes to 15 minutes.
	Finland: Document Imaging System of Social Insurance Institution (1996)	In the traditional claims processing environment, 11% of total person-hours was spent on document management, compared to 2 % after imaging was introduced.

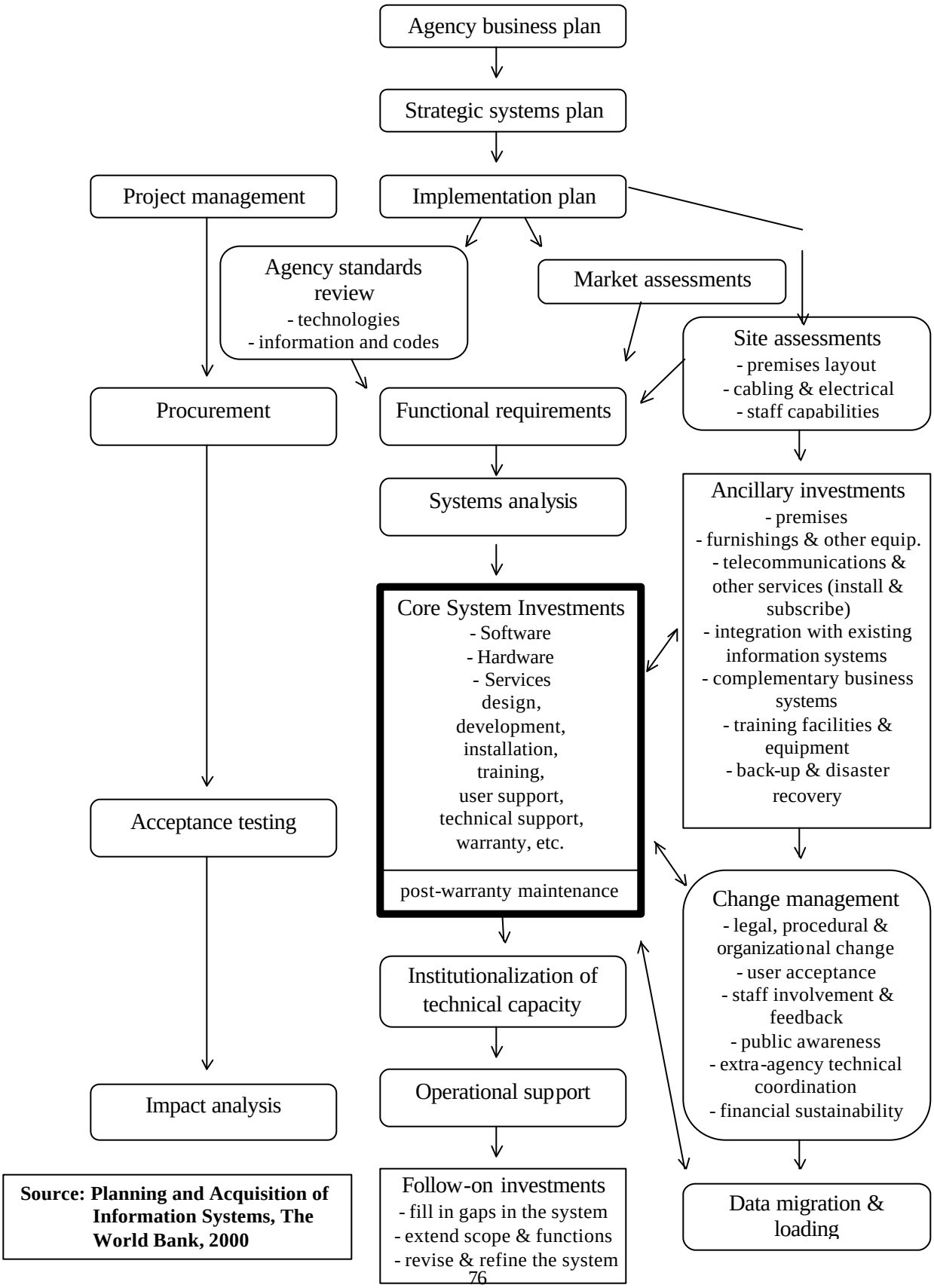
Annex 3.5 – Example California

Unemployment Insurance in California, USA: In-person claim filing (Office visit) versus Telephone Claim Filing (TCF)

Activity	Urban Area (San Diego)		Rural Area (57-mile drive)	
Activity	**Office visit**	**TCF**	**Office visit**	**TCF**
Time spent commuting to the field office	22 minutes	0	60 minutes	0
Time spent completing the forms	15 minutes	0	15 minutes	0
Time spent waiting for next available agent	96 minutes	4 minutes	60 minutes	4 minutes
Time spent filing the claim in the field office	13 minutes	11 minutes	13 minutes	11 minutes
Time spent commuting from the field office	22 minutes	0	60 minutes	0
Total time for one trip	168 minutes	0	208 minutes	0
Time for follow-up visit (travel + 1 hour)	104 minutes	0	180 minutes	0
Total time	272 minutes	15 minutes	388 minutes	15 minutes
Round trip mileage	20 miles	0	114 miles	0
Total mileage (round trip doubled)	40 miles	0	228 miles	0
Commute costs $ 0.24 per mile	$ 9.60	0	$ 54.72	0
Time costs $ 5.00 per hour	$ 22.67	$ 1.25	$ 32.33	$ 1.25
Total costs	$ 31.27	$ 1.25	$ 87.05	$ 1.25

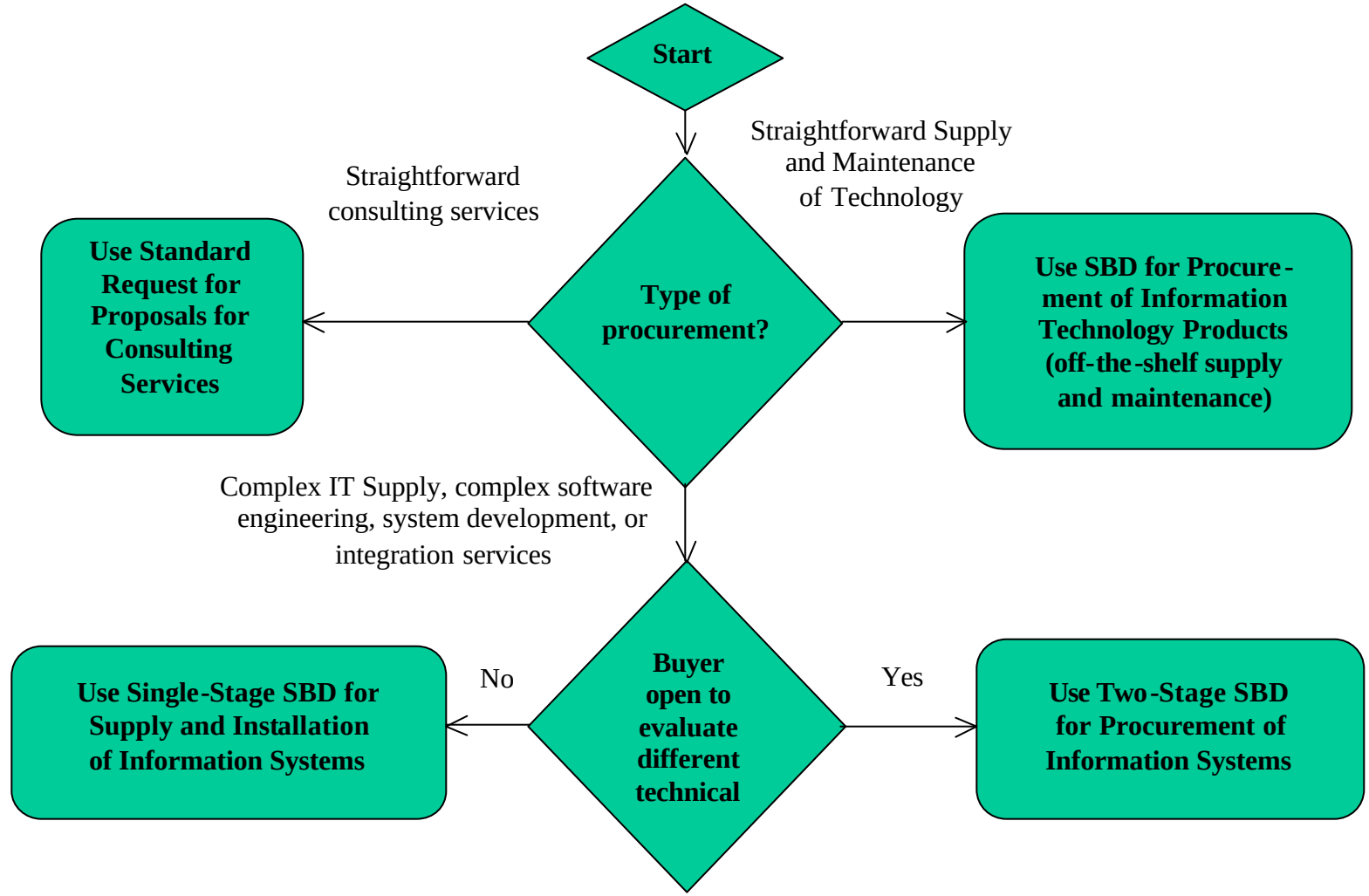
(Source: Employment Development Department, California, 1997)

Annex 4.1 – Generic Project Cycle Model



Source: Planning and Acquisition of Information Systems, The World Bank, 2000

Annex 4.2 – Decision Tree for Standard Bidding Document



Source: IT Procurement, Technical Note 8, The World Bank, 2000

Annex 4.3 – General Questions for Project Evaluation

General Questions

- Was there a strategic information technology plan and how did the project fit into it?
- What was the expected and what is the present outcome?
- How long is the expected life cycle of the implemented system, i.e. when has the system to be changed substantially or replaced?
- What were the obstacles to successful project implementation and could they be prevented?
- Were there any conflicts between budget, schedule and functionality of the system during the project implementation and how could they be solved?
- What can the organization learn from its experience with the IT project?

Business Needs

- What were the initially identified business processes to be supported by the IT system?
- What were the problems that needed to be solved by the new IT system?
- To which extent has the new IT system led to process re-engineering?
- Is the implemented system still meeting the needs of the organization, or is it time to consider its replacement or substantial alterations?
- Is the IT system built in a modular concept that can be extended by additional modules in case of new business needs at low costs?
- Is the system compatible enough to be integrated with IT systems of other Social Protection or governmental systems?
- To which extent had end users with all their needs and experience been involved in the design of the IT components?

Organizational Changes

- To which extent has the new IT system led to organizational re-structuring?
- Are there any improvements of the overall organizational performance due to the use of the new IT System?

Costs and Benefits

- Were there measurable project goals, such as administrative cost reduction, higher productivity, increasing administrative efficiencies?

- What are the quality improvements due to the use of the new IT system (staff satisfaction, quality of information, accessibility of information, user friendliness, operating performance, i.e. how often system crashes, response time of system or technical support in reasonable time)?

- Is there a cost/benefit analysis and does the cost/benefit analysis justify the project?

- To which extent can the new IT system be used in order to deliver data for decision making processes on management level?

- To which extent can human errors be avoided by the use of IT?

- Are there any savings out of fraud detection and prevention by the use of the new IT system?

- Did the plan include total project costs, including long-term maintenance? Who will pay for these costs? Will they be compensated by efficiency gains?

- Were there any cost and time overruns? If yes, what were the reasons? If no, how could costs and time be saved during project design and implementation?

- Were the expenditures of time and resources during project design and implementation tracked against those projected in the project proposals and what was the impact of any differences on costs and benefits?

- Were there any changes to the project specifications due to changes of political and legal environment and what was the impact of these changes on costs and benefits?

- Are the costs and benefits in line with those projected, and if not what are the consequences of the differences?

- Are there any unexpected costs and benefits and what action needs to follow?

- Were there any coordination problems in terms of the delivery of the different systems components? If yes, what was the impact on costs and benefits?

Procurement Approaches

- Was the procurement process of the different IT components based on technical specifications or on functional requirements?

- If the procurement was based on functional requirements, what was the price/performance ratio in the bid evaluation?

- Were there any preferences for a certain contractor? If yes, how did this influence the procurement process?

- Were there any problems in terms of communication among multiple contractors and how were they solved?

- Which components of systems development should be carried out in-house or outsourced?

- How effective is the in-house (or outsourced) development and operational work?

- Should resources be concentrated on the development of new application software, or on the customization of existing framework applications?

- What is the ratio of international/local contracting?

Management/User Commitment

- Who were the stakeholders and is the value of the project outcome reflecting the values of the stakeholders?

- Were the stakeholders committed to the project throughout the design and implementation phase? If not, what was the impact of any lack of management commitment?

Change Management

- What were the major changes that had to be implemented in order to achieve the project objectives?

- Was there a defined change management approach and how did it look like?

Training, Skills, and Qualification

- Did the client have the necessary resources and skills to implement the project successfully?

- How did the learning and training process of staff on different levels look like?

- What are the incentives in order to avoid qualified IT staff moving to the private sector?

Annex 4.4 – Sample Questionnaire of the ESSP Project in Russia

Employment Service and Social Protection Loan
Questionnaire

Evaluation of technical sub-component of the Social Protection Component

Code of the region: [__]

Code of the settlement: |__|

Code of respondent: |__|__|

Date of interview: Day |__|__|Month|__|__|

A. Passport of the Questionnaire

1. Title of respondent
_____

2. Gender
1. Male
2. Female

3. Age _____ years

4. Education
1. incomplete secondary
2. secondary
3. vocational
4. incomplete higher
5. higher

5. Number of staff reporting to the respondent _____ people

B. General Information

6. Before the equipment was delivered, did your department have an automation plan?
1. Yes (go to question 7)
3. No (go to question 8)

7. Did delivery of equipment assist you in implementation of this plan and to what extent?
1. Yes, completely
2. Yes, partially
3. No, this equipment was not envisaged in our plan

8. Does the quality of equipment meet your initial expectations?

1. Yes
2. Not fully
3. Not at all

9. How long can this equipment work without any significant replacements (according to your opinion)?

1. __ years
2. __ months
3. replacement is already needed.

10. What is the period of life cycle of equipment according to specifications __ years

11. Please list types of activities, which are facilitated by the usage of this equipment (mark all answers)

1. Assignation of pensions, calculation of pension amount, and additional pension payments
2. Maintenance of database on pensioners
3. Accounting and reporting
4. Communication to other regions and organizations
5. Other (specify) _____

12. What types of equipment are you personally working with (mark all answers)?

1. Servers
2. Working stations
3. Printers
4. Modems
5. Copying machines
6. Network equipment

C. Technical Information

13. Please assess quality of different types of equipment

	Excellent	Good	Satisfactory	Fair	Poor
Servers					
Working stations					
Printers					
Modems					
Copying machines					
Networks					

14. Is it possible to purchase additional separate modules of equipment, if needed? Could any problem arise related to its compatibility with current system?

1. Yes, possible (problem will not arise)
2. Possible, but there could be some compatibility problems
3. Impossible

15. Is the equipment compatible to other technical systems used in social protection offices?

1. Yes, completely
2. Yes, partially
3. No
4. Other (specify) ___

16. Is the capacity of servers sufficient to implement activities of your department (unit)?

1. Yes, sufficient enough
2. Not fully sufficient
3. Not sufficient at all

17. Is the capacity of working stations' processor sufficient to implement activities of your department (unit)?

1. Yes, sufficient enough
2. Not fully sufficient
3. Not sufficient at all

18. Is the workstations' memory capacity sufficient to implement activities of your department (unit)?

1. Yes, sufficient enough
2. Not fully sufficient
3. Not sufficient at all

19. Please list types of software offered under the project

_____

_____

20. To what extent offered software meet demands of your work?

1. fully
2. partially
3. somewhat
4. not at all

21. Has there been any work done to improve software to meet your demands?

1. No (go to question 23)
2. Yes (go to question 22)
3. We use software developed in our region (go to question 23)

22. Who worked on these improvements?
1. Specialists of our department
2. Specialists from regional department of social protection
3. Specialists from Moscow responsible for delivery of equipment
4. Other (specify) _____

D. Delivery, installation and maintenance

23. Was the computer equipment delivered as planned?
1. Yes (go to question 25)
2. with non-significant delays (go to question 24)
3. with significant delays (go to question 24)

24. What caused these delays?
1. customs duty or taxes were not paid in time
2. office space was not prepared
3. lack of coordination between local authorities and Moscow suppliers
4. other (specify)

25. Where is the nearest guarantee service center for computer equipment?
1. regional center
2. rayon center
3. other (specify) ___

26. Where is the nearest guarantee service center for copying equipment?
1. regional center
2. rayon center
3. other (specify) ___

27. How many times during guarantee period your department (unit) appeal to the service center because the equipment was out of order?
__ times (computer equipment)
__ times (copying equipment)

28. How many units of equipment have been completely changed during the guarantee period?

Servers	___ units
Working Stations	___ units
Printers	___ units
Modems	___ units
Copying Equipment	___ units
Network Equipment	___ units

29. Are you satisfied with quality of guarantee service of equipment?

	Computer Equipment	Copying Equipment
Completely satisfied		
Satisfied		
Not fully satisfied		
Not satisfied at all		

30. Who is responsible for maintenance of equipment since the end of guarantee period?
Computer equipment _____
Copying equipment _____

31. How many units of equipment went out of order since the end of guarantee period?
Servers ___ units
Working Stations ___ units
Printers ___ units
Modems ___ units
Copying Equipment ___ units
Network Equipment ___ units

32. Is it possible to use available supplies while working on delivered equipment?
1. Possible
2. Possible, but not for all supplies
3. No, the supplies required by this equipment are too expensive

E. Training of personnel

33. What is the share of employees with computer skills?
1. before the project __%
2. currently __%

34. Who trained employees of your department (unit) to work with computer equipment?
1. Specialists from rayon
2. Specialists from regional center
3. Specialists of the Ministry of Social Protection
4. Nobody (go to question 36)
5. other

35. Where was the training conducted?
1. at the workplace
2. in regional center
3. at the Ministry of Social Protection
4. Other (specify) ____

36. Were you personally trained under the project?
1. Yes
2. No (go to question 40)

37. What did you study?
1. how to work with computer
2. how to work with copying equipment
3. application of software
4. other (specify) ___

38. Please assess the quality of training
1. Excellent
2. Good
3. Satisfactory
4. Fair
5. Poor

39. To what extent obtained skills are useful for your work duties?
1. Very useful
2. Useful
3. Partially useful
4. Not very useful
5. Not useful at all

40. Do you think that there is currently a need to upgrade computer skills of employees of your department (unit)?
1. Yes
2. No

41. Is it possible to do it in your region?
1. Yes
2. Yes, but we do not have financial resources to implement it
3. No

42. What other forms of employees' skills upgrading is needed (according to your opinion)?

_____

F. Organizational Issues and General Assessment

43. Did computerization change work procedures (organization) in your department (unit)?
1. Yes (go to question 44)
2. No (go to question 45)

44. In what way? (mark all answers)
1. Number of employees was reduced
2. More efficient distribution of work duties became possible
3. It is now possible to implement more tasks
4. Other (specify) ___

45. How much faster and more convenient for you is the process of looking for needed information now after computerization?
1. Highly significantly (several times)
2. Significantly (appr. 2 times)
3. Not significantly
4. Search process practically did not change

46. Please assess changes in the average period of time required to work with one client?

___ hours (min) before computerization __ hours (min) after computerization

47. To what extent use of computer reduces number of human mistakes?
1. Highly significantly (by several times)
2. Significantly (appr. 2 times)
3. Not significantly
4. Practically does not reduce

48. How did number of pensioners' claims reduce after computerization?
Approximately ___ times

49. Would you like to continue to work with the firm - supplier of the equipment?

	Yes	No
Firm-supplier of computer equipment		
Firm-supplier of copying equipment		

50. What are the main difficulties you faced while working with equipment and software?
_____

51. What would you recommend to implement similar projects if future?
_____

THANK YOU FOR THE INTERVIEW