IBM

Information and communications technology (ICT) social security project management

Ten issues on ICT management in social security organisations

ISSA Working Group

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The **International Social Security Association (ISSA)** was founded in 1927 and is a forum for social security institutions throughout the world. ISSA is an acknowledged partner with everyone interested in the appropriate development of social protection adapted to the genuine needs of populations.

ISSA headquarters in Geneva

ISSA General Secretariat

4 route des Morillons

Case postale 1

CH-1211 Geneva 22

Switzerland

Tel. (+41-22) 799 66 17

Fax: (+41-22) 799 85 09

E-mail: issa@ilo.org

www.issa.int

Preface

This manual is the result of work undertaken within the framework of the ISSA Technical Commission on Information and Communications Technology with the assistance of IBM. We are grateful to all those who contributed their experience to this manual.

Clearly, it is in the interest of both social security organisations and supplier companies that information and communications technology (ICT) projects meet expectations and succeed. Social security managers charged with implementing new technological tools are aware of and understand the need to manage projects in the best way possible. But the reality is that social security ICT projects are too often partial – and sometimes complete – failures. The reasons for this are many, including: complexity arising from importing legacy data; implementation of the latest technologies or integration of ICT systems. ICT hardware and software suppliers want social security ICT projects to perform well; otherwise they suffer from adverse publicity and sometimes financially when ICT projects do not meet expectations.

IBM, a sponsor of the 2002 ISSA ICT International Conference in Valencia on e-government/e-administration in social security, drew on its worldwide experience to contribute to this manual. Rory O'Shea was commissioned by IBM's Global Social Security Practice to work with the ISSA Working Group to prepare the manual which is published jointly by ISSA and IBM.

It is our hope that this manual will inform social security executives and ICT Project Managers (PMs), so that social security ICT projects will have a real chance of meeting their objectives.

Dalmer D. Hoskins
Secretary General
International Social Security Association

Chris Gibbon
Director
Global Social Security Segment
Government Industry
IBM United Kingdom

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Introduction

During the ISSA International Conference on e-government/e-administration in social security organisations in 2002 in Valencia, diverse experiences were presented and discussed under three main headings. These subjects were:

- A new service relationship with clients via the Internet

- The influence of the Internet on information and communication systems

- Integrating the Internet in administrative procedures.

An analysis of the replies to a conference evaluation questionnaire indicated that:

- Participants appreciated the approach and found the presentation of case studies particularly helpful

- Globally, especially in developing countries and countries in transition, there is a high demand from managers of social security organisations for help in implementing ICT projects

- Participants also identified a need for guidance, targeted on the precise needs in social security institutions, about methodological approaches to innovation in their organisations (automation, client-server applications, electronic services, e-government, etc.)

- The value of a manual on methods is independent of the level of development of the national social security ICT infrastructure, but it seems particularly relevant to developing countries.

Mr. Mateos Carrasco, Director General, National Social Security Institute, Spain and President, ISSA Technical Commission on IT, proposed the establishment of a Working Group in order to build on presentations and discussions at the conference. He proposed that the group should deal with specific aspects of the issues which had been raised and should prepare guidelines. The material produced for the conference, along with case studies and experiences presented and discussed at other ISSA meetings as well as additional experiences of projects proposed by the members of the Working Group, have been used to develop this manual on ICT social security project management.

Partnership

IBM's Global Social Security Segment, a sponsor of the Valencia ISSA ICT Conference, co-operated with the ISSA Working Group. IBM has a broad network of worldwide consultants, and one of its objectives is 'building knowledge' based on the experiences – the lessons learned – in the development of social security projects. Clearly, it is in the interest of both social security organisations and supplier companies that ICT projects succeed.

Social security environment

Globalisation, regional cooperation and the opportunities presented by new ICT options will tend to create greater consistency in responses to social security administration issues. Changing consumer demand and demographic issues also mean that many countries, irrespective of their stages of development, face new challenges in managing the delivery of social security benefits.

Some countries are grappling with transition from traditional designs to modern approaches to using ICT, while others are only beginning the journey. However, all countries are contemplating broadly similar technology and development approaches as they prepare for the years ahead.

- Social security schemes in operation today in industrialised countries were designed 50 or even 100 years ago. Most of these countries began using ICT systems many years ago to automate routine clerical tasks in order to achieve the same results faster, more accurately and at a lower administrative cost. These countries, must now look beyond the administrative efficiency arguments and seek better social outcomes.

- In transition countries in Central and Eastern Europe and elsewhere, the introduction of market economies has led to the complete reorganisation of their social security systems. Social security organisations have had to be created or re-engineered to deal with all aspects of social security administration.

- In developing countries, economic circumstances have required major organisational modifications involving the administration of their social security schemes. These changes have been made in response to demands of the public authorities which themselves are often subject to conditions imposed by structural adjustment programmes.

While transition and developing countries may not have as many legacy burdens, they have to find appropriate balances between creating administrative efficiency and laying a solid framework for more flexible social security concepts. This double objective creates additional risks for ICT projects and increases the need for comprehensive project management.

In all countries, more systematic approaches to project management will help achieve success and greater consistency in social security responses and in the ICT technology required; hence, sharing experiences on this important topic becomes more and more important.

Service delivery

A modern social security institution cannot function without computers. During earlier computerisation phases, decisions and choices essentially concerned technical matters and management models. For example, discussions typically centred on such issues as centralised and distributed models and data capture approaches. In recent years, however, many social security institutions have been forced to review their decisions in the light of new information and communications technologies. Data transmission networks, including the Internet, offer more affordable online data processing, in real time, and are one of the key elements of the possible organisational choices. New approaches also offer more choices in balancing the centralised and distributed issues, thus allowing better solutions to be planned that address the needs of the client in his/her terms without compromising the roles of local, regional or central authorities.

In the service delivery methods in industrialised countries, change is due to the availability of more affordable and more reliable technologies. Examples of these include the ability to offer 24-hour service for 365 days a year through the Internet, call centres and various self-service techniques such as kiosks. Further radical changes in service paradigms will be possible as identification and authentication technologies evolve, for example smart cards and public key infrastructure (PKI).

More affordable and reliable identification methods will also permit effective utilisation of customer relationship management (CRM) techniques. It must be emphasised that there are two aspects of CRM. Firstly, there is the approach or concept involved in managing the interactions of a client with the agency more effectively and more consistently. Secondly, there are software products that are covered by the term CRM that vary significantly in functionality. Until the identification issues are solved and irrespective of the tools used, in the context of social security administration, CRM will generally remain of peripheral significance despite the successes already claimed by some of the more progressive institutions.

Risk management
It is not surprising that ICT projects in social security are still regarded as carrying many unquantifiable risks. And there is ample evidence to support this pessimistic view.

IBM's Global Social Security Practice Consultant observed that social security ICT projects that are managed in the traditional way are now more likely to be partial failures than was the case 30 or 40 years ago. The new risks are due to the complexity arising from the need to import legacy data, frequent needs for prolonged co-existence with inflexible and large legacy applications and the growing complexity of leading-edge technology needed to support more complex, distributed and collaborative service delivery models. The modern needs often require ICT and project management skills beyond the traditional levels accommodated by public sector grading and pay conditions.

Additional factors that increase complexity (and therefore risk) are modern trends in social behaviour – new family forms, new styles of working and flexible retirement. Layered on top of the technology and social behaviour dynamics are growing pressures on the approach to social security, reflecting in part financing concerns but also placing emphasis on prevention and rehabilitation. Agencies are also interacting with each other more intensively and in new ways, and they are also increasingly using partnerships with private sector and non-governmental organisations (NGOs).

Information and communications technology (ICT) social security project management

Defining failure

Few large ICT modernisation projects, aiming to replace long-established but increasingly obsolete systems, are delivering all the promised business improvements at the budgeted cost and within the predicted timescale. While few of these projects have resulted in total and expensive failure, it is equally true that few performed better than initially expected. Most have been only partially successful if judged against initial estimates of time, cost and promised benefits. Even where the official position is that projects or initiatives have succeeded, informed observers such as national audit offices and consumer groups often criticise the results of the projects.

Aim of this manual

What are the factors that prevent a more reliable environment for ICT projects in social security? How might social security institutions increase the probability of success? And perhaps most importantly, how can the experiences of the 'early starters' inform the designs and approaches of countries attempting large-scale ICT automation for the first time so that they are more likely to succeed?

If we understand better the pitfalls that now constrain many institutions grappling with acute problems in migrating the best of 1970s or 1980s designs into stable systems, we can aim for new ICT application principles that will support rapid ongoing and more frequent change in the years ahead.

Managing ICT projects better will become a key determinant on how well organisations survive – some will grow, some will be merged and others may lose important segments of their business to private sector operators.

ICT projects undertaken by or for social security organisations are exposed to the normal project risks found in the public and private sectors. In addition, certain specific additional risk factors occur in social security ICT projects with a frequency suggesting that those risks may not be receiving sufficient attention.

By reviewing and analysing projects, lessons can be learned about how to identify and reduce project risks by taking the right steps at the right time to avoid potential problems. Understanding the risks and incorporating risk containment actions in the daily management of ICT projects will lead to better outcomes. The aim of this manual is to help in managing projects and to understand the risks that are related to the ICT projects.

Ten key features of ICT project management

- Project definition

- Project Manager (PM)

- Stakeholders' involvement

- Communication strategy

- Training

- Planning and managing human resource issues

- ICT project management and risk management

- Technology

- Project control and monitoring

- Assessing project progress – Independent project review.

Senior executives will glean ideas on questions that should be answered before projects even begin. They will also see that they can contribute to the likelihood of success by taking a proactive and supportive role right from the beginning.

The advice set out under these ten features is relevant in all countries, irrespective of the current status of their ICT systems or the type of social security system in place. In some cases, the way the advice is interpreted will depend on the local situation. For example, if an organisation is embarking on an ICT project for the first time in many years or if a new organisation is being established, then there may be special considerations.

There is a temptation to adopt the very latest technology when starting a 'greenfields' project. Local ICT experts, who may be straight from university, often advocate the latest thinking – for example, build everything in Java™, all access should be over the Internet, etc. Ten years ago there were cases where client-server architectures with Microsoft® Windows NT® hosts were advocated for ICT projects in developing countries despite the fact that even in Europe and in the United States there was an acute shortage of persons with skills and experience. In fact, there are institutions in Europe still grappling with the final stages of their equivalent architectural visions.

The technology selected has to be appropriate to the available skills and national infrastructure; otherwise, training will be very expensive and there will be high rates of skilled staff turnover. Organisations should match their technological ambitions to local conditions. With this in mind, additional comments are offered to organisations that are being formed or expanded to offer new services.

For senior executives
Senior managers cannot, and probably should not, second guess their ICT Managers and PMs. They can however take steps that will help ensure success and can ask questions that will identify where more attention and planning are needed.

- Are there clear formally documented descriptions of: the project objectives, how the project will begin and end and how it will be evaluated? Remember, if a project is not well defined, users will not willingly accept responsibility.

- Is there a concise formal statement, in a form that stakeholders can readily understand, of expected achievable and measurable outcomes?

- What is the real attitude among the project team to stakeholders? Are they part of the problem or part of the solution? If a senior executive suggests that the stakeholder list is not complete, can the project team quickly identify another stakeholder group? If they can

- Are senior executives on the project communications distribution list? Do they read the communications and seek clarifications?

- Senior executives should attend some of the training sessions, if only to 'kick off' the project. This will encourage the trainers and the trainees, and the executives might discover something that will alert them to previously unknown risks or opportunities

- Who made the decision whether to buy or build the ICT system? Do senior executives know why the particular decision was made? What were the risks under each alternative? Is the ICT project supporting the organisation, or is the organisation supporting an ambitious ICT showcase project?

- Have tolerance levels for project risks been set? Is there a clear statement of acceptable consequences under such headings as cost, timing, impact on the public, adverse publicity, etc?

- Why is new technology being considered?

- Are senior executives aware of the milestones, and will they be kept informed of progress towards each milestone?

- Before problems arise, have well-defined procedures for project review been set up?

Summary

Do all concerned with the project understand that senior executives want to be identified with the project outcome, and do they understand the executives' attitudes to the factors that will determine the success?

Project definition

A project is any temporary, organised effort undertaken to create a unique product, service or result.

Project management is the planning, organisation, monitoring and control of all aspects of a project and includes the motivation of all involved to achieve the project objectives safely and within agreed time, scope, cost and quality criteria.

Strategy comes first

Experiences in the development of ICT in social security organisations consistently demonstrate that the introduction of ICT should be an integral part of a strategic business plan. Different partners and different types of experts, including internal users and end-users (clients), have to work together and receive appropriate and well-defined training to undertake and implement ICT projects. The organisation's senior management must show strong leadership so that staff at all levels and from different backgrounds will adhere to and support ICT development projects. Without this environment, there is little assurance that success will be achieved.

All new technologies imply a new culture which must be integrated by the staff at all levels. Moreover, many ICT projects require a different approach to planning than more traditional administration activities. Sustaining an appropriate outlook or mentality, and maintaining conscious recognition that this is an important cultural issue, is vital throughout the duration of the project.

The selection of the ICT strategy and tools is important. However, the introduction of a new working tool gives rise to a multitude of changes, including the organisation of work, activities to be performed and the relations and interactions between individuals. Therefore, training of users and their managers and management of the changes that ripple out and affect other processes and internal and external relationships are also keystones of success of any ICT project and need attention from the beginning to the end of the project.

Questions regarding project definition

Comprehensive answers on the ICT project strategy and organisational plan under the following headings should be available from an early stage. If the answers are not readily available, there may be a need to assess the project strategy.

- *What is the organisation today?*
  Have the current situation, processes, functioning,
  capacity of change, etc been identified and analysed?

- *Is the future organisation well defined?*
  Are the management objectives, administrative
  processes, output, clients' leadership, etc specified and
  agreed?

- *What must be done to get from today to the future?*
  Are there clear definitions of the following: plan of action,
  division of responsibilities, priorities and frameworks for
  the projects, and methods for directing and handling the
  projects and operations?

- *Is the goal of the project (including restrictions)
  perfectly clear?*
  Is it the same for all involved?

Specification method of technical requirements
Social Insurance Bank Project, Uruguay
(Tebot, ISSA, Costa Rica, 2000)

The scope of a project to re-engineer social security
services included the complete range of social
security services of the Benefits Department at
the Social Insurance Bank (BPS). The project also
included the design of computerised information
systems, the provision of ICT equipment and the
administration of the systems' central operation
within the framework of a 'With Vacant Possession'
arrangement.

BPS engaged local consultants contracted to
develop a specification of the project's requirement
and used the preliminary evaluations, proposal
and support work submitted by the consultants
as the functional and technical basis as the
major component in a call for tenders to select an
outsource service provider.

The operational specification of requirements
included a clear definition of the desired processes
and results for each contractual phase. The
contractual terms of implementation envisaged
improvements and updates, introduced through a
change management method.

Approaches

Different types of projects

The nature and style of each ICT project reflect the diversity in national and organisational cultures, degree of earlier ICT development, management styles and many other social and economic factors. In particular, projects can differ with regard to:

- Who or what initiates a project (legislation, minister, strategy, supplier and systems becoming technically obsolete)

- Type of activities supported, as well as the approach to the project (varying from building a whole new system to system integration such as ensuring that existing systems and components or modules work together)

- Duration (varying from only a few weeks to a number of years)

- Level of technology involved (varying from commercial off-the-shelf [COTS] software to revolutionary new middleware that has only recently been beta tested)

- Type of end-users (varying from back-office legacy systems for specialised staff to Internet applications for clients)

- Type of personnel managing the project and undertaking the development and integration tasks.

The nature of each project thus influences, perhaps determines, issues such as activities to be carried out, competencies of staff required, testing arrangements, and type and duration of involvement of end-users. Therefore, it is extremely important to determine the type of project before starting the development of the project plan.

The main issue in dealing with different types of projects is to first assess the type of project that one is about to start. Based on this assessment, one needs to define the project's organisational structure and the environment of the project organisation.

There are always some issues to be addressed before any project can start, no matter what type of project is involved. However, the best way in which these issues should be resolved is heavily dependent on the project type.

Project definition and types of projects
Central Organisation for Work and Income, The
Netherlands (2003)

Within the Central Organisation for Work and Income
(CWI) in the Netherlands, there are different types
of projects under way, each requiring a different
approach:

- Projects aimed at improving the technical
  information infrastructure (for example, upgrading
  PCs or installing a new wide area network [WAN])

- Relatively large projects for the replacement of
  legacy systems that fall under two main headings

- Outsourced projects, mostly in accordance with
  European guidelines for procurement

- Projects executed by own staff

- Innovation projects (for example, introduction of
  Voice-Over IP)

- Internet projects (for example, the introduction of
  werk.nl).

The approach in each of these types of projects
differs with regard to the involvement of top
management, managers participating in the
steering committee, frequency of progress reports,
allocated budgets, project phasing, etc.

Steering Committee and leadership
The Steering Committee is the group that is formally
responsible for the project. This committee defines the
goals of the project, approves the project plan, monitors
the progress of the project, evaluates the risk assessments
made by the PM and takes all necessary decisions.

The Steering Committee should drive the project and
should therefore be receiving first-hand and reliable
information throughout the project. Accordingly,
the following parties should be members of, or well
represented on, the Steering Committee:

- The client or project sponsor: in other words, the
  manager on whose behalf the project is conducted –
  he/she is the ultimate decision maker on behalf of the
  user organisation

- On some large projects there is a separate change
  management function – this function should be well
  represented on the Steering Committee

- The manager of the ICT department (he/she is
  responsible for delivering the project)

- The PM

- The Chief Information Officer (or other person who sets
  and maintains the corporate information architecture).

Based on the size of the project, the specific technical issues involved and the type of the project, other staff may be involved, for example:

- The manager of a computer department's research and development unit when the project has an innovative character
- Representatives of client organisations when the project is aimed at creating electronic services
- Process specialists when replacing legacy applications.

In general, the number of members appointed to Steering Committees should reflect the scale (in terms of cost and duration) and the business impact. The level of representation should also reflect the degree and nature of the risks and the extent of the impact across the organisation. It would rarely be appropriate to assign overall control to a relatively junior manager.

A strong internal leadership by senior executives should support the Steering Committee at each major step of the development of a project. In any case, leadership is necessary; and if it is not provided by internal support, it may be taken over by outside specialists (for example, in consulting companies which may not have the same agenda as the social security organisation).

Project Management Committee
Ministry of Social Security and National Solidarity, Mauritius (Deerpalsing, St. Louis, ISSA, 1997)

After the project was approved, a Project Management Committee was set up. This was mainly a decision-making committee chaired by the Head of the Ministry and comprising the Central Informatics Bureau Project Manager, the State Informatics Limited (SIL) Project Leader, the User Project Coordinator and the Heads of Sections.

The Committee held regular meetings once a month, and other parties associated with the project were requested to attend as and when required. Other sub-committees such as the 'User Committee' chaired by the Project Coordinator were set up to define the objectives and scope of the project, the activities, the problem areas, provision of law, interaction with other ministries, etc. In parallel, SIL constituted the team of computer professionals to conduct the study in close collaboration with the User Committee.

Strong leadership
Social Security Administration, United States (Gray, ISSA, Valencia, 2002)

The experience of the Social Security Administration (SSA) of the United States with putting a retirement application process online (Internet Retirement Insurance Benefits [IRIB]) provided the Administration with several important lessons.

Strong executive leadership is required to achieve the necessary organisational and operational cultural changes that come with any such initiative. Without such leadership, these changes cannot take place or be sustained.

Employees and field management personnel must be educated – in advance – about new service delivery mechanisms and their impact on them.

Project plan and management of the project

Each project must include the elements which will contribute to its success, in particular, the human resources available and necessary for its achievement.

The structures, working methods and roles of each of the actors at the different steps of the implementation must be specified. Regardless of the nature of the project, each ICT project plan must be included in a methodological framework which will ensure both the quality of its results and coherent integration with any general organisational plan that sets the context for the ICT activities.

The usual framework will be structured along three lines:

• Start-up and direction: includes the definition of policies and objectives, decision-making, follow-up and co-ordination of efforts

• A framework of specifications: includes steps for project implementation, phases of study, method of project evaluation, steps for testing and evaluation

• Planning and budgeting: includes human, technical and financial resources, evaluation of efficiency and effectiveness.

The project plan describes in detail the project goals and the activities required to achieve those goals. The project plan should be the result of a conscious analytical process in which a number of issues are carefully assessed:

• What are the deliverables of the project (when is the project complete)? The deliverables will vary strongly from project to project; some examples are:

– The number of users that will use a specific service

– The detailed changes arising for each affected process

– The staff time saved and it will be realised

– The cost reduction or other financial advantages such as reduction in errors

– The reduction of the administrative workload (letters, forms, etc)

– The decrease in callers to the front offices

• Which activities lead to these deliverables? It is important that adequate efforts are applied to defining and understanding a project and evaluating potential strategies to approach it before the budget estimates are set

• Which types of expertise are crucial for the project's success? The type of specialists depends on the type of activities that are to be deployed

• Which resources are available?

• What re-usable objects (like databases, code, designs) are available, and how well are they documented?

- Which standards (company-wide, national, international) regarding methodology, technology, layout, etc. must the project respect?

- What are the constraints of the project (for example, technical, political, financial)? Are they really inevitable?

- What is the optimum relation between quality of the end result, duration of the project and the total cost of the project? Remember that when any of these aspects is varied, at least one of the others must also change to reflect the new constraint

- What are the total project costs? Without taking the time to investigate, define and plan the type and amount of activities associated with the project, it is impossible to arrive at an estimate with any degree of confidence

- When does the project start, and when and how does it end?

When designing and building a new application, developing a prototype may be an attractive option. This prototype should represent the essential functions of the system, so as to let the users 'get a feel' for the final product. This may help in clarifying technical issues as well as clarifying how the project outcome will be evaluated – that is, what will be delivered, how it will behave, what is the project likely to require in terms of cost, duration and expertise, etc (see also Technology).

Issues for developing countries

Project definition/types of projects

In some situations, organisations trying to build everything – policy, organisation, ICT, etc – from scratch have invested large sums attempting to forecast the future. However, the results of the forecasting are not always accurate. It is hardly surprising that start-up agencies face these difficulties – organisations that are well established for many years cannot always predict their future challenges. However, there are many advisers who will claim that they can help them anticipate technology trends.

Research efforts into technology options and investments in ICT systems should not be ambitious, but rather should aim at achieving medium stability in implementing the new programmes and services while building a general awareness of ICT issues throughout the agency.

New agencies will usually be heavily dependent on support from consultants and IT providers. There is sometimes a temptation to buy services and IT from a great variety of suppliers. This may appear one way of getting the best competitive quotations, but it is often the case that the overhead in managing too many suppliers imposes crippling overheads on an inexperienced organisation, and problems then occur which cancel out the savings.

As a rule of thumb, the less an organisation can say with certainty about the details of its future staffing and processes, the more it should confine itself to working with a limited number of suppliers who understand social security business issues and/or who have a solid reputation in their local marketplace.

Avoid micro-management and other extremes

This manual also discusses the need for project planning and project management.

New institutions sometimes have Boards of Directors or Trustees who become involved in micro-management. Others adopt a very hands-off approach. Both extremes can lead to difficulties.

Another difficulty that can emerge is a temptation to change suppliers in mid-stream if unexpected difficulties arise. If suppliers that truly respect their reputation were selected in the beginning, substituting them in mid-project is a risky strategy. Accordingly, try to ensure that any consultants and suppliers selected in the beginning will have the right motivation to continue through the difficult phases that many projects face, and question carefully any advice volunteered by companies seeking to replace existing suppliers – it may be the best advice, but it is sometimes motivated more by commercial considerations than might appear on the surface.

Lessons learned on project definition issues

An ICT project is a project of change

ICT projects, directly and indirectly, affect the roles, skills and what is expected of the individuals who work in and for the affected social security scheme. Project outcome is critically dependent on the way that changes are identified or anticipated and on the nature of the support for the individuals who undertake key project activities and who live with the results.

Ongoing training and dialogue with users is a key to the success of a computerisation project. Failure to heed this is a frequently committed error. Training at all levels is essential to the success of a project. If a project is not well defined, the training and dialogue may not be fully relevant.

The installation and development of an information system in social security institutions must be carefully planned. Every effort should be made to have users identify with the project from the earliest stages. Users should be encouraged and helped to understand that the ICT experts are supporters. This will help the users to accept that they are responsible for, and actually in control of, effective leadership of the project. If a project is not well defined, the users will not willingly accept responsibility.

A project will fail when its benefits and/or deliverables are not clearly defined.

Do not accept poorly defined, badly estimated projects just because the maximum duration of the project might be exceeded.

Do not set or accept over-ambitious targets.

Other important lessons related to project definition

• When a project is properly defined, the following tasks become more manageable:

  – Ensuring that the user organisation can take over the results of the project – otherwise the project may never end

  – Ensuring that valuable project and system knowledge does not reside only in the heads and minds of consultants or it will leave when they leave

• Identifying, in advance, sponsors who will support the project if things get rougher than anticipated (for example, if issues develop an adverse political momentum)

• Only implement changes in legislation and policies after a decision by the Steering Committee, taking into consideration all repercussions of the implementation of the change with regard to the project

• Do not try to keep up with continually changing legislation if the design does not properly support this – good designs assume that legislation and policies are liable to change. It may sometimes be better to step back and change the design if it emerges that unexpected and complex legislative changes would otherwise require fundamental changes to coding

• Finally, do not stay in the planning phase 'forever'.

Lessons for start-up project situations

• Attempting to second guess technology developments is expensive and risky

• Technology strategies should be geared to the types of expertise available locally or regionally

• Boards appointed to oversee new agencies may have difficulties finding the correct balance between micro-management and a 'laissez-faire' approach

• Boards might wish to consider sharing experiences informally with an agency about the same size but with more experience

• Attaching a PM or ICT manager to a project in another country for a few weeks or months to get hands-on experience should be considered

• Some development agencies have mentor programmes – it might be worthwhile seeking an ICT expert under any such programme available.

Project manager

The Project Manager

The Steering Committee is formally responsible and is the leader of the project. However, the PM is the person 'in charge' and is responsible for the project on a daily basis.

A PM:

- Allocates tasks to the individual members of the project

- Monitors the progress of individual team members with regard to their tasks

- Prepares progress reports for the Steering Committee

- Implements risk-reduction measures

- Assesses known risks and attempts to predict and circumvent unexpected risk factors

- Acts as the liaison person to other projects, departments and other parties of interest.

The PM attends meetings of the Steering Committee, where he presents progress reports, risk assessments, answers questions, participates in the discussion and gives advice on decisions to be taken by the Steering Committee.

A general rule is that the type of project defines the type of PM required. For example, the development of an Internet application in close co-operation with clients requires a PM who can communicate at a very high level (and who may know little or nothing of the technology detail that is underlying the application).

The culture of the organisation also defines how PMs can operate. A PM does little directing in a functional organisation. In a matrix organisation, the responsibility to direct the work of the individuals is shared between the functional manager and the PM. In a projectised organisation, the PM does all of the directing.

Layout of a project manual
Social Insurance Institution, Finland (2003)

The Finnish Social Insurance Institution uses its own in-house manual to help PMs in their tasks. The manual contains information on: definitions, principles of project work, project/line organisation, organising model, groups and individuals, task lists for project members, and model solutions.

The manual places particular emphasis on specific aspects of project management. These aspects include requirements for the assignment, starting and ending the project, planning and reporting methods, administrative tips and tools, and check lists and documentation guide. It also gives examples of typical project documents.

So, you need a project manager?

Does this sound familiar? You have a new product in mind, a rough estimate of the cost and a deadline. You hastily assemble a project team and appoint 'Peter' to manage the project. Peter is an intermediate-level programmer who has some project co-ordination experience. Never mind that he's currently developing an employee database; this project is a priority and you need a PM – now! You reiterate that the product must be delivered on time and to specifications, and you remind him that you'll be managing the budget and expect to be consulted whenever a 'major' decision is required.

Peter hasn't managed a project of this kind before and wonders where he should begin. What about his database project? Wasn't that a priority, too? Without requirements, he doesn't know if the time frame and budget estimates are reasonable, but management is exerting pressure to get started, and he doesn't think he's in a position to refuse the assignment. It's going to be a rough ride, but as far as he knows this is the way projects are done in this organisation.

Peter has been thrust into the role of PM through necessity (or his availability) rather than by design or career path. He is the 'accidental PM.' He has neither the skills nor the desire to manage projects. In fact, he enjoys the solitary nature of programming. But he's smart, he wants to advance his career, and he can't say 'no'. Unfortunately for Peter, he will be held responsible and accountable for the project's failure (or success, if he's fortunate). And to make a risky situation worse, the organisation lacks a project management framework (PMF) that would have, at the very least, provided Peter with a 'roadmap' to follow the 'typical' project life cycle.

A PMF would have provided Peter, his team and all project stakeholders with a standard approach to project initiation, planning, execution, control and closure. In addition, the PMF would have identified roles and responsibilities, standards and procedures, templates and tools, major deliverables and the project review 'checkpoints' required by management throughout the project life cycle. In the absence of a framework the PM, whether accidental like Peter or full time, will most likely take a 'seat-of-the-pants' approach to managing the project and as a result will put the project at a greater risk of failing.

What to look for in a project manager

PMs are assigned on the basis of their technical background, general management skills, industry experience, or availability. However, good PMs will possess a balance of technical, business and 'people' skills, with emphasis on one or the other, depending on the nature of the project. Among the 'soft' skills that good PMs possess are the following:

Soft skills

Communication skills: The PM should be an excellent communicator and encourage communications among team members and stakeholders. A PM should also be a good negotiator who is familiar with the political landscape in his or her organisation.

Commitment to the project and to the organisation's goals: the PM should have an over-riding commitment to the project's success, user satisfaction and team working. A PM is goal oriented and will do what it takes to get the job done.

Leadership: The PM is a leader who, by being positive, energetic, fair and reasonable, motivates and represents the team. A good PM is energetic and creative and, while seeing the big picture, confidently delegates work and responsibility. As a leader, a PM is able to act upon his or her initiative and pursue decisions with conviction.

Fair and flexible style: The PM is patient, flexible and can cope with the stresses, setbacks and disappointments that come with the job and is able to adapt to the needs of the project and all stakeholders to ensure the success of the project.

The PM who views the responsibility of managing a project as one of guiding, facilitating, negotiating and co-ordinating will do better than the individual who views the project management responsibility as one of ordering, dictating, and coercing.

Hard skills

There are 'hard' skills and responsibilities that good PMs either possess innately or receive by delegation. These include the following:

- Solid working knowledge of generally accepted project management areas such as integration management, scope management, time management, cost management, quality management, human resource management, communications management, risk management and procurement management

- Awareness that professional responsibility means:
  - Doing the right thing in the right way and at the right time
  - Telling the truth in reports, conversations and other communications
  - Following the right process
  - Acting ethically, fairly and professionally
  - Managing conflicts of interest and controlling the emergence of potential new conflicts of interest
  - In addition to the general task of training and educating end-users, he has the task of increasing knowledge and practical capabilities of his or her own team

- Experience, credibility, and project knowledge, even if he/she is not a technical expert

- Ability to lead and direct the project planning, executing, monitoring and control efforts

- Proficiency in using project management tools and processes in support of work breakdown structure, estimating, network diagramming, Gantt charts, programme evaluation and review technique (PERT) methods, and project cost management using budgeting and accounting methods

- Ability to integrate all the elements of the project into a cohesive whole that meets the needs of the 'client'.

Empowerment includes:

- The authority and accountability necessary to accomplish the work and the authority to say 'no' when necessary

- Accountability for project progress, success as well as failure

- Authority to deal with conflicting or unrealistic scope, quality, schedule, risk and other requirements

- Authority to maintain control of the project by measuring performance and taking corrective action.

Summary

In summary, the PM is the person who takes overall responsibility for co-ordinating a project, regardless of its size, to make sure the desired end result comes in on time, within budget and scope and to the necessary level of quality.

Seven traits of good PMs:

- Enthusiasm for the project

- The ability to manage change effectively

- A tolerant attitude towards ambiguity

- Team building and negotiating skills

- A 'customer-first' orientation

- Adherence to business priorities

- Industry knowledge.

Key responsibilities

The PM should be assigned to the project as early as possible and must have the authority and accountability necessary to accomplish the work, as well as the authority to say 'no' when necessary.

The PM is responsible for writing the project charter, the mission statement for the project, which should describe the vision with regard to the project (what should be achieved and why it must be achieved).

Following the assignment of the PM and the development of the project charter, the project plan should address the who, what, when, where and how of the project associated with the following PM knowledge areas:

- Integration

- Scope

- Time

- Cost

- Quality

- Human resources

- Communications

- Risk

- Procurement.

Management of expectations
Department of Social Development, Canada (2004)

The purpose of the project was to allow Canadian employers to submit records of employment through the Internet using the Government of Canada PKI Infrastructure. The information submitted in this way is used in the calculation of benefits for employment insurance clients. The required business functionality involved ePass authentication, single sign-on via secure channel and transmission using PKI technology to ensure secure transaction delivery services for non-repudiation.

The project demonstrated the importance of (i) managing expectations in a multi-stakeholder project, (ii) setting clear milestones, and (iii) early and clear analysis of the options to be followed.

See Annex I for additional details on this case study

Lessons learned relating to the project manager

Managing expectations

Management of expectations is a key practice in any project. Naïve expectations can be found at any level of a project and can create unexpected dangers if users and decision makers are not adequately informed about the technology considerations. Many projects, even those using less advanced technology, start with a vision that is not fully understood, but yet the expectations are set from the start. At a minimum, project initiation should include:

• A statement of expected outcomes that is concise, achievable and measurable and in a form that stakeholders can readily understand

• A common voice/forum to ensure that a shared vision is disseminated and kept relevant

• Adequate education on the business opportunities and the technology constraints for Steering Committee and other decision makers and influencers who may not have prior exposure to the issues involved

• Encouraging users, other decision makers and influencers to speak out when they do not understand the decisions they are asked to make or endorse.

Lessons for start-up project situations

The following problems, identified as a risk to all ICT projects, occur most frequently when new institutions or new programmes are being set up:

• Inadequate resources

• Unrealistic deadlines

• Unclear goals/direction

• Uncommitted team members

• Insufficient planning

• Breakdown of communications

• Changes to goals and resources

• Conflicts between departments or functions.

Tackling these problems before an organisation has had time to develop a 'collegiate' or teaming environment presents special difficulties. The ICT executive will often be viewed with suspicion if he or she appears to have unique skills in start-up scenarios. Top management needs to actively assist in resolving these normal tensions before they lead to severe problems.

Very often project management skills have to be brought in – sometimes literally imported from overseas. It is desirable that the institution appoints a shadow PM or understudy. This will ensure more effective knowledge transfer and reduce the risk that the institution will become locked into over-reliance on external advisers.

The understudy will also play an important role in briefing the PM on important 'soft' issues of a cultural nature so that the project plan and methods are presented in a form that gets best 'buy-in' from the management and staff. No matter how technically excellent a plan is, it must be in a form that people understand and respect or it will inevitably fail.

Stakeholder involvement

Background

The importance of user involvement and the number (and scope) of many users' applications developed in typical social security schemes together impose special requirements to address stakeholder issues comprehensively and from the earliest stages.

In the 1970s and 1980s, information technology departments mainly designed and developed back-office systems. Accordingly, the number of users/stakeholders involved was relatively small, or at least the variety of users and user needs was relatively contained and somewhat easier to predict. This situation changed in the 1990s, and more recently the introduction of Internet technology created a new (and far larger) group of stakeholders – the clients of the organisation. They are the ones who primarily use the new system(s), and they are not only a much larger body than the traditional concept of users – they also have a much wider range of needs and abilities when it comes to interacting with many modern systems.

Today it is normally necessary to involve all types of stakeholders in more meaningful ways. Project attention to change management should therefore look beyond the people on the work-floor. Achieving this requires the active involvement of managers responsible for all aspects of the affected process (that is, the process chain supported by the information system being introduced or changed).

According to Ganthead:

It is essential to organise projects around services that are of value to the users and not around IT disciplines.

In the early stage of the project, it is convenient to identify:

- The preferred ways to interact with users
- How they want to be informed
- How often they want to be informed
- Documentation processes they want to use
- Availability for meetings
- Other projects affected by the new one.

Source:www.ganthead.com

Who and what are stakeholders?

Stakeholders can be defined as follows:

- External stakeholders: final users or customers (potentially all citizens or perhaps limited to insured persons and employers in the case of social insurance and claimants and other beneficiaries), hospitals, banks, suppliers (including outsourcers) and partners

- Internal stakeholders: managers, employees and users in general

- Other stakeholders: legislators, journalists and other media contacts, pressure groups, etc.

The expression 'user (or stakeholder) involvement' has become a buzzword in the domain of information technology, and because it is sometimes used in an insincere way it has lost some of its original impact. Nevertheless, it is more relevant today than at any time in the past, because modern ICT systems affect ever-expanding community pools and in many cases the ICT developers have little opportunity to assess the day-to-day pressures affecting remote or indirect users. The expression, therefore, still relates to the strong need to involve end-users meaningfully in projects for the development of information systems and at stages when they can contribute in a real sense.

End-users participate in the development
Federal Institute for Salaried Employees, BfA, Germany (2003)

The project team decided to invite the end-users to participate in a development project for a system that assists inspectors to check whether employers pay the correct contribution for social insurance.

A working group was formed with direct contacts (communication lines) between developers and the users who were decentralised across Germany. When the members of the group returned to their daily work and took part in regular local or regional meetings, they spread the news about new functions or decisions about one or another business process. The working group members' identification with the product increased with the added responsibility; they actually became 'ambassadors' for the new application. Accordingly, implementation became an event the users were looking forward to.

See Annex I for additional details on this case study

Multi-channel front-office network
National Social Insurance Institute, INPS,
Italy (2003)

The INPS aims to provide all user categories with
the same services and with the same quality of
service. This has been achieved by a front-office
channel network supporting online Web application
services, online services for disabled people,
call centre services, local offices and self-service
terminals located in public offices.

All these channels provide the same services, and
the systems enable each user to choose his/her
preferred channel. Using online and phone facilities
to record customer satisfaction, INPS receives
important feedback on user needs, service levels
and suggested improvement for the existing
services.

The INPS define 'strong users' as experts in
technologies such as Internet, e-mail, e-commerce,
etc, and 'weak users' as people with special
physical or mental needs, old people, foreigners
and others who are not experts in information
technologies in general.

Stakeholder roles
Achieving meaningful and constructive involvement may
mean providing training, seminars or other education so
that stakeholders can understand both the potential of, and
the constraints affecting, the project scope. This type of
stakeholder involvement leads to information systems that
are better suited to the needs of the users and are therefore
easily accepted.

However, analysis of the way that users are sometimes
involved in the development of information systems shows
that important progress in this matter is still required. The
ISSA conducted a study in 1995 in 20 social security
organisations in French-speaking Africa. The main issue
was the conditions for success for an electronic data
processing plan in a social security institution. The results
were presented at seminars in Tunis and Mauritius (1995
and 1996).

Some experiences analysed

The following table illustrates the types of actors involved in the implementation of the ICT master plan:

	Decision	Design	Construction	Implementation	Utilisation
Executives	20	3	1	2	3
Top managers	7	16	3	4	10
ICT experts	2	20	20	19	4
Project managers	2	9	7	6	3
Trainers	1	8	9	9	4
Staff		3	1	8	18
ICT providers	1	4	5	9	1
Consultants	3	11	10	9	
Others[*]					

[*]One institution replied that other departments were involved.

This table shows that many actors were involved in the implementation of the various ICT master plans, but it also shows that the roles of the users and/or the principal stakeholders were limited. Other aspects of the study in question indicated that, even when users were involved, they were often out-numbered by technical specialists, consultants and managers.

User involvement is still an issue that urgently needs to be properly resolved and not only in the developing countries. Furthermore, as already indicated, the nature of modern systems increases the dangers where stakeholders are not properly involved.

Participation of the users in the cycle of development
National Social Security Institute, INSS,
Spain (2003)

A recent project dealt with managing case files for persons affected by international regulations. The traditional project cycle normally begins with defining user requirements and concludes with the phase of testing and implementation. However, for the project in question a different approach was adopted. From the very beginning, an expert user from a provincial directorate took part in the formative specifications. His/her practical approach, based on day-to-day practical experience, led to the adoption of a series of important design decisions that differ significantly from previous analogous applications. These modified design concepts were enthusiastically welcomed by end-users during implementation.

The most important innovations permitted a simpler and more practical utilisation of the application by avoiding the redundant introduction of data and excessively complex menu systems. In addition to a more active role by users, short development cycles were used in a way that allowed early initiation of testing of parts of the system. This approach differed from conventional prototyping in that the modules, etc created were designed and built to production standards. In this way, it was possible to minimise the impact of the testing phase as compared with previous projects, and the deployment phase in the provincial directorates encountered far less resistance than in earlier projects.

Approaches to effective stakeholderinvolvement
Any project in any organisation is likely to have different stakeholders and different types of users, depending on the specific characteristics of the project. Efforts should be made at the project formulation stage to identify the probable stakeholders and their interests, along with an assessment of abilities to contribute and opportunities that may arise to increase the value of the project in their terms. Successful ICT managers know their chief stakeholders and understand how they regard the ICT organisation's work.

Senior internal users, for example executives responsible for business units or corporate function, are usually involved in many different activities and are constantly trying to balance the urgent issues with important strategic decisions that may not be urgent 'today'. Helping the senior internal users understand that the specific ICT project is an important activity that will ultimately assist the strategic objectives will secure their commitment to invest time in setting project direction and in committing resources. This will only be achieved where the project leaders make efforts to learn about the organisation and its business challenges. If the PM does not acquire these insights, he or she should anticipate negative involvement in the project by key and influential users.

Clear definition of objectives is a precondition for recognition by the users as to the duties and roles of the final decision makers on design, scope, other goals, accountability for funding the project and for setting and achieving the project milestones.

Without this recognition, users and other stakeholders will not trust the process.

If they perceive their involvement as a token consultation, there are inevitable risks that their active support will not be forthcoming if difficulties arise later.

Relationship between the organisation and its clients
National Social Security Fund, Tanzania
(Dau, ISSA, Tunisia, 2002)

According to the law, employers, employees and the Government manage the National Social Security Fund, NSSF. Each of these stakeholder groups is equally represented on the Board of Trustees of the National Social Security Fund, and this arrangement has strengthened the client/fund relationship.

During the preparation for conversion from Provident Fund to the present arrangements, all the stakeholders were invited to a round table consultative meeting. This meeting was convened in order to ensure that all points of view were taken into consideration before the conversion took place in 1997 and that the public at large was educated on the new scheme. The success of the meeting cemented the good relationship between the Provident Fund and its stakeholders who supported the conversion and continue to support the implementation of the new scheme.

Lessons learned relating to stakeholder involvement

- Clearly define roles and responsibilities for all team members and stakeholders on the project

- Ensure that all partners understand and agree to each other's needs and abilities prior to committing to the expectations

- Establish working relationships and communication channels with all stakeholders

- Get users involved from an early stage

- Invite users to become sponsors for the project

- Involve others in evaluating and ranking project priorities

- Try for feedback to be made in short cycles without waiting for advanced stages

- The ICT project leader should learn about the organisation as much as possible and about the significance of the project in this environment

- Organise projects around services of value to the users and not around ICT disciplines

- Do not avoid your users – they are your customers – answer their requests

- Do not postpone user testing until the application is finished

- Do not impose new solutions on end-users without taking into consideration their needs and opinions

- Do not assume that formal acceptance of the project's results is the same as user enthusiasm.

Gartner advises the following five steps to achieve alignment and develop a common vision:

- Look outward. Adopt a marketing culture that treats ICT user groups as customers. Learn customer needs and interests and their environment and values; teach them useful information about ICT and generate ICT proposals that meet their objectives. Such a customer mind-set is essential to transform the traditional technological culture that primarily values a high level of technical acumen

- Invite customer participation. Bring ICT users into the decision-making process to help set the direction of ICT and understand what ICT can and cannot do. User participation will likely establish joint governance on decisions (and buy-in), clarify user benefits and avoid topics outside the users' direct interests

- Jointly establish decision criteria to drive funding and technical choices. ICT organisations should use a portfolio management approach to decision-making, apply the criteria fairly and consistently, and measure the results delivered

- Build the ICT brand. ICT organisations should strongly communicate to customers their values, beliefs and principles – which become, when upheld consistently, the ICT brand and promise

- Measure stakeholders' opinions of whether the ICT organisation is contributing to the achievement of their business objectives.

From the ICT perspective, internal ICT customers represent only a limited part of major stakeholder groups that need to be satisfied with ICT infrastructure, organisation and process and outcomes. External customers can benefit or suffer from ICT service delivery. Multi-channeling will provide ubiquitous services, accessible from any device, at any time, from any location, enabling new life styles for end-users.

Source:www4.gartner.com/Init

Lessons for start-up project situations

The importance of stakeholder involvement cannot be over stressed in any situation. However, when a completely new social security service is planned, it is probable – even inevitable – that there are firms and organisations already trying to service part of the need. For example:

- A commercial insurance company might fear that introducing a national social security pension scheme could eat into its customer base

- A religious agency that has been providing vital care to impoverished communities, widows or the sick might feel a natural resentment if its historic role is not respected.

In many developed countries, governments are grappling with fears that the public is attempting to abuse the Social Security Fund by fraud and over-claiming. In some developing countries the position is reversed and the public is worried that the Government might use the Insurance Fund for other purposes.

When thinking about stakeholder issues, it is important that all stakeholder concerns are identified early on and that realistic steps are taken to inform the stakeholders and to allay their worries, even those that seem illogical or which seem to be based exclusively on a fear that they will lose prestige or status.

It is also important to promise only what can be delivered and to deliver everything that is promised. In situations where there is little knowledge of social security among the general population, promising identity cards or annual statements may seem like a good way of building confidence. If later costs or technical problems make this difficult, the workers might begin to doubt all aspects of the scheme.

Communication strategy

Links among users, experts and technicians

Managing effective communication among different types of experts can present many problems because each expert group (legal, technical, business experts, etc.) tends to have its own jargon or shorthand. These problems are most prominent when complex technical aspects are involved

Informal communications are often a vital part of the overall communication process and help to establish relationships. This relationship building function may, in some situations, be more important than the information exchange actually taking place on project issues.

Communication not only keeps everyone up-to-date on the project's progress, but it also facilitates buy-in and ownership of major project decisions and milestones. To ensure the success of a project, considerable diverse information, including expectations, goals, needs, resources, status reports, budgets and purchase requests, needs to be communicated on a regular basis to all the major stakeholders.

Project communication difficulties may be increased or reduced by the approach to project management. The best approaches are influenced by many factors, but in any event they should reflect the nature of the project.

- Many projects are short term, and therefore project communication is temporary. This means that communications systems need to be established quickly in shorter periods of time

- At the other extreme, lengthy projects that will affect many users may need very formal communication methods

- Communication may also be restricted to specific issues. For example, a PM must communicate in an efficient way and often formalised manner with managers who control resources, whether money or people, and may need to keep in touch with them during the entire process.

It is usually necessary to use a combination of top-down and bottom-up approaches based on an internal communication strategy that emphasises direct communication between top management and other staff. Junior staff input should be considered, but top management would not abrogate its leadership role. At a minimum, the communication strategy should explain any decisions that conflict with any staff input so that staff understand why a particular action or decision was taken.

Communication is not something that just happens. Do not assume everyone knows what is going on.

On going internal communication

Implementation of ICT can only fully succeed if the entire
organisation is committed to the changes. In any event,
care must be taken not to allow too great a gap to develop
between the persons directly affected by the various
projects and those whose jobs ensure the ongoing
existence of the organisation. This may be accomplished
by different activities:

- Institutional communication: the organisation must
  communicate the changes it has defined for itself, its
  staff and its clients, as well as the way in which these
  changes are being implemented. This is accomplished
  through a widespread policy of internal and external
  communication

- Informal communication: informal meetings ('coffee
  corner meetings') between the members of the
  project team and stakeholders facilitate the transfer of
  information and support the early discussion of 'difficult
  issues', thereby preventing lengthy and in-depth
  discussions in formal meetings

- Functional and interactive transfer of information
  between PMs, working groups and Steering Committees
  should avoid a laboratory-type environment

- Anticipatory training would allow for actions more
  geared to the development of the individual by
  accelerating and facilitating the process of acculturation
  and the acquisition of skills, knowledge, abilities
  and behaviours made necessary by the designated
  changes.

Phase 1: Workshops

Social Security Office, Thailand (Thephasdin, ISSA, Taormina, 2001)

At the beginning of phase I (project for establishing the Results-Based Management System in the Social Security Office (SSO) of Thailand), the project team encouraged senior managers in the SSO to review the current situation and create a vision of the future of the SSO. The project team organised workshops to facilitate SSO senior managers' involvement and ownership.

During phase I, three workshops were conducted with the senior managers of the SSO. The first was an organisation Analysis Workshop, the second was a Vision Workshop and the last was a Finalisation Workshop.

Ownership and commitment from the SSO senior managers ensured active involvement from key employees of the SSO in both the planning and implementation stages. This high degree of involvement led to greater success in internally promoting the mission, vision and guiding principles among all SSO employees. It also enhanced the success of making the mission, vision and guiding principles realities throughout the SSO. Senior managers were actively involved in developing critical success factors and key performance indicators.

External communication and marketing

The PM and the project team must regularly communicate with all the stakeholders: the board of the organisation, the internal users and/or their representatives, in-house ICT experts and consultancy companies as well as end-users, and other clients who are affected by the changes.

Communication strategy for end-users

National Social Insurance Institute, INPS, Italy (2003)

The INPS has developed a communication strategy for:

Partners and local administration by various means, such as:

- A guideline manual published on the Internet

- Invitations to participate in a national video conference in INPS local offices

- On-site support provided by local INPS support teams

- Support team personnel reachable by e-mail, phone, and a voice-over-IP Internet calling system.

Citizens that includes:

- Guideline manuals published on the Internet

- Ensuring that support team personnel are contactable by e-mail, phone, and a voice-over-IP Internet calling system.

Note: Voice-over-IP communication allows users to talk with support teams by pushing an applet button (HTML Web page) while using Internet services. This is helpful for dial-up Internet users who might not be able to use the phone line to get support while still running the application. (The user needs a headset with a microphone connected to the PC.)

Market advertising
National Social Security Fund (NSSF), Tanzania
(DAU, ISSA, Tunisia, 2002)

After the transformation of the Fund, it was
necessary to inform members and the public of the
benefits that the new scheme would offer. The NSSF
undertook market advertising through the print and
electronic media. A different marketing mix was
used in different geographical locations depending
on the local circumstances.

Public education targeted employers, employees
through their trade union representatives, media
practitioners, non-governmental organisations,
central and local government officials and the NSSF
staff. These seminars aimed at providing better
understanding of the NSSF scheme, receiving
feedback from the clients and the general public
and ensuring that staff comprehend the scheme
well and have an appreciation of the customer
care concept.

Management also decided to expand the NSSF
marketing plan by registering at the Dar-es-Salaam
International Trade Fair (DITF). Approximately 350
companies participate in this event, and about three
million people including employers, employees
and potential members attend the show each year.
The forum helped to market the NSSF's products
and services.

Lessons learned about communication strategy
Communication
Every project team develops a unique culture as the people
work together. Human resources management has an
important role and many issues have to be tackled, but
communication is a pre-condition for success.

Communication is truly one of the cornerstones of effective
project management. Without it, the best planning can
easily go wrong. Communication in this context is more
than just listening and relaying information. It means getting
the right message to the right people at the right time and
making sure that the channel remains open at all times.

Staff need to constantly discuss common issues to work
together productively. This is the principle mechanism
to overcome disputes, facilitate understanding and
achieve organisational alignment on factors critical to the
business relationship. External and internal communication
strategies need to be designed and assessed and
reassessed at regular intervals after implementation.

Because of the participative nature of dealing with the
consequences of the implementation of the project,
communication skills need to be enhanced so that
interaction across different departments will be made more
efficient and more productive.

Communication skills are required for the PM and his/her
team. The PM should be an excellent communicator, who
encourages communications and who is a good negotiator
familiar with the political landscape.

What advice should be offered to an aspiring PM?

Communicate communicate communicate.

By the PM sitting down with people and talking through a project, they learn a great deal about why they are doing what they are doing (source: cio-Internet). If everyone is on the same page, crisis management would probably not be required at all.

Change management

There is also an important role for the 'change managers' in the whole process of implementing an ICT project that impacts on the daily work of the staff. Using a principal Change Manager (or consultant) to advise on the major change components of the project and to coordinate the contributions of other consultants is a key ingredient in many ICT success stories.

Change is not brought about by moving machines or by modifying structures but by changing attitudes and behaviour.

Role of the change manager

Department of Family and Community Services, Australia (ISSA Re-engineering Manual, 2000)

The role of the Change Agents, who were appointed to every Branch in the Australian Department, is to assist the re-engineering process by acting as facilitators and communicators within their work areas. Their role is defined as:

- Supporting work units through the change process

- Building appropriate knowledge and skills personally to advance change

- Transferring that skill and knowledge to others in their work unit

- Advising senior management about options for change.

The change agents are expected to accomplish this by:

- Interpreting the change process as it relates to the work being done in each work unit

- Facilitating business improvement planning

- Implementing teamwork and the ideas generation process to support business improvement.

The change agents work closely with work unit leaders as a change management team within each Branch.

Lessons for start-up project situations

There are many excellent case studies of marketing activities that new institutions should study. Do not be afraid to copy the successful efforts of neighbouring countries.

Consider also how countries like Australia succeeded in communicating with local social security staff before the Internet. A video cassette is a robust and affordable piece of technology that can be distributed easily to remote offices.

Training

Management training at the start of a project

ICT projects frequently expose staff at different levels to new challenges in terms of concepts as well as in the approach to the project activities. Training can help staff conceptualise, assimilate and accept the project and the associated changes transition. In addition, integrated management training will improve operational capacities.

The training should focus on operational capacities rather than technical training. Its aim is to contribute to a critical analysis of the organisation, its procedures and the role of each unit. A workflow management project should provide the information technology basis for processes and procedures. Therefore, the training should be directed towards process-orientated thinking and techniques for the management of change.

The improvements resulting from practical projects and the training contribute to the general dynamic of renewal. But it will only be successful if it is supported by a convinced and convincing top management.

Training as a major component of the success of projects

Training is a major key success of ICT projects: a comprehensive training and on-site-support programme for users and systems administrators should be planned and budgeted.

Training is the most basic but yet frequently overlooked form of knowledge acquisition and knowledge sharing and is essential for increasing in-house competency and at the same time reducing the dependency on external entities. Studies have shown that ICT is best leveraged in those companies that recruit and train smart employees and then provide them with the opportunity to collaborate with other professional people. Training should therefore form a critical part of any well developed ICT strategy.

Continuing employee training and development allow managers to optimise the full potential of their human resources. New processes and applications implementation often requires new skills and behaviours of the staff in order to achieve the tasks and mission of the organisation. Training is more and more integrated into the daily environment of the staff when ICT projects become new operational applications.

Integrated management training

National Office for Employees' Family Allowances (ONAFTS), Belgium (Re-engineering Manual, ISSA, 2000)

Managerial staff were involved at all stages in the integrated management training. The process included the establishment of projects for practical improvements. These projects have proven to be one of the best ways of achieving in-depth changes in the long term. Two determining factors in the success of the training programme are the energy released and the number of persons involved in changing the organisation. The programme was designed to reach out to a sufficiently broad group of critical staff members who were convinced of the need for change, who then played the role of leaders of the other staff in this process of change in the organisation.

Information and communications technology (ICT) social security project management

When establishing training strategies for projects, it is necessary to describe the nature of the training required to implement the project: specifically, how much of the workforce and managers need 'technical', new computer skills, added technical programme information, and what kind of new job skills are required, for example, problem-solving, communication (front desk team), team working, customer orientation and initiative skills, training skills, etc. Major ICT projects could also have impacts on career development and career expectations of staff. Consequently, the PM and the project team need techniques and tools to integrate training activities into the development of ICT projects.

Virtual training school

Federation of German Pensions Insurance Institutions, VDR, Germany (2003)

The concept of a virtual training school arose in an environment influenced by innovative ICT projects where concepts such as target orientation, process orientation, standardisation, total quality management, controlling, etc were competently communicated.

At present, a number of new initiatives, including technical initiatives, are taking place on the organisation side, requiring constant evaluation. Learning on demand and asynchronous learning structures are now offered as new services to employees via the intranet or the Internet. Trainees benefit from decentralised course content especially tailored for each individual and delivered to suit his/her personal profile. Classroom teaching is adjusted in space and time to real needs.

The development centre set aside for this purpose by the Federation of German Pensions Insurance Institutions (VDR) in Würzburg has many of the important features of an effective competence centre. A virtual training school raises the awareness of workers and management to the work processes and the activities these require in order to guarantee optimum choices from the available training offers (or modifications thereof).

The objective of the virtual training school is to continually improve the processes that are already available. The targets are the three dimensions collectively understood in the technical term 'mediagogy':

• Individual and system dimension (includes individual as well as system aspects)

• Space and time dimension

• Method and didactic dimension.

Training strategy
National Social Insurance Institute, INPS,
Italy (2003)

ICT personnel training:

- Annual training plan for ICT personnel on IT architectures and technologies – the objective is to share IT knowledge with all ICT personnel.

- Specific training activity for specific project required skills: When possible, this training activity will be based on a training on-the-job model. The training on the job model has proven much more effective than classroom training sessions mainly because ICT personnel become much more involved working on a real project instead of a case study.

End-user training:

- Internal user
- Intranet published manual
- Multimedia training kit
- Video conference with peripheral offices.

Specific strategies for small countries

The dynamic nature of computer technology is a problem. Every new development in hardware and software technology necessitates retraining of staff. Such developments invariably make existing computer systems obsolete. But because of limited financial resources, replacement of such systems is never easy and often not affordable.

While a consultant can map out a strategy for the development of the needed skilled manpower, the consultant usually focuses on state-of-the-art equipment and technology. This can result in the rejection of an institution's existing ICT personnel as unsuitable, unqualified and/or untrainable and the recruitment of new staff more familiar with the modern technology that is being put in place.

Social security schemes in developing countries are often relatively small compared to those in Europe and North America. However, the myriads of problems faced by these small organisations are no less complex or less challenging than those faced by schemes of larger countries.

Given the limited capital and even smaller human resource pools of technical expertise, it is therefore imperative that the application of information technology by these schemes be done after much planning and careful analysis of the technology available and its suitability for the country involved.

Information and communications technology (ICT) social security project management

Training is the most basic, but yet frequently overlooked, form of knowledge acquisition and knowledge sharing, and it is essential for increasing in-house competency while at the same time reducing the dependency on external entities. Studies have shown that ICT is best leveraged in those companies that recruit and train smart employees and then provide them with the opportunity to collaborate with other professional people.

Training aimed at building capacity
National Social Security Fund, Tanzania (Dau, ISSA, Tunisia, 2002)

Prior to the 1990s, the National Provident Fund had a large number of unqualified staff. As a result, understanding of the Provident Fund's purpose was low, and the services provided were consequently of a poor standard.

The transformation from the National Provident Fund was therefore a big challenge to the scheme's training function. Taking into consideration the quality of staff inherited from the National Provident Fund, more emphasis was laid on upgrading general knowledge through education. Staff were therefore encouraged to further their academic, technical and professional qualifications at local institutions and abroad. To facilitate this, the Board of Trustees allocated substantial amounts of funds each year for staff training.

In addition, in-house training run by a team of trainers trained by the ILO and those who attended ISSA seminars was provided to specialised groups such as inspectors, publicity officers and benefit staff. This training was aimed at building capacity in order to cope with new demands. Seminars were also conducted for all staff to create awareness, thereby facilitating a smooth take-off of the scheme.

Lessons learned about training issues

Successful training depends on some basic steps:

- Training strategy should be established early

- Pedagogy and technology go hand in hand

- Start change (learning patterns) in the learner's head and in his/her attitude

- Explain the whole philosophy of the project to the users

- Require understanding and support all the way to the top of the hierarchy

- Consider the background and training requirements of the personnel so as to be able to deal with the technology being used in the project

- Be aware who the system is meant for – avoid complex systems for low-level workers.

  In local offices, do not forget the front-line staff who may not be directly affected but who will still have to explain the situation.

Questions

- Does the training programme actively involve the staff most affected by the proposed changes?

- Is the training team involved in the project from an early stage?

- How quickly can a specific training need be met, and how accessible is the training for relevant staff?

- Does the project encourage ongoing (lifelong) learning, or is it a one-off solution to the immediate problem?

Remember

Different staff have different needs – one size will not fit all. The National Occupational Union for Employment in Industry and Commerce (UNEDIC) in France adopted the following approach to ensure that the unique needs of each user group is properly supported.

Information and communications technology (ICT) social security project management

Training

National Occupational Union for Employment in Industry and Commerce, UNEDIC (Dailhé, Valencia, 2002).

Different training courses were created that were adapted to the profiles of the staff groups

Training V1

Didacticiel	• A brief training • Based on the capacitites of the new ergonomy (guided navigation) and new learning methods • Common to the two domains – collection of contributions and beneficiaries – with possibility to reuse them for the benficiaries migration.

Beneficiaries

25 institutions Sigma – 500 staff

• Staff training began 4-6 weeks before start
• 30 intermediary staff
• Pilot site – Assédic (Fund of Bourgogne) started in July 2000

Training exercises	• A single database for all institutions SIGMA and CONTRIBULL • Defined configurations for common exercises within all the institutions • A daily initial update of the database and a maintenance secured at national level.

On-going training	• A similar copy of the training database • A maintenance secured at national level • A support to the on-going training of the staff at their work stations after initial training until the delivery of Version 1 • Access on each work station of a training session 'Practical training V1' from the access screen Aladin V1.

Collection

45 institutions Contribull – 1300 staff

• 90 intermediary staff*
• Beginning of staff training in October – 2-6 weeks before start
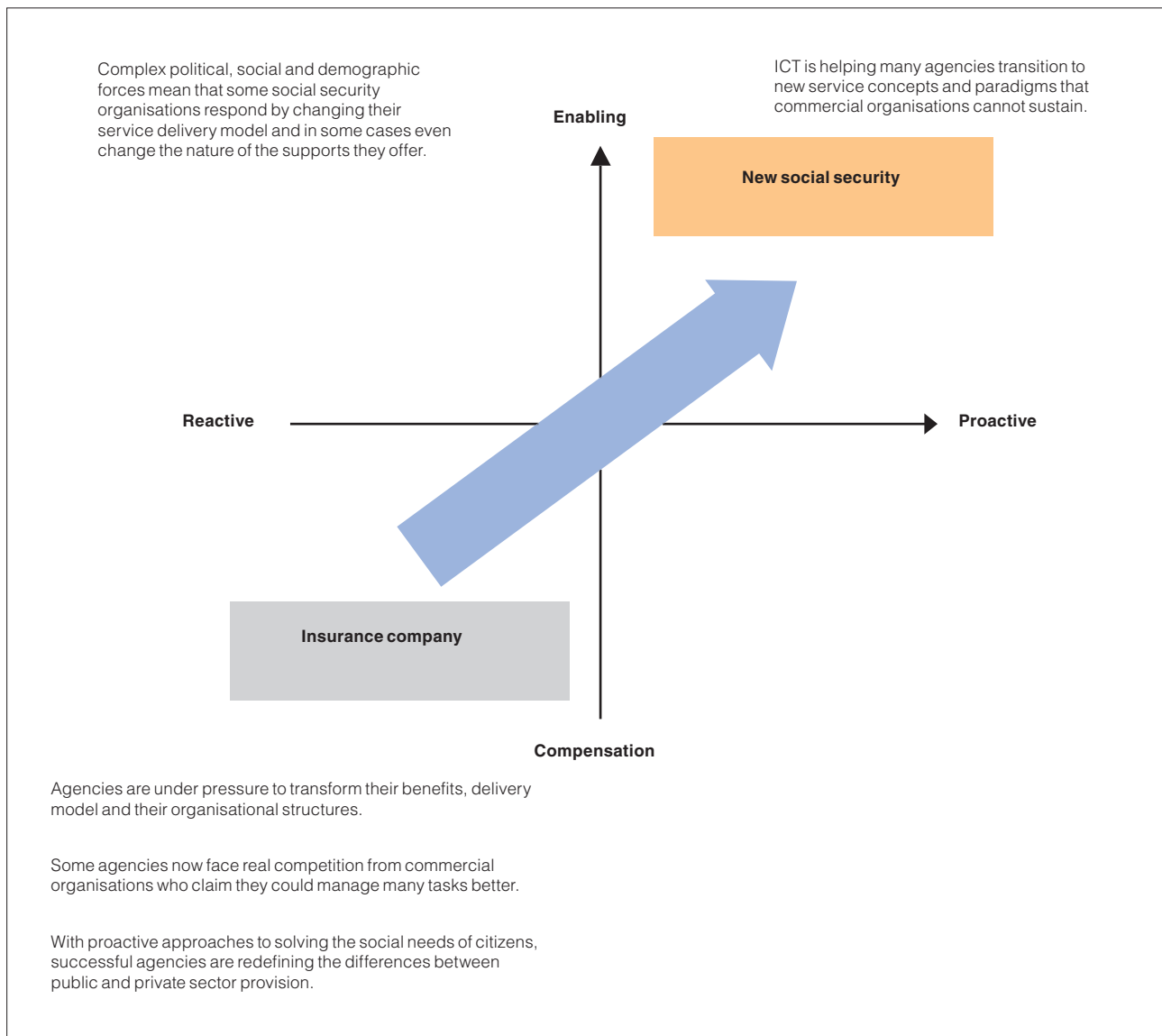• Pilot site – Assédic (Fund of Bourgogne) started in July 2000

1.5 to 2 days

These training activities permitted the spread of a new work culture inside the unemployment insurance.

Planning and managing human resource issues

Background

Traditionally, social security organisations delivered the services specified in the legislation or scheme that defined their role 30, 50 or more years ago. With increasingly complex social requirements and growing volumes of claimants, many organisations are under increasing pressure to achieve more tasks with fewer resources, and they have to deploy their staff and facilities in smarter and more efficient ways.

Complex political, social and demographic forces mean that some social security organisations respond by changing their service delivery model and in some cases even change the nature of the supports they offer.

ICT is helping many agencies transition to new service concepts and paradigms that commercial organisations cannot sustain.

Enabling

New social security

Reactive — — — — — — — **Proactive**

Insurance company

Compensation

Agencies are under pressure to transform their benefits, delivery model and their organisational structures.

Some agencies now face real competition from commercial organisations who claim they could manage many tasks better.

With proactive approaches to solving the social needs of citizens, successful agencies are redefining the differences between public and private sector provision.

They must balance different variables (available staff members, workload volume and complexity, and the working environment, for example, tools, architecture and geographical complexity) while coping with new challenges. These challenges include new forms of competition, both:

• Direct from commercial financial and other service agencies

• Indirect people opting out (legally and illegally) to manage their own affairs

  - Many organisations must also plan for fundamental changes in the types of benefits and services offered in the light of social and demographic changes. It seems likely that there will be greater emphasis on household and family factors and greater interaction with tax and private pension funds when entitlements are calculated in the years ahead.

Balancing the requirements

Whether workloads are static or increasing, there is a limit to how much the information system manager can affect the department's workload. The main variables are the number of staff members, claim loads and effectiveness of the operations. The first two are out of the ICT executive's direct control; he or she can however assist in improving efficiency and effectiveness.

Maximising the contribution of finite human resources is both a management and an ICT issue. ICT managers need flexibility to rearrange work assignments based on work priority, criticality, start date and other key factors.

Some projects are time sensitive, so a missed milestone could jeopardise all the work. Others have high security or high quality requirements. At the same time, managers are under pressure to estimate time schedules, costs, and deliverables on multiple projects based on incomplete information, often leading to unrealistic and inaccurate project plans.

In some situations, a lack of skilled and experienced personnel both in expertise in newer technologies and in quantity may persuade managers in social security organisations to outsource. However, an outsourcing approach does not eliminate the need to specify requirements that the contracted company will use to design, develop, install and operate the new system or application.

Outsourcing can be relevant in developing countries but seems to be more prevalent in more developed countries. In the past, outsourcing was often limited to the more technical aspects of projects but is sometimes now also considered for the management of the project itself. This may be an approach that organisations with no established tradition of ICT projects will find helpful.

Irrespective of the initial basis for a decision to outsource, there is anecdotal evidence that some consultants recommend off-the-shelf application software that must be tailored to suit the requirements of the organisation. Where the consultants do not have experience of social security project work, they can easily fail to understand the requirements and dimensions of a social security scheme and may base their advice and estimates of efforts on their experience with private sector projects.

Teams and workload

ICT teams are created to integrate support for a broader set of functions more effectively than a group of individuals separated by business boundaries. These cross-functional capabilities may be intended to serve different business requirements for technology, from traditional infrastructure support to rapid-delivery initiatives.

However, teams could be created on a basis appropriate to the project needs – one size or style does not fit everything. Permanent teams usually support infrastructure operations and are dedicated by the enterprise to a particular role. Temporary or periodic teams, on the other hand, are subject to queuing and prioritising questions that are linked intrinsically to demand, which is periodic and asynchronous.

According to the Gartner Group, factors that ICT executives (CIO in Gartner Group terminology) can influence or control fall into three main areas:

- Give people the correct environment. Management should provide the best possible tools, and develop and frequently review a strong architecture to ensure continued compliance. Enterprises should also pay close attention to standards and procedures, so that it is easy to cover absences and there are fewer unnecessary support calls

- Give people the right skills. Enterprises should invest in training staff members. The training should focus on developing a wide skill base in individuals and should not neglect career development by allocating some training time to areas that staff members want to learn. End users must be trained as well. Enterprises should measure – and aim to reduce – the amount of time high-value staff members spend on support calls. This can be achieved without reducing the level of customer service (whether perceived or actual)

- Actively manage the project flow. Introducing a simple project monitoring procedure improved on time, on budget delivery fourfold.

Build and buy partnership

Outsourcing is like delegating. You delegate work to someone else either because you do not have time to do it or because outsourcing can be cheaper. You may find design and architecture to be the core activities and testing and documentation to be the non-core activities. In social security institutions, it is quite clear what the core business functions are – to collect the information (and contributions, if social insurance is involved) to pay benefits, or to give other services, accurately and promptly. ICT is obviously vital, given the volumes and complexity and the need to transfer information rapidly to the point of contact. However, ICT is a tool and there are occasions when outsourcing will be the best option. Outsourcing is not a general solution for every problem, and great care should be exercised in selecting outsourcing models.

Another option for application development project work is contract labour services where enterprises use external staff to supplement internal resources.Internal ICT manages these resources and the outcomes.

Application outsourcing is defined (Gartner Group) as a multi-year contract/relationship involving the purchase of ongoing application services from an enterprise services provider that supplies the people, processes, tools and methodologies for managing, enhancing, maintaining and supporting custom and packaged software applications, including network-delivered applications. In addition to application management, application outsourcing isolates services specifically delivered in a longer-term contract in support of the application lifecycle, such as application, integration, development and deployment.

The users in most cases are trained only to make minimum maintenance without in-depth knowledge of the application software. All major maintenance could often be done by the external consultant to the extent that, without the necessary support from the consultant, the organisation is not in a position to maintain the software.

This outsourcing approach often requires lengthy preparation of the terms and conditions and budget approval to contract preparation.

When the INSS decided to develop a new service system based on new technology and service delivery models, it seemed logical that expert external support would be engaged, and a working party was set up to manage this process.

Partnership and cooperation

National Social Security Institute, INSS, Spain (2003)

Electronic communication services through the Internet have created a need for many new projects with different technology but often closely dependent on traditional systems in which data generally resides.

When the INSS decided to develop a new service system based on new technology and service delivery models, it seemed logical that expert external support would be engaged, and a working party was set up to manage this process.

Two different teams worked on separate parts of the project: host (legacy systems, data storage) and Internet (presentation of the information to the citizen). Each team worked independently, trying to reach its particular goals. Each team eventually considered its work on certain phases was concluded without taking into account that the project could not work without the synchronisation of both parts, something that was not fully tested.

With hindsight, the origin of the problems can be traced back to appointing a project leader for each team who was an expert in specific fields, but was lacking a general vision of the project as a whole. The experience has convinced the INSS of the value of one overall project leader with a general knowledge of the goals as well as of the equipment and systems.

Cooperation with a supplier – The law on old age wealth: Zusy project

Federal Institute for Salaried Employees, BfA, Germany (2003)

The BfA was given the task of forming the 'Central Incentive Authority for Old Age Provision' which was to pay incentives intended to promote private, capital-based pension schemes. Since it was theoretically possible that 30 million applicants would sign insurance contracts, it was clear from the beginning that ICT solutions were called for – wherever possible. Any concept would also have to reflect the need to reduce red tape and administration costs – the new insurance scheme had to start and stay popular. Since the project had a politically fixed time frame, the BfA ICT experts could not consider developing an application on their own. After a formal evaluation process, the BfA partnered with IBM.

The primary goal behind this decision, as well as the driving force for all resource planning, was to reduce risks to the success of the project. The company offered know-how on new Web technology that BfA experts had yet to learn. Only in the combination of 'learning by watching and doing' with the coaching of the consultant experts could the necessary know-how be built without endangering the project. IBM was also a partner strong enough to guarantee replacements if something unforeseen happened (for example, if one or more critical experts left the project).

It was clear from the start that the project would repeatedly have to justify its decisions and address budget issues to answer the political need for keeping costs low. A reminder of the new system's overall efficiency could not be enough. Keeping internal costs low was important as well. Therefore the BfA soon made detailed plans to ensure that the BfA ICT department could take over from its partner as soon as feasible, thus reducing any costs that would stem from over dependency on any one firm.

Lessons learned about human resource issues

Managing resource issues

- Have a general vision of the work to be done and of the final product that must be furnished to the user

- Look for a project leader able to handle human teams and able to manage comprehensive communication with the end users

- Prioritise actions to prepare reliable and comprehensive project estimates. Resources cannot be planned until the needs in terms of numbers and skills are known

- Pay attention to improving effectiveness of the personnel engaged on the project and what supports and training will increase their output and accuracy

- In the case of outsourcing, ensure that the vendor is responsible for the complete development and the delivery of a clearly defined final product and subject to clear rules on acceptance of the work and on the service levels expected

- When outsourcing development work, ensure that the analysis that will form the kernel of the contract specifies each and every aspect of the proposed job

- Base decisions on business needs and not on the skills available in the ICT department

- If the business objective is not to reduce costs, question carefully the motivation for outsourcing proposals.

Questions that might be asked when a project is being set up

- How are teams created and organised?

- How are priorities set between maintenance of existing systems and development of new applications?

- If staff resources are a major constraint, how can management be persuaded that more staff are needed?

- What are the best practices for evaluating and selecting enterprise service providers, and how were these examples of best practice obtained and validated?

- What criteria should be used to evaluate specific market/service offerings?

Lessons for start-up project situations

As already noted, long-established social security organisations deliver the services that defined their role many years ago, and they are now under increasing pressure to achieve more results with fewer resources. There is, therefore, a temptation to adopt the very latest technology when starting a greenfields project. Local IT experts who might be straight from university may advocate the latest thinking – for example, build everything in Java, all access should be over the Internet, etc. Ten years ago there were cases where client server architectures with Windows NT hosts were advocated for situations in less developed regions despite the fact that in Europe and in the United States, for example there was an acute shortage of Windows NT skills and experience. In fact, there are still institutions today in Europe grappling with the final stages of their equivalent client server architectural visions.

The technology selected in each region has to be appropriate to the available skills and infrastructure. Otherwise, training will become very expensive, and there will be high rates of turnover among skilled staff who will be attracted to better paid jobs in the commercial world.

When a new institution is being set up, it often has no option except to buy in skills to define and to build ICT systems. In the case of payroll, HR management, for example, there are generally choices that can be made in most local markets, and this manual will not attempt to offer advice on how these should be evaluated.

Most social security systems (laws and policies) and the associated administrative systems (processes, institutional arrangements and ICT systems) share common themes but they also have many unique national, regional or cultural features. However, there are a few frameworks available that suit mainstream needs and a few that offer built-in solutions for discrete tasks.

In terms of the more internal (back-office) functions, frameworks can offer alternatives to building everything from scratch. Frameworks generally are becoming more flexible and, where an institution has schemes and processes that are reasonably well aligned to mainstream social security concepts and practices, frameworks may provide a useful starting point. However, the availability of local support and costs needs to be carefully considered in addition to any assessment of the technical fit between any framework or customisable solution and the ICT strategy adopted for the organisation.

In the case of customer relationship management (CRM) suite applications, it appears that generic solutions appropriate to public sector needs generally will become more prevalent in social security administration. This is most likely to occur where the social security institution offers a complex range of services or collaborates with other institutions. However, CRM concepts can be effectively used in more restricted circumstances such as encouraging compliance by employers or in helping unemployed persons improve their job prospects.

The situation is evolving rapidly, and organisations should verify the latest position in their region regularly.

Some framework and CRM solution providers suggest that their approaches will help solve some of the complexities associated with migrating from legacy environments. However, experience shows that data migration in particular can raise important issues, and careful analysis of the situation is therefore important. Apart from the technical issues which are outlined in more detail in the next chapter, data clean-up may impose very substantial administrative burdens on the organisation, and these burdens may be increased if the framework or solution selected lacks the flexibility to cope with the realities of the legacy database environment.

ICT project management and risk management

Background

Social security organisations tend to have (or tend to grow) relationships with all citizens. As a result, they process large amounts of data regarding the collection of contributions, the registration of rights, the processing of claims, etc.

In many countries, social services or social security organisations are larger than the biggest bank, deal with more people than the largest retailer, and have more employees than any commercial organisation in the country. Even those countries with a social system distributed among many organisations (employment or regionally based) still tend to be large organisations in their own right and have the added task of inter-agency communication.

Because of the size of their operations, social security organisations rely heavily on the use of ICT. It is virtually impossible to imagine how they would fulfil their tasks using only pens and paper as well as even larger numbers of clerks.

Social security schemes often support a wide range of citizens, including the elderly, the sick and the bereaved. Generally they are obliged to apply rules in a very rigid way without the flexibility enjoyed by the private sector equivalent. Furthermore, they provide vital services, and therefore any problems with access or delays can create real difficulties for their customers.

Interdec – declarations of unemployment
Department of Social Development,
Canada (2004)

The Interdec application allows Canadians receiving employment insurance benefits to submit bi-weekly declarations of entitlement through the Internet. Some 22 million transactions annually are expected through this new channel. The project was a success because a Risk Management Plan was developed for all possible conditions which could jeopardise it.

In a development project, the loss describes the impact to the project which could be in the form of diminished quality of the end product, increased costs, delayed completion, or failure. For the Interdec project, the plan contained for each risk identified and referenced by a risk number a risk statement (possible condition and consequence), probability of occurring, the mitigation strategy, the contingency approach, what could trigger the risk, who is responsible for action to mitigate and cope with each risk and the status for each identified risk.

Social security agencies therefore face unique combinations of problems. This means that when applying changes to existing information systems or creating new ones these organisations face often larger and more tasks and risks than commercial firms. In addition, they are often constrained by public sector rules on procurement and salary and grading issues that accentuate the problems of tight budgets and uncertainty over the next year's and following years' budgets in an environment where a change in political opinion might result in demands for urgent changes in schemes and service delivery models.

Potential consequences of social security ICT project risks
Risks are increased by the fact that most social security organisations:

- Have a legislative directive to be correct in what they do (which means that their systems have to perform precisely to specification)

- Provide benefits and services that are complex and ever-changing (which means that during an ICT project goals and objectives may change frequently).

In addition to the risks that contributions will not be collected, organisations have the problem that fraud prevention will be delayed or that important service delivery improvements will not be delivered on time. Project failures create other risks for many organisations, including:

- The organisation's reputation as leading public sector agency may be damaged in the eyes of politicians and the public

- Government may reduce the allocations made for future ICT projects

- Government may strive for more control, resulting in difficult coordination and oversight and review processes

- Important windows of opportunity may be missed or important deadlines to implement new benefits or new service methods may not be achieved

- The organisation may have difficulty in recruiting or retaining skilled ICT staff; other agencies or the private sector (banks, commercial insurers, other service providers, etc) may begin competing more aggressively or more credibly against the social security agency

- Damage can spread outside the agency. Delays or failures might affect the perception of a government's financial standing. For example, in some developing countries international organisations' commitments may be related to success in reforming or introducing social security programmes.

Questions

• How might relatively small agencies reduce project risks?

• How should systems be piloted in production environments, and are different approaches needed for large and small organisations?

• How can organisations inform politicians and other decision makers better about the constraints and costs in terms of time, skills and money before they decide on policies and laws that require very complex changes to ICT systems and services?

Problems in adapting regulations
Estonian National Social Insurance Board (Kressa, Berlin, ISSA, 2003)

The goal of the project was to enhance the existing ICT system to permit implementation of the social security coordination rules (as provided under European Union Regulations 1408/71 and 574/72). Additional goals were to:

- Provide consistent and good quality services to all persons eligible for every kind of social security benefit

- Enable information exchange with other Estonian institutions and with other institutions of other EU member states

- Provide a basis for Web information and e-services.

In addition to all the usual risks expected during typical modification and development of ICT systems, the following risks were encountered:

- Problems in calculating 'residence periods' during the period of transition (because some of the records of the social security institution are not complete)

- (Lack of) precision in measuring of 'employment/insurance periods' (same issue as above)

- Having to implement new EU regulations, new Estonian administrative rules and a modified ICT system at the same time

- Different character sets in different member states, thus imposing a need to store data in the database in western European character set and in the Estonian character set at the same time.

Approaches

Learn from the past

Ideally ICT project planners can learn from the mistakes and difficulties encountered earlier on other projects, so that the mistakes made are original mistakes and not simply a repetition of problems already well documented elsewhere.

An important step in coping with risks in ICT projects is for institutions to learn from their own, hopefully innovative, mistakes. This means that by reviewing and analysing their own projects (the successful ones as well as those that failed), organisations can learn important lessons, such as when and at what stage of the project, things started to go wrong so that they can be used to improve the success rate of future projects.

Prevention (from the start of the project onwards)

The second approach for risk reduction is to assess the actual project risks before the start of the project. In the project plan, the PM should include a version of the following table:

In this way, the PM is obliged to make a rational analysis of the risks involved in the project, as well as of the measures that can be taken to minimise or eliminate these risks. During the project, the PM continues to assess the risks related to the project in two ways:

- By addressing each risk factor periodically, and reporting the current status of both risk factor and preventive measures in the (monthly) progress report

- By continuously monitoring the environment of the project in order to detect new risks and adding these to the (monthly) progress report.

Understanding the risks and incorporating risk containment actions in the daily management of ICT projects as described here will lead to better outcomes.

Risk areas	Risk factors	Chance that risk occurs	Impact when risk occurs	Preventive measures taken

Types of risks when implementing ICT projects

There are a number of risks with which all ICT projects will be confronted. These are:

- Changing the scope of the project and/or adding functionality while it is being executed

- Attempting to achieve too much too quickly

- Attempting to predict too much of the future

- Prematurely adopting modern designs that are complex and are composed of products which are difficult to integrate and for which there are few successful models available for detailed evaluation

- In migration and/or in re-engineering activities, underestimating change and configuration management activity

- Changes in technology (especially middleware and development tools), combined with over-enthusiastic technicians

- Current (public sector) tendering approaches that, in many countries, take too long and cost all concerned without clear evidence that best value is being derived

- Leaving little room for the unexpected.

However, social security has its own characteristics, which can lead to risks that are specific to social security ICT projects:

- Data migration issues are consistently underestimated

- When a project may last longer than the forecast budget period, it is often difficult to find long-term financing for it, and this increases temptations to cut corners, often leading to even greater problems

- There is excessive, and often meaningless in economic terms, complexity and detail in policies and rules (partly based on legislation)

- Political priorities may change during the lifetime of the project

- The dedicated nature of many people involved with social security can lead to counter-productive debates that compromise efficient project management. For example, most social security ICT professionals can cite at least one example where the technical effort involved in developing solutions that could automatically calculate results in 100 per cent of cases far exceeded the potential administrative or other savings.

Specific risks in developing countries
World Bank Conference, Warsaw (ISSA, 2000)

During the Conference in Warsaw, ISSA presented some of the problems and risks that developing countries encounter when applying information technology. Examples given included:

- Operational constraints are exacerbated by the fact that computer technology is an imported technology; for example, in Africa

- The hardware and the software have to be sourced from abroad

- The foreign exchange commitments are enormous. Computer-related expenditures can comprise a significant element in the annual budget

- Despite maintenance agreements, there are still frequent system breakdowns

- Maintenance staff can take several days to respond to distress calls

- The maintenance job can take days and often weeks

- In the interim, many computer-based activities are totally paralysed, resulting in a backlog of data to be captured and records to be updated

- There is an acute shortage of human resources, especially in the area of software development

- Local software training facilities and opportunities are very limited

- Overseas training is expensive and sometimes not relevant to local circumstances

- There is a brain drain from social security institutions to private computer firms.

Risks and constraints

National Insurance Board, Trinidad and Tobago (Charles, Montreal, ISSA, 1999)

Risks and constraints

Not withstanding the advantages of e-services, the NIB first gave serious consideration to various risks in adopting e-services.

The main risks related to:

- Information security in the transfer of data, protection of information and potential infection of the NIB central database

- Recognition of specific document formats in legal proceedings

- Other legal and regulatory issues centred around intellectual property rights and consumer rights

- Cultural acceptance of the proposed new ways of 'transacting business' with the NIB.

Constraining factors identified included:

- Limited customer access to telecommunication services, as well as computer equipment and software

- High start-up and transition costs

- Increased mobility of experienced information technology specialists and other knowledge workers.

Change management, not technology, is the most difficult aspect of putting services online.

Information and communications technology (ICT) social security project management

Data and legacy application migration

A consistent feature found in many troubled projects relates to the problem of migrating legacy data to new environments. The obvious problems include incomplete data and data that originated in 'flat files' and that have therefore to be transformed into more modern relational formats.

Less obvious problems that can arise include multiple 'unique' references for the same individual and the occurrence of data fields that were 'cannibalised' for a variety of uses when work-arounds had to be implemented in earlier years.

Additional problems arise where the data relates to special (that is, non-Latin) character sets and where there is little established experience in migrating such data between databases supported by different vendors, particularly where the legacy database is no longer supported as a mainstream product.

Data migration

General Organisation for Social Insurance, GOSI, Saudi Arabia (2004)

Migrating 30 years of ADABAS data to an Oracle database was one of the most important sub-projects undertaken in GOSI's Social Insurance Management Information System (SIMIS) project.

The effort involved, in administrative and technical terms, was considerable due to such issues as:

- Differences in business rules between the new and legacy environments

- Migration from an inverted list database to a relational database

- The need to clean up data

- The need to contend with the conversion of special codes for Arabic in the legacy system while the new system uses standard ASCII formats.

Lessons learned regarding project and risk management

An integrated approach is needed

An integrated approach to risk management must begin at the top, with senior managers defining acceptable levels of risk and aligning those to the enterprise's business strategies.

There are some basic steps that apply to all projects:

- Look at risks at the start of the project and assume that the risk factors will change, in particular:

  – Do not deny the occurrence of risk factors and be alert to new risks

  – All potential risks – technical, business process, organisational, cultural and political – must be identified early in the process. Mitigation strategies to address these risks must be developed, maintained and evaluated on an ongoing basis

  – Keep asking for risk assessment reports

  – Have a contingency plan ready for the known risks

  – Make sure the risk management plan covers more than just disaster recovery – it should also address the issues of growth, maintainability and usability.

The ICT organisation should play a critical role in implementing an enterprise-wide risk management function.

- Ideally, an ICT expert should participate in the development and implementation process of new legislation or rules that affect critical business systems and service delivery standards. Experience shows that this approach will minimise risks that ICT projects, or indeed existing ICT systems, will constrain policy objectives in unexpected ways

- Try to avoid any large scope or long duration project that cannot be subdivided into smaller autonomous and meaningful deliverables which can be delivered on a phased basis

- Be alert to the possibility that comprehensive testing is not a substitute for the experience of live production.

Technology risks

The next section examines technology issues in more detail. In terms of risks and lessons learned experience shows time and again that unexpected technology problems (integration, performance, scalability, etc) can disrupt projects at a very late stage. The risks increase where new products are involved, due to unfamiliarity with the products and the speed of evolution in their early stages.

- Addressing the technology risks requires appropriate measures planned from the beginning. One way to mitigate the adverse effects of unforeseen problems is using prototyping techniques. Prototyping gives a good feeling about how the system will work and perform in the real world

- However, do not let prototyping (undertaken initially to minimise risks) evolve into 'a license to do nothing.'

Lessons for start-up project situations
Learn from somebody else's past

New institutions may not have a past, but they can learn from others. Do not be afraid to seek advice and opinions from other institutions and other countries. Look at neighbouring countries, but also look at countries that have made a rapid successful transition in the last 20 years. Try to identify potential mentors who have directly experienced equivalent changes in their national institutions.

Technology

Background

Apart from ICT companies, technology is not a business objective in its own right. Most organisations use ICT as a means to an end, and social security organisations are no different in this respect. When innovative ICT is being considered, senior executives should ask themselves whether the business objectives in question can be obtained with more traditional or proven technology. They should ensure that any project proposals involving a total modernisation of systems and infrastructure are carefully assessed to verify that the proposals are business driven and not overly influenced by a desire to have showcase technology. Incremental modernisation and extension may be feasible. For example, recent developments in technology can provide new approaches such as adding new channels to systems rather than rebuilding them.

Projects do not succeed accidentally. Success will only come if good planning is in place. For example, to ensure that the system will work correctly, a complete testing strategy is necessary from the beginning. A poor testing strategy leads to poor quality results and, at best, unhappy project sponsors.

Internet retirement insurance benefits
Social Security Administration, SSA, United States (Gray, ISSA, Valencia, 2002)

In early Spring 2000, the US IRIB (Internet Retirement Insurance Benefits) development reached a point where the application was functional and ready for testing. The first phase focused on usability testing, not using live production cases. At the time, federal agencies were barred from contacting the public directly due to potential conflict with the decennial census (and the confusion that could result.) Phase one testing was therefore conducted through an outreach programme with seven major employers across the country. IRIB conducted focus group-type sessions with several individuals at a time. The SSA queried participants about their level of understanding, ease of use, etc. Based on the feedback, the SSA made substantial changes to the software.

Following usability testing, the SSA initiated phase two of its IRIB testing. Pilot tests of the application were conducted using a select group of applicants. The number of applicants participating was somewhat lower than expected (seven percent vs. ten percent). However, there was a very high response rate to the follow-up questionnaire the SSA sent to the participants. These responses – as well as feedback provided by the SSA claims representatives participating – showed the SSA where the application (and its own internal processes) needed improvement. Again, substantial changes were made. From the customers' perspective, many of the substantive changes to the application were made based on this evaluation. Questions were clarified and data gathering procedures were changed to minimise the need for re-contact with the applicant.

Timing

A conservative approach may be the most elegant

The modern information society creates additional, and sometimes unrealistic, pressures on many social security institutions to use more advanced, but perhaps relatively unproven, technologies than is strictly required.

As a general rule, social security agencies, like most organisations, need to take a cautious approach when leading-age technology is considered. Despite the promised benefits, one also must be prepared to say 'no.' ICT executives or decision makers may validly conclude that some technologies are not ready for mainstream adoption.

According to the Gartner Group, benefits achieved by companies that take a deliberate and planned approach to adopting new technologies include:

- Identifying strategic opportunities that combine technology 'push' (for example, through technology tracking) with business 'pull' (for example, based on business context and goals)

- Prioritising options, thus ensuring a more intelligent selection of the technologies most likely to have a major positive impact

- Coordinating all activities related to emerging technology across the company, enabling it to build on successes and avoid redundancies

- Educating staff to become skilled in the risk management associated with introducing new technologies, including stopping investments if appropriate.

Network services
National Social Insurance Institute, INPS,
Italy (2003)

The INPS has multiple service delivery channels, including local offices, call centres and the Internet.

The INPS needs to ensure that customers and intermediaries receive a consistent response in terms of quality of service and outcome, irrespective of the channel selected.

Achieving this outcome involved a systematic review of all applications over a period of years followed by re-engineering of user interfaces. A Web-based user interface permitted reuse of the same application through each channel and univocity of the output and communication and integration of legacy-based account management applications and open systems-based account management applications.

See Annex I for additional details

Match the solution to the business need

When administrative problems are due to process inefficiencies or bottlenecks that cannot cope with volume increases, advanced or emerging technologies are not necessarily the best solution. Sometimes process changes or old and simple technologies give the fastest and most effective solution. We need to avoid searching for a problem that fits the latest solution.

It is very important to recognise, and therefore avoid, frequently occurring inappropriate reasons for adopting the latest technology. The high level of hype surrounding technology in the marketplace is one of the factors that frequently drives companies to premature adoption of emerging technologies.

Alternatives in the development of a service through the Internet
National Social Insurance Institute, INSS, Spain (2003)

The development of the first INSS service through the Internet triggered the need to choose a technological alternative and a specific architecture.

The technical circumstances at that time and the characteristics of the available team suggested a development approach using low level languages. While these languages are very efficient, they are also difficult to use. It soon became obvious that the skilled personnel needed to maintain an environment appropriate to this approach would be difficult to find and would be expensive.

The second approach the INSS tried was to use a programmatic representation of an established legacy application. This approach, it was argued, would make it possible to use practically the same transactions as on the main or central host, with minor adaptations. This system appeared to be cheap and fast. Nevertheless, it presented strong limitations in the Web environment. Finally, it was rejected due to security problems in some specific products.

The third approach, and apparently final one, involves using the architecture now most commonly seen in that type of project:

- Presentation (client) through Web pages developed in Java (on UNIX®)

- In the server, the access to data is done through a natural sub-program (high-level language generally used in the installation) and communication between both environments (middleware) through Entire-X.

The dangers of reacting to promises of vapor-ware

The role that hype plays in the early stages of a technology's lifecycle can be represented by the Hype Cycle model of emerging technologies, introduced by Gartner in 1995 (see the figure below).
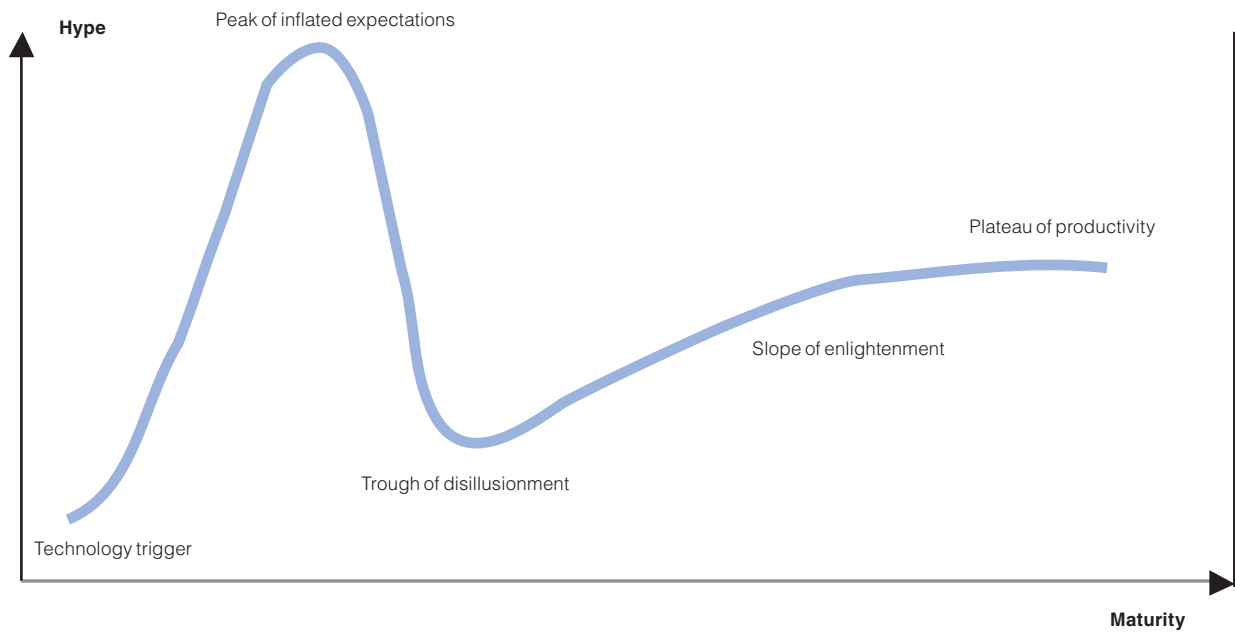
Source: Gartner Research.

The Hype Cycle characterises the typical progression of a technology, from over-enthusiasm through a period of disillusionment to an eventual understanding of the technology's relevance and role.

The main lesson of the Hype Cycle is that companies should not invest in a technology just because it is the latest fashion; nor should they ignore a technology just because it is not living up to early excessively optimistic expectations. The Hype Cycle is also useful in explaining why the recommendations from technology planning groups may be different than what companies are hearing or reading in the media.

At the Peak of Inflated Expectations, technology planners will caution: "Don't get caught up in the hype. Let's adopt it only if it is strategically important to us. Otherwise, let's wait for others to learn the hard lessons."

In the Trough of Disillusionment, technology planners will recommend: "Let's start looking at the technology now because there are some solid products emerging and real world experience about how to use the technology."

Note also that technologies can have ripple effects, both positive and negative, on the whole company. For example, implementing a workflow and imaging architecture not only affects the volume of paper, but usually also reduces the traditional workload for clerical and data entry staff. It can also improve employee information access, which often translates into better customer responsiveness and faster product turnaround.

Before deciding to invest, it is important that project proposals quantify the expenses incurred by the company due to the problem being solved, for example, arising from an ineffective process. Throwing expensive technology at an inexpensive problem results in a net negative position for the organisation. Indeed, there have been situations where complex and expensive 'overkill' solutions subsequently constrained the company from addressing bigger and more relevant problems due to a combination of caution arising from the earlier bad experience and problems in supporting the high-tech solution that had been acquired without proper analysis of the full costs of ownership. Evaluation projects should aim to identify these ripple effects, in addition to the direct costs and benefits.

Even when the project leader or the ICT department has identified a technology that promises to bring significant benefits to the organisation, attempts to push the technology into deployment may be resisted by line units. This natural organisational reluctance to change is compounded when the new technology replaces existing technology (such as a new network architecture) rather than augmenting it (for example, a new analytical tool). Particular resistance may come from the operations group, which must throw out established procedures, expertise and experience and start over with the new technology.

Implementation

Prototyping

Prototyping should be used to prove that the technical system can and will work. Implementing simple prototyping techniques is a sensible way to mitigate the adverse effects of unforeseen problems. A second benefit often achieved by prototyping methods is the ability to gain support among potential users; this is illustrated by several case study references in this report.

According to the Gartner Group, prototypes are used primarily as a risk reduction tool to investigate areas of high technical uncertainty and also sometimes as a marketing tool to increase internal awareness of a technology's potential. Examples of uses of prototypes include:

- Assessing the robustness, performance or accuracy of the technology

- Determining the impact on established architecture and infrastructure

- Refining the scope of the application

- Estimating the costs of deploying a pilot or full-scale application

- Inspiring management and users by demonstrating potential business benefits.

Inevitably, as user-clients become familiar with a working application ('proof of concept' or prototype), new requirements are generally added and existing needs are refined. This process results in a better and more constructive relationship between the user group and the ICT department. Prototyping also increases the likelihood that the system will be what the client wants and will use. A proof of concept approach is also an excellent way to manage technology risks, particularly for architecture.

Testing

There are different types of testing:

- Does the system work at all in a technical sense?

- Does the system work correctly (logic testing)?

- How will the system perform in the real world (usability)?

- How will it cope with expected volumes and peaks (scalability)?

A typical example could be a Web application that may work with one user, but it should also work well when used by many (for example, over 100,000) clients simultaneously.

Other kinds of testing may also be identified, for instance, integration testing. Errors or problems of a technical nature are often found during initial integration testing, and usually these will translate into changes to important parts of the overall design or logic. This kind of testing was used in several reference studies and it highlighted the necessity of strong coordination when different technological environments are involved.

Lessons learned about technology

Timing the adoption of newer technology

- Be prepared to say 'no'

- Manage the users' demands for the latest, possibly unproven, technologies

- Keep an open mind as to the best solution

- When choosing a technical solution, look at other factors such as the financial stability of the providers

- Do not be distracted by 'non-consolidated' technologies offering vague hopes of 'miracles' if the components will, in fact, eventually work together as promised.

Prototyping

- Encourage innovation, but make sure it is wanted and needed by the customer

- Do not attempt quick solutions that may compromise the future

- Make use of a central architecture group to review not only the architecture but also the design deliverables.

Testing

- Appoint a test manager and begin testing at an early stage

- Develop a test strategy and start at the beginning

- Ensure adequate time for testing

- Involve key business representatives or users in all aspects of testing

- Do not forget the real world; main focus: performance, integration, know-how.

It is never too late to stop doing the wrong thing and never too late to learn

- Political factors may also lead the ICT decision makers to decline a potential project at any stage in its lifecycle: if the ICT decision maker feels it is being used inappropriately to broker a sensitive political battle, then it may be wiser to look for alternative project candidates

- It is sometimes difficult to visualise and describe the higher-level integration requirements. Make sure you have someone who is knowledgeable and can articulate the requirements clearly.

Do not be afraid to ask questions

- When should a specific new technology be adopted?

- What is the best way to introduce Internet-based services to clients?

- What are the business reasons for adopting a 'big bang' or a phased approach?

- Why is prototyping appropriate in this case?

- What kind of testing is planned and how qualified are the testers?

- Are qualified external or internal resources (infrastructures, laboratories, etc) available to conduct integration testing on a full range of acceptable desktop configurations (for example, operating system variants)?

- Be aware that many organisations still only start formal test activities when the project is almost finished; therefore, seek reassurances on test plans and related issues:

  – Will a test manager be appointed early in the process?

  – When requirements were defined, were the testing issues considered?

  – Were the requirements formally documented, and is other system documentation available to assist the test team set baselines?

  – Will the test plan test all architecturally significant elements in an iterative way?

  – Are there developed plans to set up the testing environments from an early stage?

Lessons for start-up project situations

- Use the advantage of a greenfields situation.

- Avoid trying to become a world or regional leader in a technology

- It is never too soon to start doing the right thing and never too early to learn.that long-established institutions are still only testing.

Project control and monitoring

Background

Projects do not simply propagate in space. A business need is identified, and this should be described in a formal way along with statements of what is expected, how and when it will be achieved and who will achieve the results and at what cost.

Without formal planning, entropy is likely to dominate with resulting business chaos.

Does this sound familiar (or 'are you sleeping well at night')?

With a tight timeframe, limited project management experience, and in the absence of a project management framework, Peter is managing the 'XYZ' project as best he can. During the first week, he met with his project team and the client group to discuss general requirements and project timeframes. He then proceeded on his own to create the 'plan' and 'project schedule' comprised of a statement of work, product description, team roles and responsibilities, work assignments, start and finish dates, etc. He presented the plan and schedule to the team and, having received little feedback on either (the team having assumed that Peter was the authority and the expert), the team got to work.

Two weeks into the project you receive a status report from Peter. The report indicates that the project is underway, is on schedule and there are no issues. As the weeks go by, the status reports continue to indicate that all is well; Peter has the project under control. During the third month, Peter reports that the client has asked for new features that will significantly change the scope of the product and the project. However, he has agreed to make the changes to keep the client happy. Besides, his 'gut feeling' is that he can still deliver on time. You call Peter to get more details on the changes and to ask him how he plans to do more work within the time and budget constraints that have been imposed on him. He says he has confidence in the team's ability, and besides they have offered to work overtime if necessary. You tell Peter that you would like to see him in your office right away.

You can fill in the rest of the story from your own imagination and (undoubtedly) from your own experience.

What is project control all about?

Planning: The foundation for project control

Following the development of a project charter and a preliminary scope statement, the PM must define how the project will be executed, monitored and controlled. The project plan is the tool used by the PM to do this.

Regardless of the nature of the project, a comprehensive plan should address the ways in which scope, schedule, cost, quality, staffing, processes, communications, risk, and procurement will be managed. The level of detail will vary according to the characteristics of each project but each area should be explicitly considered. The plan should also include the project objectives, assumptions, project organisation, procedures, review/approval checkpoints or 'gates', potential risks, the work breakdown structure, network diagram, schedule, the budget, resources (people and equipment), and more.

It is the PM's responsibility to prepare the plan with the assistance of the project team and other project stakeholders. When approved the scope, cost, schedule, and technical components of the plan will become the baseline on which project performance and, ultimately, project success can be measured.

Control and monitoring

When the approved plan and baseline(s) are in place, control and monitoring of the project are primarily concerned with the degree to which the project is performing against the plan/baseline (such as, planned versus actual) and taking corrective action when necessary. Key to successful control of the project is a good plan, effective communication, and well defined project processes (change control, for example) such as those that comprise a project management framework. The PM will compare time, cost, quality and performance objectives at every stage of the project and update the plan and baseline with approved changes throughout the project lifecycle.

Measuring project performance

It is the PM's responsibility to continually monitor the state of the project against the project plan and other controlling documents such as the project charter, statement of work, requirements and specifications. Monitoring project progress against the plan will identify schedule, cost and scope discrepancies that may require further attention and, perhaps, updates to the project baseline (see Changing the baseline below).

One of the most effective methods for measuring and forecasting project performance and progress is Earned Value Management (EVM). EVM integrates scope, schedule and resource data, giving the PM the ability to identify trends and spot potential issues much sooner than by comparison of planned versus actual dates and costs alone. Among the benefits of using EVM is the ability to gauge the 'health' of the project by calculating an index of the project's cost performance (CPI) and its scheduled performance (SPI).

Changing the baseline

Changes to the project plan and baseline(s) are inevitable, and it is the responsibility of the PM to manage and to integrate changes across the entire project. This means:

- Influencing the factors that create changes to ensure the changes are agreed upon
- Regulating the flow of requested changes and documenting their impact
- Implementing only approved changes and modifying the baseline and associated planning documents
- Managing approved changes as and when they occur
- Determining that an approved change has been implemented.

To effectively manage change the PM must have the authority to control changes, as well as to influence outside factors that may result in unnecessary change.

Reporting process

All team members and project stakeholders require periodic updates on project progress, issues, risks and more. The communications plan will have identified the 'who, what, where, when, why and how' of project communications. Weekly status reports and meetings are effective means to keep the team informed.

An executive 'dashboard' report is a common reporting mechanism for PMs, business sponsors and other senior managers to periodically view the status of one or more high-profile projects and to monitor progress against key indicators. Dashboard reports typically provide decision makers with an analysis tool and communication vehicle for proactive planning and risk mitigation. They also highlight critical areas of interest against which further detailed information may be requested, including:

- Project status
- Planned budget, actual expenditures for the reporting period, and forecast information
- Planned timeframe (either by gates or milestones) to complete the deliverables and the project progress
- Percentage of functionality delivered: what is late and what is overdue
- Severity of the risk, its impact on the project and the source of the risk
- Staff turnover and overtime for the month
- Overall health of the project portfolio.

Lessons learned about project control and monitoring

A change control system is a collection of formal, documented procedures that defines how project performance will be monitored and evaluated. It includes steps by which formal project documents may be changed and also includes the paperwork, tracking systems, processes and approval levels necessary for authorising changes.

The control approach should be grounded on practical issues that everyone can conceptualise and understand.

Triple constraint

There are three finite factors that affect the outcome of all projects. These are sometimes called 'triple constraint' – scope, time and cost (and quality). The relationship among these factors is such that if any one of the three factors changes, at least one other factor must change.

Overall change control is concerned with:

- Influencing the factors that create changes to ensure that changes are beneficial

- Determining that a change has occurred

- Managing the actual changes as and when they occur.

Milestones and baselines

Monitoring progress requires well defined milestones or targets. A milestone is a clearly identifiable point in a project that summarises the completion of a related or important set of tasks. Milestones are commonly used to summarise the important events in a project for managers and stakeholders who do not want or need to see the details in a project plan.

The baseline (scope, time, cost, quality, performance, or technical) is the approved time phased plan, plus or minus approved scope, cost, schedule, and technical changes that may occur during the life of the project.

EVM is a methodology for integrating scope, schedule, and resources to objectively measure project performance and progress. Performance is measured by determining the budgeted cost of work performed (that is, earned value) and comparing it to the actual cost of work performed (that is, actual cost). Progress is measured by comparing the earned value to the budgeted cost of work scheduled (that is, planned value).

Performance measurement techniques help to assess the magnitude of any variations that occur. Determining what is causing the variance relative to the baseline and deciding if the variance requires corrective action are important steps in scope change control.

Bigger is not always better

Research by The Standish Group
(www.standishgroup.com) indicates that smaller time
frames, with delivery of software components early
and often, will increase the success rate. Shorter time
frames result in an iterative process of design, prototype,
development, test, and deployment of small elements.

Lessons for start-up project situations

- Clear milestones applied equally in all regions and in all
  situations are needed

- Long drawn-out projects rarely succeed fully, and in a
  greenfields situation the risks increase rapidly

- Fast visible wins will quickly build up an understanding
  of ICT issues across the organisation

- Senior managers and boards may be tempted to
  develop informal channels for reporting on progress
  and problems. There are obvious risks that become
  accentuated in the years before a solid team spirit
  comes into being. In fact, informal reporting lines may
  delay the collegiate atmosphere essential for major
  ICT projects.

Assessing project progress – independent project review

Background

While there are obvious advantages in setting up meaningful and measurable targets and baselines, it sometimes happens that project teams become exposed to pressures to achieve the impossible or they may be unwilling to accept that their judgment was not as good as they believed. To guard against these risks arrangements for independent review may be important.

Senior executives may also find that an independent review process helps them negotiate with Ministers or other agencies when seeking resources and meaningful timetables for implementation.

Does this sound familiar?

Peter, the PM on the 'XYZ' project, is in the fourth month of a ten-month project. His bi-weekly status reports continue to show that the project is on time and within budget and that there are only minor issues related to user requirements and development resources – issues that Peter reports are completely under his control. Other than weekly staff meetings and the occasional 'good morning' in the hallway, you have not met with Peter to discuss the details of the project since you assigned him as PM. You are curious about the issues he has identified and ask him to meet with you for 15 minutes – nothing formal. After all, the project is going well, isn't it?

Five minutes into your meeting, you realise that the project is in trouble. Not only is Peter's plan incomplete (your notion of a plan is very different from his), but the issues he raised will likely result in the project being late and way over budget. After 20 minutes, you ask yourself why you didn't take a more active role in the project. After 30 minutes, you inform Peter that from now on you will be involved on a daily basis. Among the next steps you'll take will be to conduct an independent project review to identify how the project has gone off the rails and what will have to be done to get it back on track.

You can again fill in the rest of the story from your own imagination and (undoubtedly) from your own experience.

Independent project reviews (IPRs)

Depending on the nature of the project – its priority, size, cost, duration, risks, and use of technology – at least one independent project review (IPR) should be planned for at a key point in the project's lifecycle, preferably earlier than later.

The purpose of the IPR is to objectively assess the degree to which the project is being managed according to the organisation's project management framework (standard processes and procedures) and how the project is performing in relation to the agreed to scope, cost, time and quality objectives (that is, to the project baseline). From the results of the review, senior stakeholders will determine whether or not to allow the project to continue and under what conditions.

IPR reviews should be conducted by an independent third party who has the broad-based skill set necessary to review the key elements of the project. A report will include written recommendations as to how to get the project back on track to satisfy the needs of both the customer and the performing organisation.

IPRs can also facilitate user acceptance. Users may be reluctant to accept changes, particularly if they do not feel confident that they really understand all the implications. Using an independent review can help them in important ways.

Independent testing
Federal Institute for Salaried Employees, BfA, Germany (2003)

In 2001, BfA features allowed users to individually 'customise' their workspace and a method of guiding the user through the steps necessary to complete whole business processes. Accordingly, not only the GUI (graphical user interface) but the approach to ICT support changed.

The users' first reactions were not encouraging. They missed their old application and looked for 'simple' improvements on the old design.

Although the project members were convinced their design was good, they opted for an independent audit of the product's usability.

Apart from some expert advice and evaluation that greatly helped in the further development, the users accepted the opinions of independent, impartial experts. The role of the reviewers was therefore helpful in building consensus between the users and the technicians.

See Annex I for additional details

IPR scope, depth and timing

When conducting IPRs, the reviewers keep the following in mind:

- IPRs differ from PM-led status meetings in that IPRs are generally initiated by senior management and/or are a contractual requirement. They are not monthly status meetings

- IPRs assess – without project team bias – the project status as it relates to the scope, time, cost and quality components of the project baseline.

IPRs should be planned in advance, but all too often they result from knee-jerk reactions to bad news or from efforts to apportion blame when things start to go wrong. In any event, Steering Committees or whoever approves the final assessment of a project should not wait until the end of the project to arrange an IPR. The main purpose of an IPR is to identify, in good time, the best corrective action. Delaying until problems are evident usually makes it impossible to take the most effective corrective action.

Ideally, IPRs should be scheduled towards the end of the initial 'planning' phase with subsequent reviews conducted prior to product deployment and at project close-out.

Cancelled projects are often caused by problems of inadequate planning, inadequate cost estimating, missed schedules, long schedules, excessive time to market, cost over-runs, inexperienced management, management malpractice, inexperienced clients, creeping user requirements, an inadequate development process, low productivity and low quality.

An IPR can forecast the time and cost required to complete the project and, along with variance and root cause analysis, can help in making the strategic decisions needed to put the project back on track.

By conducting IPRs during the life of the project, it is possible to apply lessons learned towards improving the outcome of the project, rather than 'learning valuable lessons from the failure of the project'.

Project audits are one way for an organisation's Project Management Office (PMO) to validate whether the project teams are utilising the appropriate project management processes that comprise their project management framework.

Assessment and review
Ministry of Social Security and National Solidarity
(Deerpalsing, Mauritius, ISSA, 1997)

Before the end of the warranty period, systems
are assessed by the Central Information Bureau's
quality assurance team as regards performance,
benefits actually derived compared to what was
expected, objectives not met, etc (as per functional
specification) in order that any shortcomings can
be rectified by the software contractor without
additional cost.

In one typical project, the Ministry entered into an
Application Software Maintenance Agreement
(ASMA) with State Informatics Limited (SIL) after the
warranty period. The Agreement covers correction
of errors and implementation of new features which
do not affect the database structure. New features
requiring changes to the database structure are
not covered by the ASMA and will be charged for
according to their complexity.

Scope
A typical project audit includes a review of project
documents and interviews with selected project staff
(sponsors, managers, users and team members) to obtain
feedback on (most of) the following project categories:

- Project sponsorship

- Management capability

- Project scope, plan and schedules

- Milestones and deliverables

- Meeting management

- Project documentation

- Problem and issue resolution

- Risks and risk response planning

- Project communications

- Project management practices

- Business need/functionality

- Technical capability

- Allocation of resources

- Vendor management

- Team members' skills.

Information and communications technology (ICT) social security project management

An accounts receivable system of record
Department of Social Development,
Canada (2004)

The development and implementation of one system of record to manage a variety of accounts receivable was an important priority for a large government department in Canada. A formal independent project review would have predicted a significant risk during the data conversion exercise due to data integrity issues resulting in the additional workload to fix the data after the fact. It took one year to manually fix the data, and this put the new system in jeopardy.

Lessons learned in assessing project progress
Conduct regular reviews throughout the lifecycle

- At the project level, frequent walkthroughs, demos and joint application development reviews are excellent ways to achieve progress, quality and communication

- Code reviews should be conducted

- It is important for a project to have access to senior management review committees where appropriate. These committees need to respect the need of the project for quick turnaround

- Make sure the reviews are in the project plan so that everyone is aware of them and prepared

- Audits should be conducted regularly on large projects and projects where there is significant risk.

Make the process part of the normal routine

- The project sponsor and developer need to be familiar with the purpose and outcomes of independent verification and validation and audit processes and how these processes can contribute to the development process and final result

- By planning reviews in advance, there is less risk that independent verification and validation and audit results will be viewed as negative comments on the conduct of the project

- However, it is important that the organisation be willing to hear 'bad' news as well as good and be ready to take action. In the end, pretending that all things are good will not help the project.

Lessons for start-up project situations
Independent project reviews may be very relevant in developing countries where there may be complex relationship issues to be managed. However, some experiences suggest that there may be difficulties in some regions in obtaining truly impartial advice.

As a general rule when independent assessment is requested, the assessors should be clearly informed that they are formally disqualified from taking over any part of the work they are reviewing. This will increase the transparency of the process.

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ANNEX I Additional details on certain case studies in this manual

Management of expectations

Department of Social Development, Canada, 2004.

The purpose of the project was to allow Canadian employers to submit records of employment through the Web for the calculation of benefits to employment insurance clients using the Government of Canada PKI Infrastructure. The required business functionality involved ePass authentication, single sign-on via secure channel and submitting return on equity (ROE)s using PKI technology to ensure secure transaction delivery services for non-repudiation.

Management of expectations is a key practice in any multi-stakeholder project, since naïveté can be rampant and dangerous at all levels of a project. Most projects start with vision that is not fully understood, but yet the expectations are set from the start. As a minimum, the following is required:

• A statement of expected outcomes that is concise, achievable and measurable

• A common voice/forum to ensure vision is disseminated and kept relevant.

Lessons learned

• Gate expectations based on progress to date at each stage of the project – identify up-front key milestones and the options available

• Ensure that all partners understand and agree to each other's needs and abilities prior to committing to the expectations

• Do not mix research and development with delivery of business solutions in unproven environments

• Production in the test environment must be emulated.

End-users participate in the development
Federal Institute for Salaried Employees, BfA, Germany (2003).

The BfA was running a host-based application that supported over 4,000 inspectors in all parts of the country. Inspectors check whether employers pay the correct contribution for social insurance required by law.

Difficulties with the handling of the old application and the demand for many new functions called for a completely new design. It was decided to adopt a thin client concept: The new application was developed using Oracle Web technology and would allow the inspectors' log in via a browser installed on their notebooks.

Due to the decentralised organisation, the department needs and uses a centralised team for ICT coordination. It handles most of the communication with the ICT department. In the case of this project, however, it became evident from an early stage that things were not running smoothly within this structure.

Accordingly, the project team decided to invite the end users, that is, the inspectors, to participate in the development project. A working group was formed with direct contacts (communication lines) between developers and the 'far away users'. Participation involved frequent travelling on behalf of the members of the ICT project, but the benefits by far outstripped the inconvenience and costs of travel.

Nearly all conceptual issues and implementation problems were explained, discussed and decided within that group, thus ensuring a continuous monitoring of the project.

When the members of the group returned to their daily work and took part in regular local or regional meetings, they spread the news about new functions or decisions about one or another business process. Decisions on priorities (some functions had to be rescheduled for future releases) were made jointly within the group. The working group members' identification with the product increased with the added responsibility; they actually became 'ambassadors' for the new application, and their support meant a multiplication of goodwill in a decentralised work force where communication had been notoriously difficult during earlier projects. Accordingly, implementation became an event the users were looking forward to, whereas previous experiences were generally a cause of considerable concern and complaint.

Network services

National Social Insurance Institute, INPS, Italy (2003)

INPS services are supplied by:

• Peripheral offices

• Web portal (www.inps.it and wai.inps.it for disabled people)

• Call centre (known as 164.64)

• Self-service kiosks

• Online links with brokers and local administrations.

This situation required multi-channel network integration, in terms of:

• Homogeneity: the customer can choose the way to connect to INPS, obtaining the same service level

• Univocity of the response: the customer receives a consistent response irrespective of the channel he/she uses.

To achieve this, the INPS started a process of reviewing all ICT applications in the second half of the 1990s. Up to that time, practically all applications were based on IBM CICS/IMS/OS400 technologies and 3270/5250 user interface.

After the review stage, the most important phases were:

• Re-engineering the user interface of those applications that could provide the most important information about clients (that is, contribution history details, copies of certificates, etc). The new service was supplied first to internal persons (intranet), then to intermediaries and local administrations (Internet) and finally to clients' Internet and self-service kiosks and to call centres

(Note: In this case, re-engineering the user interface to a Web-based user interface permitted reuse of the same application through each channel and univocity of the output and communication.)

• Building new account management systems on open systems (Microsoft/Java 2EE)

• Integration from legacy-based account management systems and open systems-based account management.

Independent testing

Federal Institute for Salaried Employees, BfA, Germany (2003)

In this case study, the role of independent reviewers was helpful in building consensus between the users and the technicians.

In 2001 the BfA finished its new product rvGlobal, which supports all business activities concerning the administration of insurance accounts, rehabilitation and the payment of pensions. It contains considerably enhanced features for users to individually 'customise' their workspace (for example, define their own 'Favourites'). At the same time, it introduced a method of guiding the user through the steps necessary to complete whole business processes – starting a development that will eventually lead to a defined business workflow. Accordingly, not only the GUI (graphical user interface) but the approach to ICT support as a whole changed.

The users' first reactions were mixed and not always encouraging. They missed their old application and looked for 'simple' improvements on the old design – not an entirely new world. When asked, they sometimes searched for excuses to criticise the product without putting their finger on the real problem. It became increasingly difficult to interpret the different reactions to find out what they really meant.

Although the project members were convinced their design was good, they could not ignore the need to have a second opinion to confirm their ideas. They opted for an independent audit about the product's usability. The next step was to find an auditor who offered the services accordingly possessing the necessary certificates for evaluation. The TÜV (Technical Inspection Agency), a leading testing and certification body which originated in performing roadworthiness tests on vehicles and now tests and certifies in many areas, was chosen.

Since the mid-1980s, the TÜV has also provided expert advice on ICT systems with regard to the quality, security and usability of their customers' ICT systems and the related environment – a part of the company that branched out in 1996 as TÜV IT. The TÜV IT put rvGlobal to the test. The product passed and earned itself a certificate in the process (TÜV IT: Certification List).

The merits of charging the TÜV IT with independent testing became apparent almost immediately: apart from the expert advice and evaluation that greatly helped in the further development of rvGlobal, the users accepted the 'verdict'. While not being swayed immediately into enthusiastic support, it was a start. They recognised that the TÜV inspection organisations in Germany act as a guarantor of independent, impartial and expert testing and consultancy.

ANNEX II Members of the Working Group

President:

Rafael Mateos Carrasco
Director General
National Social Security Institute (INSS)
Spain

Members:

Peter Batt
Director, Organisation and Information Technology
Federal Institute for Salaried Employees (BfA)
Germany

Mario Cilla
IT Project Leader
National Social insurance Institute (INPS)
Italy

Francesco Saverio Colasuonno
IT Project Leader
National Social insurance Institute (INPS)
Italy

Francisco Delgado Azuara
Chief, IT Unit
National Social Security Institute (INSS)
Spain

Cor Franke
Executive Vice-President
Central Organisation for Work and Income (CWI)
Netherlands

Veikko Hytönen
Head of Information Systems Department
Social Insurance Institution (KELA)
Finland

François Kientzler
Programme Manager
International Social Security Association (ISSA)
Geneva

Paul Moreau
Director General, Corporate and Labour Systems
Department of Social Development
Canada

Rory O'Shea
Consultant, Global Social Segment
Public Sector Business Consulting Service
IBM
Ireland

Pierre Raynaud
Director, Finances
National Old-Age Insurance Fund for Employees
France

Walter Steeger
Director, Information Technology
Federation of German Pensions Insurance Institutions
(VDR)
Germany