

International Institute
of
Social History

Information Policy Plan 2009-2012



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1. Introduction

1.1. Objective

In IISG's strategy paper for 2007-2010, information and communication technology (ICT) play an important role in achieving the strategic goals. The information policy plan (IPP) presented here formulates the ambitions and underlying policy principles for the digitisation and computerisation of the Institute. It sets out the frameworks for further development of the Institute's information systems, a few of which are now due for replacement. The resulting project programme for 2009-2012 (Annex to the IPP) forms the basis for the ICT investment plan.

1.2. Structure

The following two chapters set out the context in which the information policy is situated. Chapter 2 describes the organisational context and the consequences of the strategy paper of the IISG for the information policy. Chapter 3 describes the context within which the IISG operates and gives an analysis of developments in the field of scientific information that are relevant to the Institute.

Chapter 4 gives an analysis of the current status of digitisation and computerisation at the Institute. It highlights the main issues and opportunities at the moment. The inventory of issues needing special attention was drawn up on the basis of interviews with employees in the organisation. Next, we outline the desirable developments and measures to address the issues and we formulate the corresponding policy starting points.

For the sake of consistency of the policy implementation, the starting points and choices from the previous chapters are summarised in core groups of main policy statements in Chapter 5. These main principles determine the framework of the information policy plan.

Attached is the project programme for 2009-2012, elaborating the specific requirements for the desirable provisions (infrastructures, facilities, etc.) and translating the policy principles into a practical action plan for the next four years. This document will be updated on a regular basis and it comes as a detachable annex to the information policy plan.

During the implementation of the programme, more detailed policy frameworks will be developed on specific aspects (in relation to digitising collections, IPR issues, etc.). These detailed policy frameworks will be additional and complementary to the IPP.

1.3. Conforming to the ICT Register of DEN

The objectives of the IISG, as formulated in this information policy plan, require using standardised technology. Standards and best practices concerning the interoperability for data sharing, open ICT architectures and frameworks, and the preservation of digital information are most relevant in that respect. The IISG wants to achieve its objectives by conforming with standards and *best practices* in the field, in particular with the ICT Register of DEN (Digital Heritage Netherlands)¹.

¹ <http://www.den.nl/english>

2. About the IISG

2.1. Mission

The context of the Institute's activities is defined by its mission statement, laid down by statute since 1935: 'the advancement of knowledge and scientific study of the national and international social history in the broadest sense' by gathering a collection, making it accessible, and by performing or commissioning socio-historical research.

The collection, the research and the scientific services are mutually reinforcing and they make the IISG appealing for its users throughout the world.

2.2. Target group

The primary target group of the IISG are scientific researchers, particularly historians.

2.3. Ambitions for 2007-2010

The IISG performs leading research in the field of 'global labour and economic history'. The intended historical analysis of global developments can be achieved with the help of large quantities of comparable historical data. The latter are called data-hubs or meta-resources. The IISG aims to make it possible for historians throughout the world to participate in the objective of developing such meta-resources by means of web-based facilities enabling them to collaborate with data collection world-wide in an easy manner. These facilities are called e-collaboratories and the data collections are stored in data-hubs. They are dynamic data collections in the sense that they are continuously undergoing further work (through the addition of data, deletion of data, improvement of algorithms for data estimates, data standardisation, etc.). When meta-resources are used for research (analysis, comparison, processing, interpretation, etc.), the actual work is performed on data set versions. Version management and reproducibility are absolutely crucial to the scientific verification process. Meta-resources become more interesting as they get inter-linked and the datasets they disseminate are made comparable for the detection of new correlations. In addition, at the time the meta-resources are opened up and disseminated, it should also be possible to establish useful links to primary and secondary sources (illustrations, archives, scientific publications). In order to achieve all of this, it is necessary to set up a 'global data hubs' infrastructure.

The material collected by the IISG is increasingly produced in electronic form, i.e. born-digital. Internet plays an important role as dissemination channel for this type of material. The IISG aims to limit itself to primary material that is not being collected and kept elsewhere in the context of digital preservation initiatives, such as The Internet Archive and web archiving projects by national libraries. There is also greater focus on non-public information (what happens at Intranet levels, within an organisation). In order to make it possible to collect and store this material, the Institute aims to set up a digital repository with appropriate intake procedures (ingest), storage regimes and conservation strategies: the Trusted Digital Repository (TDR).

The potentially huge quantity of information that reaches the IISG digitally means that an even more conscious approach must be adopted to how the material is to be processed and stored within the limited financial boundaries. On the one hand, the IISG wants to achieve this by increasingly focusing on its own niche and by tying in with related collection-building networks (such as IALHI) in order to contribute to a virtual collection built up jointly (Global Labour History). On the other hand, ICT provides unexplored new opportunities for making digital information more accessible and useable, particularly the new semantic web technologies and the powerful search techniques. For that purpose, the IISG will link up with relevant ICT research networks (such as the OCLC-RLG Research Program and the Dutch CATCH programme).

In addition, storage requirements in the physical stacks (for the storage of paper and other analogue material) will continue to grow at a steady pace (1000 linear meters per year), particularly over the next 15 to 20 years. In some cases, specific parts of the collections will need to be digitised and (physically) disposed of (the AV material, for

example). In that event, it is imperative that the digital substitute can be permanently retained in the TDR as a master-file. In other cases, digitisation will take place in order to increase the accessibility of the collections (see the IISG Digitisation plan).

Numerous employees are due to retire over the next few years. Their (tacit) knowledge of the collection is of great value, though it has not always been adequately recorded. This task is still outstanding. It is anticipated that the deployment of Web 2.0 techniques (including "tagging") will make this task easier and feasible.

So far, cataloguing the collection remained a task limited to experts within the IISG. However, experts outside the Institute and interested persons from the general public increasingly expect to make their own contribution, or to make interactive use of the catalogue and the inventories. This trend will manifest itself through the build-up of communities (e.g. Friends of the IISG) and through new ways to tap into external expertise about the collections via the Web. Flexible ICT is crucial for making the catalogue and collection accessible and more responsive to the requirements of users in the future.

The search behaviour of users is also changing: users no longer visit individual institutional websites that may contain relevant information they are searching for (e.g. 'The IISG'). They increasingly go to aggregated content platforms such as Google and WorldCat. This means that the IISG must be flexible in publishing metadata on the platforms that are most closely associated with the expectations and search behaviour of its target groups.

Through digitisation, differences between processing and managing the various types of material (books, serials, archives, images, sound) are expected to decrease. It should be possible therefore to achieve convergence of the processing activities within the Collections department and the ancillary information resources.

The demand for infrastructure and support by resident organisations of the IISG premises, is also growing. Based on its primary task, i.e. supporting scientists experimenting with new research methods and with new forms of cooperation and communication, the Virtual Knowledge Studio (VKS) must spearhead innovative ICT applications. Since the eighties, the Historical Sample of the Netherlands (HSN) has developed a considerable data collection in the area of historical demography, which now needs to be upgraded to a modern, adequate ICT platform. Finally, the Dutch Press Museum (Persmuseum) has high ambitions in the field of interactive collection presentations and virtual exhibitions.

3. Analysis of the environment

The environment in which the IISG operates and the trends occurring in this environment are analysed in this chapter, in support of the information policy choices the Institute needs to make.

3.1. KNAW

An organisation in close proximity to the IISG is the Royal Netherlands Academy of Arts and Sciences (**KNAW**). Whenever it is feasible or necessary, it is only natural that regular rapport and consultation takes place with this umbrella organisation of the IISG in relation to ICT and scientific information services.

Basic services

According to the KNAW information policy plan for 2007-2010, the large-scale replacement of its ICT infrastructure (for office automation and network) is on the 2007 priority list. In addition the KNAW aims to provide its institutes with full support for office automation, technical systems management, network management, web hosting and database management, desktop support, as well as supply and management of hardware and software. Given the economies of scale within the KNAW (19 institutes), it is anticipated that the provision of central ICT basic services will on balance cost less than if they were provided for locally. It is therefore worthwhile exploring the options for outsourcing the basic services at KNAW level, in the context of IISG's reorientation of its ICT management policy (see 4.1).

Primary processes: core tasks

In addition, the KNAW has developed a number of initiatives for organising central services in relation to the primary processes of the institutes (research, collections and scientific support services):

- 1) agreements with OCLC-PICA (in 2006) for the use of library services, such as Picarta and the shared cataloguing system (GGC). The IISG does not participate in the GGC but it makes use of Picarta and (limited) use of the national union catalogue and interlibrary loan system (NCC-IBL).
- 2) provisions for access to (still very limited) scientific content to employees of the KNAW.
- 3) provision of a repository (e-Prints) for open access to scientific publications of the KNAW institutes. The KNAW is still in the process of developing an open access implementation policy.

The KNAW participates in Dutch academic and cultural heritage consortia such as UKB, SURF and NCDD, and it represents the interests of the KNAW institutes in these forums.

Secondary processes: operational management

Lastly, the KNAW manages the supply and outsourcing of a number of products, systems and services, in relation to human resources, financial and estate management. Furthermore, special emphasis lies on management information, such as the uniform registration of scientific output with the national METIS system. At the moment, KNAW is investigating the introduction of new systems for time tracking, customer relations management (CRM) and for internal and external communication (CMS for intranet and website).

For the institutes that want to make use of these systems, it is important to participate in the KNAW's decision-making bodies. This applies to the IISG, as well.

It is apparent from the KNAW's information policy plan for 2007-2010 that the Academy intends to invest heavily in replacing its ICT infrastructure for central facilities management at the KNAW-Office over the next few years, but also for economies of scale benefitting the KNAW-Institutes. For the IISG, it provides opportunities as well as threats: opportunities to transfer the own ICT basic provisions to the KNAW, and threats due to the increased control and rigidity always associated with centralisation.

3.2. Scientific research

In relation to the information produced by the researchers, the following initiatives are important in the context of this IPP:

- **DANS** (Data Archiving and Networked Services) is a joint venture between the national organisation for scientific research (NWO) and the KNAW. DANS is charged with the nationwide storage and persistent accessibility of research data (datasets) in the alpha and gamma sciences. Submitting data sets to DANS is increasingly enforced in a more structural manner, by making it compulsory in cases when NWO and KNAW research grants are awarded.
- **SURFshare**, resulting from the DARE programme, is an initiative by SURFfoundation. The objective is to build up an infrastructure of academic repositories that serve to increase the online accessibility of the scientific output, particularly articles (Open Access). KNAW participates in these national programmes and it manages NARCIS, the portal for scientific research in the Netherlands. In this context, work is also carried out on developing the DAI (Digital Author Identifier). In addition, experiments are underway with setting up *collaboratories*. The IISG is as closely attuned as possible to the infrastructure in the making and is participating in SURFshare with the HubLab project (online collaboration for worldwide data collection in relation to social and economic history).
- **DRIVER** is a project to achieve the infrastructure of repositories, modelled on DARE, on a European scale. SURF participates in DRIVER. The project is trend-setting in terms of standards and *best practices*, and it plays an influential role in the e-Infrastructures strategy of the European Commission.

The ambitions of the IISG are closely aligned to the aforementioned initiatives. The Institute wants to achieve a global infrastructure of data-hubs and e-collaboratories, and DANS, SURFfoundation and DRIVER are seen as important collaboration partners along the way.

It is nevertheless important to emphasise that developing the required infrastructure is a means rather than an end. For the IISG, building global communities in the Institute's own subject area is a key priority (collaboratories of data gatherers, users of archive collections, researchers of labour studies, etc.). By deploying ICT, these communities can now also function as *virtual* communities and cooperate closely electronically (via portals) as well as physically (via conferences and other meetings), share information and hence operate in a more productive and creative manner. In this context, the IISG aims to collaborate with the **Virtual Knowledge Studio** (VKS), a KNAW institute developing as an expertise centre for *community building* in human sciences. Accommodating the VKS inside the IISG building in 2005 was therefore considered as a catalyst for future cooperation and synergy. In the meanwhile, VKS has been involved in IISG projects such as Global Hubs for Global History, HubLab and with new project requests (HITIME and CLIO-infra).

3.3. Archive

Registers of private archives

There is renewed interest from government archives in keeping private archives, that provide complementary historical evidence for a more comprehensive reflection on society. The **Central Register for Private Archives (CRPA)** of the National Archive and the **Business Archives Register of the NEHA (BARN)** are no longer operational, but such nation-wide overviews have once again become topical and feasible by applying Internet technology.

The IISG, which itself manages considerable quantities of private archives (also from the Netherlands), and which is closely associated to the NEHA (Netherlands Economic Historical Archive) can contribute to the digitisation of nation-wide registers, in cooperation with the National Archive and the NBA. Prime aspects to be considered are the methods and techniques for:

1. the unique identification of a private archive (individual, organisation, company)
2. the (transparent) referral to the digital archive concerned

Government data and HSN

The government, the healthcare sector, the justice department, etc., generate huge quantities of files, documents and data, such as basic registers of people, buildings, addresses, income and wealth, the basic map of the Netherlands, medical files, child files, etc. These sources are increasingly computerised and interlinked: municipal personal records, child files and criminal files are linked to each other and combined in an integrated information chain.

HSN (the Historical Sample of the Netherlands) plays a crucial role to study these types of data in historical perspective, for example on the basis of individual live stories. HSN collects data from registers in Netherlands' archive services. For civil status data since 1811, HSN uses the GENLIAS database, among others. Together with HSN, the IISG aims to upgrade the technical infrastructure of the HSN databases, and to professionalise the service delivery organisation.

EAD descriptions

The IISG is famous for spearheading the application of EAD (Encoded Archival Description) in the Netherlands. The EAD files, which have multiplied and grown in size over time, are published on the IISG website and the full text is searchable, together with the title descriptions of printed matter and descriptions of sound and vision materials, via the IISG Search facility. The integrated search through different types of material and across different types of metadata formats (MARC21 and EAD) makes the IISG once again ground-breaking. Via 'harvesting' techniques (e.g. OAI-PHM) the rich metadata still need to be disseminated in other search environments, such as **WorldCat**, **Europeana (EDL)**, **Labour History Portal**, etc. It is also important to make better use of the EAD descriptions via the web (by means of social tagging), to improve their presentation, and to link them to scanned archive documents.

Metamorfoze

Metamorfoze is a Dutch National Programme for Paper Heritage Preservation, a joint effort between the National Library and the National Archive. The programme is funded by the Ministry of Education, Cultural Affairs and Science. Metamorfoze's conservation techniques were first based on microfilming, but recently it switched to preservation through digitisation. IISG has participated since the beginning in this programme and has realized several conservation projects in the context of: 'Literary collections' and 'Internationally valuable collections'. Among others, the archives for Franc van der Goes, Pieter Jelles Troelstra, SDAP and Max Nettlau have been filmed. At the moment, the Dora Russell archive is being prepared for filming and the IISG will receive digital copies based on the microfilm. The application for preservation by digitisation of the archive of Ferdinand Domela Nieuwenhuis has been approved and will start next year (2009). The IISG will make the digital copies available via the web, and store the master files in its repository. The IISG considers it worthwhile to continue the collaboration with Metamorfoze, since the programme makes financial resources available for the preservation of its collections.

International collaboration

(Commercial) publishers and heritage institutes from various regions all over the world (including the US, the UK, China, India) are approaching the IISG to start digitisation projects or to co-organise (virtual) exhibitions in partnership. New policy must be devised to establish good practices in this area: under what conditions will the IISG enter into such temporary partnerships? What are the IPR issues involved? The IISG wants to formulate starting points, that will serve as guiding principles for any negotiations on agreements with third parties with an interest in digitising parts of the IISG collections and their exploitation. The guiding principles are aimed at maximising the effects of the agreements for the benefit of scientific research in the short and longer terms (see also Digitisation Plan in annex).

3.4. Library world

RLG-OCLC

Since the Institute is participating in RLG-OCLC (Research Libraries Group – Online Computer Library Center), the titles of the IISG catalogue can be found in **WorldCat** and are therefore part of the global library network. A number of technical adjustments are still required to render consultation of the IISG titles via WorldCat fully transparent. The IISG titles have never been incorporated in the national union catalogue (NCC) that forms

the basis for inter-library loans. At the time, it was not considered worth while the effort (to adhere to the PICA cataloguing rules) and the costs of participation in PICA. Because the library of the IISG has the character of a reference library (books and serials cannot as a matter of rule be borrowed), participation in PICA was not considered of strategic importance. On the other hand, however, it is clear that the absence of IISG title information in the national library infrastructure has contributed to the ignorance about the Institute's collections by most of Dutch academia. Since OCLC acquired PICA in 2007, the IISG dilemma of participating in the national library infrastructure may (hopefully) solve itself. The institute's title records being in WorldCat, it should technically, organisationally and financially be feasible now to copy them to the Dutch NCC-system.

For recent monographs (published no longer than 20 years ago), IISG does allow limited borrowing through other libraries. In the context of this loan traffic, the IISG participates in the OCLC Resource Sharing programme.

It is IISG policy to try and improve availability and access by means of increasing digitisation. The reproduction service plays an important role in this respect, by producing scans on request and by supplying them online (within copyright and reproduction rights restrictions). It is envisaged that this service will only increase as more material becomes available online. It is intended not only to deliver reproductions through the Institute's own service desk, but also through online service desks of third parties, where possible.

For the supply of scientific information to the Institute's own researchers and visitors, the IISG currently provides access to **Picarta** and to a very limited number of online databases; the underlying principle being that the Institute does not invest in access to external databases or e-journals for two reasons: 1) its acquisition budget is not sufficient and 2) it is reasonable to expect that the national research infrastructure caters for adequate access. In principle, as (associated) UKB member, the KNAW is responsible for ensuring that scientific researchers associated to the KNAW institutes (therefore also the IISG and VKS) have adequate access. The KNAW intends to investigate this issue.

Memory of the Netherlands

The Memory of the Netherlands is a national programme for digitising the Netherlands' cultural heritage, notably printed matter and still images. The programme wants to digitise the (hidden) print collections of archives, museums and libraries and to make them available on the Internet. The Memory has been set up with support from the Ministry of Education, Cultural Affairs and Science. The programme is coordinated by the National Library of the Netherlands. The national library is responsible for storing the digitised collections and for making them available. The various projects funded under this programme are carried out by the participating cultural heritage institutes.

The IISG was one of the first participants in the programme, with collections such as brochures on the Netherlands' labour movement, photograph collections, political prints and poster collections (only material on the Netherlands). Participation in the Memory of the Netherlands is worthwhile for the IISG because the digitisation is co-financed and the scheme increases accessibility to some parts of the collections. Given the restriction to visual material from the Netherlands and the new priorities set within the programme (i.e. a more infrastructural and supportive role, completion of the Memory website), the IISG will not give top priority to this collaboration over the coming years.

3.5. Image and Sound

Images for the Future/Sound&Vision

The national project 'Images for the Future' was set up to digitise a core collection of audio-visual heritage material of the Netherlands and hence preserve it for the future. The participants are allied in a consortium, consisting of Sound&Vision, the Film museum, the National Archive, the Centrale Discotheek Rotterdam, the Association of Public Libraries and Knowledgeland.

The IISG does not participate in this project, nor does it derive any financial resources from it. It is still under consideration whether participation would be feasible in the near future, maybe in the context of new initiatives from the Netherlands Institute for Sound and Vision (NIBG). The IISG can in any case learn from the expertise built up within the project, picking up as much as possible from the techniques, formats and procedures used. In addition, it may be worth considering whether the audio-visual material digitised by the IISG could be stored in the NIBG database infrastructure (via the ProArchive service).

3.6. Digital longevity

National Coalition for Digital Longevity (NCDD)

The NCDD has made it its goal to guarantee long-term access to digital data in the Netherlands, by setting up an organisational and technical infrastructure, meeting the requirements for digital longevity. The KNAW and DANS have joined the NCDD, whereas the IISG is an indirect member (through the KNAW).

For the IISG, the NCDD forms an important platform for the exchange of information and for cooperation with other Dutch institutions. Whereas the KNAW has direct *formal* representation in the NCDD, the IISG tries to contribute its own expertise through *individual* representation, to contribute its own insights and represent its own interests. As the largest archive in the Netherlands that keeps private archives, the IISG has an interest in drawing attention to the problems associated with private archives, which are essentially different from state archives. This also impacts on the approach to digital longevity. In the case of private archives, it is often the case that persistence 'from the start' (by limiting the capture of digital files to only well-known and documented standards) is simply not feasible. It means that other measures and a different approaches are needed to deal with private archives.

3.7. EU Digital Libraries Initiatives

EDL-net

In the context of the Programme of the European Commission for Digital Libraries, several options exist to participate in and cooperate with the development of digital infrastructures for heritage collections (eContentPlus, IST, etc.) at international level.

The IISG participates in EDL-net, an eContentPlus project. In the context of this initiative, a prototype is built for opening up digital heritage collections at European level (www.Europeana.eu). The IISG aims to contribute to any agreements on interoperability practices as well as apply the agreed standards, methods and techniques within its own information systems.

4. Current situation and future needs

Introduction

Since the seventies, ICT has been considered a strategic factor within the overall IISG management. The ICT facilities therefore constitute a vehicle for realising an important part of the ambitions of the Institute. The active policy implemented in the past means that the IISG disposes of extensive facilities and has spearheaded the digital facilitation of its activities in the heritage sector.

The IISG distinguishes between:

- basic ICT provisions to support activities in general.
- specific provisions to support the primary processes (or core tasks) of the Institute and of its resident organisations.
- provisions for facilities management.

4.1. Basic ICT provisions

The basic ICT provisions can also be described as that part of the technical infrastructure that functions without any 'awareness' of the primary processes. Examples are the workstations, telephone systems, email, servers, storage of data and backup, etc. Those basic provisions are subject to certain quality and usage requirements, such as performance, security level, bandwidth of the network, authorisation, identification and system availability.

Since 2005, the Institute has invested structurally in digital storage, with the acquisition of extensive SAN and NAS facilities and a back-up facility stored at SARA (Computing and Networking Services for the academic sector) but managed by the IISG. In 2006-2007, the Institute carried out a large-scale upgrade ('the large migration') of its office automation and of its system management (virtualisation of the servers). The current basic infrastructure consists of 91 servers (Linux and Windows), the hosting of approximately 40 websites. At the moment, a transition is taking place from one, undivided network environment to a segmented network with Virtual LANs, more suitable to meeting the needs of the various user groups. The project 'Implementation of new web servers and mysql cluster' will be carried out before the end of the year (2008), replacing and improving the infrastructure of all web servers. Another component of the basic infrastructure provisions is the telephone system. It consists of one switchboard, serving a traditional PABX exchange, and a VOIP facility. The PABX part contains analogous, as well as digital and DECT devices.

The aforementioned upgrade, which has been in full swing since 2005, has already been extremely beneficial (modernisation, efficiency, simplification, flexibility, manageability and reliability).

Issues in relation to the current situation

Large-scale investments and increasing ICT management

It was the expectation that through carrying out the large migration of 2007, which involved a heavy investment, the ICT management organisation would become lean and efficient. The expectation has not been fulfilled, because yet a lot more work is required to set the house in order. Furthermore, the IISG has extended its ICT provisions to third parties (associated, resident organisations and external institutions) with the expectation of keeping the ICT management costs low through economies of scale. This does not appear to be feasible with the current pricing policy. The service provision to third parties makes comparatively heavy demands on the available resources (on the technical infrastructure, but also particularly on staff).

Complexity of the management of systems, applications and files

The management of basic ICT provisions still faces a few bottlenecks, and a few additional issues have been added to that. The server environment is still considered as fairly complex. This is partly caused by the broad range of services supported (including to external organisations). A further cause is the nature of the manner in which systems were developed in the past, when tailor-made solutions were created for each and every

demand. The server environment therefore is (still) excessively fragmented, missing any underlying cohesion. The management of the virtualisation layer also imposes new requirements (expertise, capacity management, etc.).

At the application level, functionally comparable software exist next to each other (MS *Word & WordPerfect*, *Endnote & ProCite*), putting an unnecessary load on the administration and support of the software. Lastly, there is no organised documentation about the systems and applications, nor any reliable overview of the structure and content of the files present.

This all means that it is difficult to keep an overview of the overall environment and imposes greater demands on the basic ICT management organisation.

Legacy systems

A number of systems that have been around for some time are now so outdated that they are no longer functioning adequately in the modern post-migration environment. Special measures were required to keep those systems operational, because they cannot be missed and would not be easy to replace. The main ones are the time registration system, the customer relations management system, the library information system and the custom-made system of the Historical Sample of the Netherlands (HSN), which still depends on MS-DOS because of the applications it uses (including Clipper).

Little consistency between information systems

The information systems used by employees for their daily activities were assembled in fairly diverse ways. The 'organic development' in the past plays a role here, too, because various solutions were chosen over time, without much consistency across different parts of the organisation, or without an underlying development plan. For that reason, there is little congruency between the applications and information sources offered inside the Institute, which means that opportunities for convergence cannot be exploited and that some redundant information is retained in a number of places (for example: staff details on Intranet and in the human resources management system). This all leads to little grip on the administrative and information files produced at the Institute.

Standard workplace with limitations

The large migration of 2007 also involved an overall upgrade of the office automation (to MS Office 2007), including a migration from Novell to MS Exchange. A standard workstation has now been introduced, including a new generation of PCs, for the employees of the IISG and the resident organisations, which in principle has made the ICT support task much easier. However, this approach has a few drawbacks. The standard workstation is considered restrictive, particularly for employees who need to be able to download and install software, character sets or plug-ins from the web, in view of the nature of their work as developers, webmasters, cataloguers, etc. Special ad-hoc measures have been taken to counter this effect, but this is overall not a satisfactory solution.

Web-based working environment with restrictions

For remote access to the information systems of the IISG, and for remote work, users or employees rely on standard web browsers as interface, the Internet as a medium for communication, and on standard applications for exchanging and processing information. By opting for Office 2007, the IISG did not choose for an open standard, which has complicated the exchange of information in actual practice. Nor do the information systems of the IISG (website, Intranet, SSL Portal, webmail, Search, etc.) structurally support all de-facto standard browsers (MS Internet Explorer, Mozilla Firefox, Apple Safari, etc.).

Desired outcome

Reorienting the ICT management to the core tasks

The renovation of the basic ICT provisions has not yet been completed, but the IISG policy needs adjustment before it can continue. In addition to further upgrading the system architecture and rationalising the ICT management tasks, it is necessary to make some tough choices and take measures to ensure the restructuring of the ICT management organisation can be effectively completed within the budgetary constraints. The transfer or outsourcing of basic provisions and management tasks, whenever it makes sense and when it can lead to savings, can counteract the growing discrepancy between the ICT management organisation required and the available resources. The services provided to third parties will equally need to be reviewed.

The objective is to concentrate the resources and in-house expertise on the more specialist ICT provisions that are required by the primary processes (the core tasks of the Institute). In order to achieve this, the Institute wants to transfer or outsource the management of the basic ICT services to a professional organisation/shared service centre and scale down the ICT services provided to third parties.

In the context of this policy, the complexity of the management of systems, applications and files will be reduced to manageable proportions through a management plan in association with the multi-year budget. Clear and well-defined organisational agreements will be made about the different ICT management tasks.

Phasing out the legacy systems

The legacy systems must be phased out as soon as possible. This requires a careful approach and planning. Prioritising the systems for which the maintenance contracts are nearing the end is crucially important. For each system, it is necessary to check which functionalities need to be retained, which will require a new technical implementation within the digital infrastructure. They must be included in a development roadmap. The data that have been built up over the years within these systems must be migrated to the data layer in the new environment. All these activities must be incorporated in the phase-out plan to be drawn up for each system. The IISG wants to phase out the legacy systems that are still running in-house, for which it will conduct a prioritisation policy and follow a planned phase-out schedule.

Consistency of the information systems

Future-proof and flexible support for the work processes requires coherent information architecture in line with the organisation of the work processes and with the applications used. It must become possible to use any data entered during a specific work process in other work processes. In the future, the automated working environment of employees must function much more like a coherent system. This objective imposes demands on the technological solutions, but also on the manner in which the work processes and data streams are organised within the Institute. The IISG aims to make the work processes, data streams and ICT facilities part of one integrated organisation.

Own responsibility for the workstation installation

The standard workstation at the IISG meets the most prevalent requirements of the employees. The configuration is fully managed and supported by the ICT management. In contrast to current practice, this configuration should nevertheless be installed on the desktop **with rights** for the user to install software. It means that every employee will be able to install non-standard software, tools and plug-ins that are relevant to his/her work, without the intervention of ICT support. This choice for greater 'freedom' of action for the employees also has consequences. It means that the ICT support organisation does not facilitate any software that does not belong to the standard configuration, and that it will restore the default configuration (i.e. a reinstall) in the event of problems or if any abuse is found. The IISG wants to assign responsibility for the optimal set-up of workstations to the employee and it is creating the necessary preconditions to that effect, without adding to the workload of the ICT support organisation. Employees will be told that they are accountable for their behaviour and that they must observe the workplace etiquette. This falls under their supervisor's responsibility, not that of the ICT department.

Fully browser-based working environment

A number of requirements for the employees' digital working environment are more complex than average. This is related to the international character of the network of researchers, collectors and fellows working with and for the IISG. Apart from a fully functional workstation (at the IISG premises), they also need to be provided with a stable remote access working environment, that can be accessed from anywhere in the world (home office, Internet café or laptop). This starting point implies that the workstation must in principle operate with open standards, to ensure that the formats used are universally recognisable and usable. The information systems of the IISG must also support the most common standard browsers (MS Internet Explorer, Mozilla Firefox, Apple Safari, etc.). The IISG aims to provide a remote browser-based working environment, supporting open standards and working with different common web browsers.

4.2. Research

The historical research carried out by the IISG relates to Global Labour History and Global Economic History. IISG researchers therefore make intense use of resources located all over the world, working closely together with colleagues in all continents.

In its Strategy Paper for 2007-2010, the IISG intends to develop a global research network with a large-scale data-hub infrastructure.

In practice, work is underway on a number of projects to form groups of researchers collaborating on a particular subject. Historical datasets are gathered and exchanged with the help of those researchers. In addition to their standard scientific outputs (publications and conferences), these research projects also contribute by developing meta-resources in their thematic areas.

Issues in relation to the current situation

Differing data-formats, workflows and applications

In the last few years, IISG researchers applied different working methods and techniques (databases and file formats) when starting new data collections. The workflows for data gathering, storage and management, and the manner in which information is made available are not or insufficiently integrated, with many differences in existing practice. From the start, the set-up was strongly determined by the short-term goals of the research projects themselves and much less targeted at data management and service delivery after the duration of the project. The latter also requires an organisational commitment for which the research department of the IISG is equipped. A project subsidised by the KNAW was started at the end of 2007, in order to streamline all data collections and to provide the basis for a data-hub infrastructure and service organisation.

Several research groups are working in 'collaboratories': close collaborative agreements in the field of data collection, mainly for the purpose of harmonising the content of the data. Within the HubLab project, subsidised by SURF, the IISG is building an e-collaboratory environment, with facilities communication and data exchange, which should considerably facilitate and speed up the process of data collection and harmonisation.

Desired outcome

An infrastructure for data hubs

For the development of data-hubs, the IISG wants to set up a stable technical and organisational infrastructure that can be used by research groups in the field (within and outside the IISG) for exchanges, communication, collecting data, publishing project information and results, and for making meta-resources available for further research. The building stones for this environment will be derived from the 'HubLab', 'Global Hubs' and follow-up projects.

The intended technical infrastructure will be embedded in the broader digital infrastructure of the IISG. It will also provide secure long-term storage in durable formats (TDR). As far as access to the public is concerned, we will ensure that data collections can be searched in association with collection-related sources (archives, photos, and other source material from collections from inside and outside the IISG). The IISG is working on the organisation of an infrastructure for global historical data gathering and information exchange by scientists.

4.3. Collections

The IISG acquires and manages large quantities of socio-historical source material in various forms. The institute manages over 3,000 archives, one million publications and almost just as many audio-visual carriers. The quantity of digital and digitised material is rapidly increasing.

In its Strategy paper for 2007 - 2010, the IISG formulated its intentions as follows:

- to make its own collection available in combination with the collections held by sister institutes, via a so-called Global Labour History Portal,
- to improve the web presentation of its own collection (with increased congruency and context),

- to aspire to the status of Trusted Digital Repository (TDR), and to develop an infrastructure to that effect for the long-term storage of digital archive material,
- to examine the feasibility of digitising unique and near-obsolete analogue materials (such as the AV-collection).

Funds have been invested since 2005, on an annual basis, for constructing the digital repository. Lastly, the prospect of making significant progress towards mass digitisation over the next few years has increased. In 2008, preconditions were created for making financial resources available for the digitisation of a considerable proportion of the archive collection, i.e. the *Centrale-collectie*.

Issues in relation to the current situation

Similar work processes, but different systems

The work processes for the entry, description and storage of the materials are very similar for all sorts of material types. Only the procedure for ordering and checking-in publications and subscriptions (library acquisitions) is specific. However, various types of systems and configurations are in use to support the work processes. The increased quantity of digital and digitised material derived from the different work processes puts further pressure on these traditionally arisen discrepancies.

Some processes are not automated

The registration of visitors to the reading room and the loan administration still occur according to a paper system that is cumbersome to maintain, despite the fact that there are so few loans since the IISG is in essence a reference library. The logistics of the physical stacks are also performed entirely manually. Not only do computerised procedures boost the speed of work processes and quality of the related information, but they also generate better and more reliable management information in comparison with the current manual recordkeeping.

Another example is the acquisition procedure of the library department: the librarian is often obliged to copy the details of a book to be ordered from the request of the subject specialist, submitted on a paper form or by email. The exchange of standard data between different departments of the organisation could be much more efficient through automation.

Missing or incomplete information on specific processes

Here are some examples:

- 1) Before reproductions are made, it is verified whether the image has already been digitised. The information therefore needs to be easily available to the reproduction department, as well as the location from where the digital version is available - which is missing at the moment.
- 2) The process to grant permission to consult archival documents is still largely manual because the correct information is sometimes missing or not available in the information systems (still too much knowledge is tacit and unlocked in employees' heads).
- 3) Information available from the subject librarian that may be necessary or useful does not always end up with the cataloguers. This may be substantive or more contextual information, or information about the origin and status of the material (ownership, permissions, etc.). Much of the information transfer between subject librarians and cataloguers still takes place informally: verbally or with the help of paper and email. In some cases, no information is transferred at all.

Redundant information

Information from and about deeds of gifts is stored and added in different systems at several stages, which means that it is no longer clear in which location the information is complete and up-to-date. In addition, the same descriptive information is entered more than once, inconsistently. For example, in the archive department, use is made internally of an own acquisition number and the same archive is registered more than once in different systems.

Unlocked information

Information about the access restrictions in relation to archival material and contact details available of the person whose approval must be sought before the archive can be disclosed, are kept by the public services department. This information is subject to change, for example when people move, or to further agreements imposing new restrictions on disclosure. At the moment, the information is only available in one place, whereas it may also be useful to other departments. Others may also be aware of

changes or additions to the information without this knowledge being recorded in the right place and re-used.

The legacy system is dated

The GEAC library system that forms the basis of the automation within the Collections department has now become very dated (see 4.1 Legacy systems).

Little awareness of changing user behaviour

In general, too much focus still lies on what the IISG itself has to offer on its own website, rather than seeking to tie in with user behaviour on the Internet. What's on offer is therefore limited to the users who explicitly visit the Institute's website. This number is nevertheless considerable thanks to the tight web of hyperlinks leading to and from the IISG. After all, the IISG tops the Google ranking list of Dutch archives. But the potential number of users can still grow much bigger if the Institute makes better use of new web trends and if it starts to manifest itself in the Web 2.0 environment.

Little coherence in the collection presentations

With numerous more or less short presentations and impressions of parts of the collections, descriptions of new acquisitions and virtual exhibitions, IISG's website is very rich in content without presenting a comprehensive tour d'horizon of the full extent, richness, depth and diversity of the collection. The relations with complementary collections of sister institutes world-wide are insufficiently visible. The opportunities for gathering cross-institutional virtual collections would help contextualise the Institute's collections in its international perspective.

Opportunities for advanced discovery techniques

In comparison with most heritage institutes, the IISG profiles itself with very efficient but unorthodox description methods, for example by making 'group descriptions' of book collections instead of producing complete description records at the title level. This approach is based on the pragmatic observation that it is impossible to catalogue the full collection at the item level, piece by piece. Years ago, the IISG chose to make its full collection 'globally' accessible instead of making some parts accessible via in depth descriptions while other parts would not be disclosed at all. The power and features of search engines have increased the chances to find relevant resources on the basis of free text search, making high-maintenance word systems (thesauri) comparatively less interesting. The newest developments in the area of language technology and text mining serve to further increase the chance of finding information and to further reduce the intellectual effort required to make the information available. It is evident that the IISG should continue on the chosen path, and invest further in the application of automated and intelligent discovery methods and techniques.

Care for the digital collections

In the context of collection development, an increasing amount of digital material is coming in, as part of private archives or as free-standing collections (for example a photo reportage of a demonstration). This usually concerns born-digital i.e. original material. In addition, digitisation is on the increase, both as part of the way image and sound material are processed and as a separate (subsidised) activity. All the material must be stored and preserved, which involves facing up to all the challenges associated with digital longevity.

Digitising the collections

The IISG started early with the digitisation of image material, to improve the accessibility. In view of the increased funding options for digitisation, it is important to formulate the Institute's digitisation policy in order to prevent that ad-hoc selections are made from the collections and that ad-hoc technical solutions are applied.

Desired outcome

Chain integration

The IISG aims at stronger integration and automation of the collection processing chain (acquisition, description, storage, retrieval and access), whatever the material types and in conjunction with the corresponding data flows, thereby reducing incomplete, redundant or unlocked information.

Because of the growing digitisation, the different material types (image, text, sound) take on the same (digital) format and it has become consequently easier to process them uniformly. Digitisation may well impose new requirements on the storage, management

and accessibility of the collection, but it also creates opportunities for process integration at the level of cataloguing. For the anticipated chain integration, the Institute will not only involve analogue collections but also digital collections, from the very beginning.

In support of chain integration, a new, process-driven automated working environment is needed that is modular, open and expandable, contrary to the traditional library system, resembling a monolithic black box. Two aspects are important for the gradual construction of this new environment:

- 1) phasing out the obsolete GEAC system
- 2) integrating the TDR environment-under-development.

Being more in tune with user behaviour

Whereas users were expected to come to the information sources in the analogue era (and even in the time of Web 1.0), it is now necessary to ensure that data sources are accessible from the users' location. Internet users make intensive use of search engines such as Google, online encyclopaedia like Wikipedia, audiovisual material exchange sites like YouTube and Flickr. These massively popular sites are also visited by historians, students and members of the general public with an interest in history, - all in all, numerous potential new users of the IISG collections. In addition to these 'general' starting places for information discovery, the large-scale academic search portals play an important role as well, such as WorldCat for library catalogues and ArchiveGrid for archive descriptions. There are also numerous subject-related 'pools' of information.

As a general rule, the more the collections of the IISG are ubiquitous on the web, the more the network effect will contribute to promote awareness and (online) usage of the collections. This entails that the descriptions in the IISG's catalogue must be available via automated procedures (downloadable or harvestable) for re-use through other bibliographical resources and tools on the web.

The information that the IISG has on offer will rarely only be used in the environment of the IISG website. A growing shift is taking place in connection to the sources used, namely from heritage sites to 'social sites' (Flickr, YouTube, etc.). At the latter, users now upload documents they scanned or photographed themselves, creating an autonomous and active user circuit. Data and metadata will be copied to their own working environment and then edited by use of software and applications. The development of user software, (for example Zotero, a bibliographic tool that can be used for free as a browser extension) and of web services (for example, by importing data into Google Maps) takes place at such a high pace that there is little point in trying to compete with it by setting up an 'own' IISG environment for users ('My IISH').

A more useful aspiration would be for the IISG to align with user behaviour by ensuring that information about the collections can be found in the places where users are located and by offering the information in a manner that can be easily adapted for re-use in 'alien' environments. The IISG chooses to invest in the large-scale distribution and dissemination of metadata and content.

Coherent and cross-institutional collection presentations

Digitisation and the web pave the way for fragmentation and disintegration of collections. The IISG feels it is very important to present the collections, as gathered by the Institute, in their original context and to preserve them for the future. It is all about making the logical context and the history of the collection development explicit and visible, thereby revealing a great deal of hidden knowledge about the collections. A practical step in that direction will be taken with the digitisation and presentation of the core IISG collection: the 'Central collection'.

In its own research domain, the IISG aims to bring together the relevant collections together into an authoritative source: The Global Labour History Portal. Digitisation, bringing collection descriptions together by harvesting metadata and making the metadata searchable through a search interface, all play an important role.

The IISG wants to improve the profiling of its collections by means of coherent and connected web presentations and to improve the contextualisation explicitly specifying the internal connections and the relations with external but complementary collections.

Application of advanced discovery and metadata enrichment techniques

Increasing use can be made of digital metadata produced by publishers and by those creating archival records, through re-use of bibliographic records and automated

metadata exchange protocols, etc. Digital metadata can also be produced by use of language technology, and image and voice recognition applied to audiovisual material.

In addition, the network of experts (users and connoisseurs of the collection) being constructed around the information desk (see under 4.4) can also be encouraged to contribute metadata, with the help of *social tagging* facilities. Experts can provide complementary details for visual material (location, names of people, date, event) and improve archive descriptions by adding contextual information.

The IISG will be looking at innovative technologies to obtain enriched metadata from its user base and related metadata producing environments and to generate metadata from its digital collections.

Trusted digital repository

The IISG is working on building an infrastructure that is suitable for the long-term storage and access of digital collections: the 'Trusted Digital Repository' (TDR). The policy principles of the Institute are developed in relation to digital longevity issues: the use of safe storage regimes, the interpretation of the concept 'trusted', the level of compliance with accreditation requirements, etc. The feasibility of agreements with creators of archival records about norms and procedures for depositing digital material also forms an important focus for improvement in this project, particularly in the light of the acquisition of private archives and the rescue function of the IISG. These aspects impose specific requirements on the digital repository, which means that custom-made applications need to be developed for some provisions (particularly INGEST). In general, it is the intention to build the TDR infrastructure as much as possible according to existing norms and best practices, and with existing repository tools. In addition to setting up its own digital repository, the Institute will always continue to look out for opportunities to store certain collections elsewhere, in circumstances when archiving services run by third parties provide cheaper, yet adequate facilities.

The IISG is building the infrastructure and organisation of a *Trusted Digital Repository*, which will contain in-house as well as external facilities.

Digitisation plan

By digitising its collections, the IISG wishes to make them better used, also by promoting knowledge about and use of the collections. The IISG is compiling a Digitisation plan that sets out the policy frameworks and policy principles, which will enable the Institute to make reasoned and consistent choices for the digitisation of its own collections.

4.4. Scientific services

The scientific services provided by the IISG include the provision of communication and information services in relation to research and the collections.

The website of the IISG is the principal platform for providing scientific information and support to the target groups. The website is the extension of the reading room and advanced automation will make it possible to develop this into a full-fledged online service desk.

In addition there are the traditional scientific channels of communication: publication (in particular the *International Review of Social History*) and conferences (particularly the *European Social Science History Conference*). Over the last few years, ICT has had a major impact on the processes for organising and disseminating publications and conferences. Apart from aiding efficiency and shortening the lines of communication, the new digital platforms for scientific communication provide increasing support to *community building*. Think of the composition of a readers' circle, authors, reviewers and editors around a scientific magazine. In addition, researchers increasingly want to make use of digital communication facilities in the context of projects (discussion list, mailing list, a temporary ftp archive for exchanging documents, web pages for disseminating information, etc.). Lastly, the use that researchers make of digital portals to scientific information (catalogues, e-journals, databases) relevant to their subject area is rising. When doing so, they increasingly depend on useful tools to continue processing the information (bibliographical tools, statistical packages, etc.).

Issues in relation to the current situation

Difficult management of the website

The website provides access to a huge range of information. An important function of the website is that it looks after the PR of the Institute: for example, by publishing press releases or the annual report. However, by far the greatest part of the website relates to research and the collections. The website is therefore much more than a PR instrument. To the Institute, it is the main instrument for scientific communication. The web editorial team of the public services department manages the content. The technical environment for the *content management* dates from the website's starting period and it is rather limited. Version management of the information, consistency and coherence of the information structure are particularly problematic.

The website statistics are fragmented (across several web servers) and unreliable, due to technical complications since 2006. The underlying infrastructure of the web servers is currently being renovated (see 4.1), which means that the website statistics will be operational again before the end of 2008.

Limited interactivity of the website

The interactive service provision via the website is still under development. The registration of visitors, requests for material and orders for reproductions take place with the help of paper forms or via email. These are services users by now expects to find online, integrated in a seamless chain from the search to the delivery of information at the desktop.

Opportunities for the improved distribution of electronic publications

The IISG carries journal titles that are authoritative in its own field, such as *International Review of Social History* (IRSH) and the *Tijdschrift voor Sociale en Economische Geschiedenis*, and it distributes newsletters to specific target groups, such as *On the Waterfront* (Friends of the IISG) and *Sosyal Tarih* (Turkish collections). In addition, the IISG also facilitates associated initiatives, such as *LabourAgain* (website in relation to Latin-America) and *Sephis e-Magazine* (South-South comparative historical research).

All these titles are published on the website of the IISG, and the readers' circle is subscribed to the mailing lists. The technology used for organising those mailing lists is imperfect and obsolete.

Nowadays, there are much more advanced techniques and methods to increase the reach of the publications and to organise communications more effectively.

High-maintenance conference software

In its subject area, the IISG plays a prominent role by organising the biannual *European Social Science History Conference* (ESSHC). In addition, the IISG facilitates conferences like the *World Economic History Congress* and *International Congress of Historical Sciences*.

Special software was developed specifically for the ESSHC. The use of the congress database for the ESSHC still relies on interventions and coding by the programmer. Similar facilities need to be implemented for other conferences, such as a module for participant registration. The ESSHC software is continuously adjusted for different purposes. This approach of developing tailor-made applications meets the wishes and needs of the conference organisation, but the approach is quite high-maintenance and requires a fairly large amount of development work.

More in general, it is also the case here that deploying state-of-the art technology (Conference and event management software, web conferencing, etc.) makes it possible to improve and innovate the support given to conferences.

Limited communication facilities for research projects

The electronic communication facilities available to researchers are fairly simple in technical terms (ftp archive, discussion forum, web page, etc.) but not all equally user-friendly. The maintenance of project pages requires that the researcher submits his texts to the IISG webmaster, which causes delays. Furthermore, it begs the question as to whether it is appropriate for the website team to do the editing of the project pages. After all, it imposes an additional burden on the team, whereas project leaders are much better placed to maintain their own pages.

Insufficiently connected to the national research information services

It is fairly often the case that researchers at the IISG use university services via other part-time functions, in order to obtain access to the scientific data they need. This

particularly involves online access to literature in their subject area and digital information sources (e-journals and databases). This is however not the case for all researchers working at the IISG or the visiting fellows. For the IISG, entering into licence agreements with publishers for e-resources is not a financially viable option, since it has a very limited acquisition budget that has remained unchanged for years. KNAW employees (and consequently also IISG employees) can apply for a university library card, but it only grants them onsite access to the University Library facilities, which falls short of their requirement for remote online access. In brief, the access is considered insufficient. It leads to a feeling among IISG staff that the Institute does not provide them with sufficient facilities in this respect.

The same applies to some extent to the use of software tools. It has also been noted that some of the software nevertheless provided by the Institute is insufficiently familiar to the employees and therefore insufficiently used. This is particularly the case with Endnote (a software package for managing bibliographic references).

Desired outcome

New provision for website content management

A new content management environment needs to be set up for the website, and as part of the same effort, the information and navigation structure of the website would benefit from a thorough review.

Services via the web: the electronic service desk (e-desk)

The most urgently required services in the short term are provisions for online reservations and for requesting material, and the online ordering, paying and delivery of reproductions.

Services via the web: the information desk (i-desk)

There is scope for a great deal more relevant and context-sensitive online information to users. The more successful this can be done, the fewer questions the i-desk of the Institute will have to deal with. Then again, it is anticipated that there will nevertheless be a large number of questions of a more complex nature, requiring special expertise. Since the threshold is lower in the digital environment, the influx of questions will grow and the IISG will need to lay down clear boundaries on the range of the professional support it provides.

At the same time, the digital environment also provides unparalleled opportunities for involving experts in the field when answering questions via the i-desk and for building up a network of expertise that can be tapped into.

The IISG still needs to take an important step towards improved online support and the provision of information to its users. In addition, the IISG discerns opportunities for engaging its users and those familiar with its collections in a network of experts that can provide support and share knowledge on a reciprocal basis.

Digital facilities for publications

By using state-of-the-art technology (e-journal management systems, repository software, RSS feeds, etc.), the IISG should be able to take a big step forwards and to set up a simple facility with reasonably limited resources as a distribution channel for its own publications. This facility could also be offered to small and less well-equipped organisations (in the same subject area) which would make it quick and easy for them to launch a newsletter rapidly and easily.

The IISG will arrange a facility for the distribution of digital publications, with the aim of stimulating open, scientific communication in its own subject area. The IISG will do this in close association with publishers involved, such as Sephis and Aksant.

The IISG will distribute the digitised back-issues of the IRSH through this facility, in proper consultation with the publisher Cambridge University Press.

Via the new facility, it will also be possible to automatically distribute article descriptions, tables of content, summaries and book reviews (insofar this is not prohibited by data protection rights) to libraries all over the world, for inclusion in catalogues (particularly in the IISG catalogue). Conference papers that are made digitally available for distribution can also be processed with this facility.

At the moment, it is being investigated whether use can be made in this respect of the EPrints facility of the KNAW.

Online facilities for conferences

The support of the custom-made conference software should be revisited, with a view to provide one standard facility for all conferences facilitated by the IISG.

The review of conference papers is generally held among researchers located throughout Europe and the rest of the world. A discussion list does not suffice, since it would fall short in terms of managing the paper versions and providing adequate administration for the peer-review process.

The IISG will set up a simple and standard yet fully-functioning online facility for conferences, including a registration administration module, a communications facility and a provision for paper submissions and review.

Simple standard collaboratory for projects

For projects, an open collaboratory environment could be arranged with standard functionality, such as the exchange of documents, collaboration on texts, a discussion forum, a calendar, mailing list, publication of web pages, etc.

This collaboratory environment is standard in the sense that it does not require any special developments, contrary to the collaboratory the IISG is developing in the context of the infrastructure for the data hubs (see 4.2). However, the standard environment must be open in the sense that participating researchers throughout the world must be able to use it; the facility is therefore not restricted to internal IISG use.

The IISG will offer a simple and standard collaboratory facility for its own researchers and their project partners.

Improved connectivity to the national research information services

The KNAW has been mentioned before, in connection with the access provision to e-journals and databases (see 3.5). The IISG will contribute to the KNAW study and inventory into the needs of KNAW employees in this respect.

It is also necessary to determine what the precise needs and preferences are of the researchers, in relation to software packages, particularly bibliographic tools, but possibly also in other areas (e.g. statistical analysis, cartographic illustrations, etc.). As far as general tools are concerned that are also used by scientists elsewhere, it is expected that the SURFdiensten or KNAW can provide for them. Concerning needs for very specific tools or functions, not offered at a national level, the IISG will take initiatives for providing these itself.

The IISG endeavours to ensure that the online working environment of its researchers is well connected with the national research infrastructure. The IISG will look at the KNAW in order to achieve this.

4.5. Facilities management

Facilities management is responsible for human resources management, the financial and project administration, PR and communications, office administration and management of the building and premises.

Issues in relation to the current situation

Redundant information

The human resources department is currently using many different types of information systems, in which the same information needs to be entered repeatedly. This is in part also caused by the fact that information must also be entered in central systems of the KNAW, over which the IISG has no say. Furthermore, given the smaller scale and more limited technical resources, solutions were introduced in the past for ad-hoc problems without any consideration to the overall effect they might have.

Some examples will illustrate the state of affairs:

- The library and reproduction department are currently keeping their own accounts for processing orders of books and photocopies respectively. These are then entered manually in the database of the financial department.
- Management information must be produced in several places, by various systems in different formats, and in many cases, numbers are entered and stored in duplicate. For example, the data for the annual report are forwarded across various hierarchic levels, entered manually on every occasion, and each time in a different format.

Legacy systems

Some software applications are at the end of their technical lifetime. The customer relations management system (CRM) for example, did not function any longer after the large migration of 2007. Work has been underway on a provisional solution, which is not working optimally. Other applications (such as PZdatabase and ProTime) are no longer working well either and are due for replacement.

Difficult management of the Intranet

A great deal of diverse information is available on the Intranet. It features manuals, is used for publishing minutes and policy papers and contains staff information. Adjusting information on the Intranet is rather user-unfriendly, therefore employees responsible for the information concerned do not tend to keep it up to date. For some components, the information cannot be adjusted without the involvement of ICT support.

Besides internal dissemination of information, Intranet also offers more functionality: it is the portal to the ICT support desk, the remote desktop, the calendar of activities, the room reservations facility, etc. This functionality is maintained by one of the programmers of the ICT department.

No provisions for project administration

The sheer number and volume of projects carried out by the IISG make that the administration of man hours and expenses becomes increasingly important. It is necessary in order to enable project leaders to obtain a quicker insight into the status of a project, for reports and for auditor's inspections. So far, the project administration differed for each project, as well as in terms of the tools and methods used. More uniformity would be preferable, making projects easier to control and manage.

Desired outcome

Improved exchange of data across systems

The data flows involved in the facilities management must be mapped out, to show what information is shared by which systems. A fully integrated facilities management process is probably not feasible in view of the numerous dependencies on external systems and on the primary processes. Furthermore, facilities management data are generally less standardised, which hampers the automated exchange of information. The IISG may nevertheless endeavour to ensure that data flows between systems are more congruent, making for an easier and more efficient exchange. This nevertheless requires extensive data analysis. Improving the collection of management information is in any event a must.

Phasing out legacy systems

For a number of systems, it is the case that the IISG depends on the KNAW's concern systems. Any phasing out of systems therefore needs to be done in close consultation with the KNAW. The wishes of the IISG also need to be reported on time to the KNAW.

On the wish list of the human resources department is a provision to make available to employees their own digital personnel files. Everyone would consequently be informed about any subjects of interest to their employment. Work contracts, performance reviews, salary statements, pension information and time sheets would hence become digitally available in the personnel file. All employees would have access to their own file. If any information is incorrect, the employee can take the initiative to have the information corrected. Across KNAW, the intention is to move to a self-service portal, as far as personnel management is concerned.

For the time keeping, the KNAW wants to introduce a new time registration system (Time-Tell). IISG will probably want to switch from ProTime to Time-Tell, in close cooperation with KNAW.

The replacement of the CRM system is urgent and in principle, a new provision must satisfy the requirements of various units of the organisation: PR and communication (institutional contacts), the archive department and public services (contact details of those who monitor the disclosure conditions of deeds of gifts, reading room visitors), conference administration (contact details of participants), publications department (authors' administration and network of reviewers), collection development and research (networks of contacts), etc. Furthermore resident organisations like Sephis and the Dutch Press Museum are also active users of the CRM system. It is questionable whether one system will fit all, but it is already clear that the more common relations can be shared, the better.

New provision for the Intranet

The Intranet must be renovated, making it easier for employees to add information and to edit texts (manuals, etc.). It will facilitate internal communication and ensure that the Intranet can be increasingly used in close correlation with the operational processes, instead of adding yet another information system to all the others. The IISG wants to renovate the Intranet and to make it more user-friendly, to ensure that it can continue to function as an important internal communication channel.

Support of the project administration

Departmental heads and project leaders in the organisation must be given provisions to administer personnel allocation, time registration and budgets, to ensure that the data are recorded consistently. It must also be possible to export these data into various formats, suitable for the different calculation systems of the grant givers, and for the KNAW financial project administration system. It is explicitly not the intention that the project administration becomes an end in itself and it must always be proportional to the size of the project and the requirements of the grant giver. For example, the administration of a large EU project will easily require an application in the vein of MS Project, but most of IISG's projects require fairly simple administration. An efficiently set up MS Excel spreadsheet can already be sufficient. It is evidently crucial that the administration becomes more uniform and consistent with the financial administration of the IISG. For the benefit of project administration, the IISG will aim for a more uniform approach, supported by suitable methods and tools for the size of each project.

4.6. Resident organisations

Resident organisations are institutes based in the IISG building, that have more or less their own objective, organisation structure and profile. These are: the Dutch Press Museum, the Historical Sample of the Netherlands (HSN), the Virtual Knowledge Studio (VKS), Publisher Aksant and SEPHIS. The International Information Centre and Archives for the Women's Movement (IIAV) will be moving in at some point in the near future.

The resident organisations all have their own specific ICT issues and requirements for the future, which follow naturally from their own objectives. In addition, they all seek to receive support and services from the IISG at their own level. This paragraph describes the current situation and the desired outcome, insofar they affect the information policy of the IISG.

Current situation

Facilities management

The facilities management of each of the resident organisations is provided by the IISG. It means that in general, the bottlenecks experienced in that respect by the Institute are the same for the resident organisations (see section 4.5).

ICT support

The IISG provides basic ICT services to the resident organisations. In addition, four external organisations also make use of them. The support to external institutions can vary from server hosting and data storage to website management and software development.

Lack of written agreements

The agreements about the type and scope of services provided by the IISG have on the whole only been made verbally in the past. In practice, it meant that neither party was entirely clear about what was expected. In some cases, rates were agreed on an ad-hoc basis, with little relationship to the actual costs.

Heterogeneity

The various institutions supported by IISG are fairly different in nature, both in terms of the organisational link with the Institute as of the options they have at their disposal for hiring facilities and services from third parties, independent from the IISG. For that reason, IISG's authority over the organisation of the services is not univocal.

Desired outcome

Clarity and documentation of agreements

The scope and conditions of ICT support in relation to resident organisations must be demarcated more clearly, and recorded in writing, together with any other agreements made in connection with service provision. Not only does it enable both parties to explicitly state their expectations, but it also allows for a more business-like approach of this service, reducing the scope for disagreement or conflict. The IISG aims for clear agreements with the institutes it is supporting.

Review of charges and catalogue of services

The charges for resident organisations must be reviewed, on the basis of the actual costs. This provides more clarity about the way the charges are structured. Next, charges must be reviewed on an annual basis, which means the charges will keep pace with the real costs.

Reduction in the range of services

In principle, the IISG should not aspire to providing additional or other services to those the Institute offers its own employees. Adhering to that principle will make it easier to control the cost of the services delivered.

Cutting down services provided to external institutes

The service policy conducted by the IISG in relation to external institutes (currently the Huygens Institute, ReclameArsenaal, etc.) must be reviewed. It is extremely doubtful whether the IISG is capable of continuing to deliver ICT services in a satisfactory manner to third parties within the budgetary constraints. Economies of scale may be feasible by adjusting (increasing) the rates, but scaling up services also implies a more hefty ICT management organisation - which is at odds with previous policy principles (see 4.1).

5. Policy principles

Technological developments in the digital world are occurring in quick succession; even the insights into potential solutions are subject to rapid changes. In the context of the information policy plan, it is therefore important to set out a number of basic principles for the technological basis of the optimal working environment. They can then serve as a guide for the practical implementation of information systems and of facilities for the working environment.

Based on the analysis carried out in the previous chapter and the inventory of desired outcomes, it becomes possible to determine a policy framework. This framework consists of five main policy principles, which will promote the consistency of policy implementation and steer the technological implementation of the facilities that need to be developed.

U1. Coherent design of systems

- Consideration: For the user, coherent design of systems means that the environment is experienced as one integral whole, regardless of the technological solutions implemented. For the data organisation, it means that data and documents are only stored in one place and that they are accessible for processing at different stages and from different applications.
- Practical implementation:
- **Browser-based working environment:** The use of browser-based working environments enables the working environment to be experienced as much more as one integral whole, regardless of the technological solutions implemented. For the data organisation, it means that data and documents are only stored in one place and that they are accessible for processing at different stages and from different applications. This is a prerequisite for the implementation of a browser-based working environment. The working environment must be browser-based, providing a uniform and ubiquitous user interface.
 - **Process-oriented working environment:** the working environment of employees must be set up on the basis of the work processes to be performed. Mapping out the work processes involved will provide an insight into which data are produced, processed and used, in which stages. It will also make clear which provisions are required to support the work processes.
 - **Generic solutions:** although very specific provisions may be required for the support of specialised activities within a work process, general approaches and generic solutions will often be adequate. With generic solutions, similar solutions are offered for similar problems. Not only does it mean that applications can be deployed more efficiently, it also makes the maintenance less complex and time-consuming.

U2. Manageability

- Consideration: The technical support of systems (technical management and application management) is a task requiring structural resources. This task has expanded significantly over the last few years. Both the volume and structural nature of the ICT management organisation are at odds with the budget. The Institute must commit the limited resources as efficiently as possible, and restructure systems management as efficiently as possible.
- Practical implementation:
- **Reducing the diversity in applications:** this will serve to reduce the number of systems and applications and simplify support and systems management.
 - **Return to the core tasks:** over time, various systems from external organisations were brought into the IISG environment, each with

their own specific requirements for ICT management intervention. By defining again what can and what cannot be supported, the environment will once again become easier to handle and the pressure on systems management will be reduced.

- Outsourcing the ICT management organisation: Transfer or outsourcing of the basic ICT provisions (office automation and systems management tasks), where it makes sense and where savings can be made, will counter the growing discrepancy between the required and the available resources.
- Responsibility with the user: many management tasks arise because of the security level, enforcing many interventions and communication on user preferences with the ICT department. Giving users more freedom (and hence more responsibility) over their own work environment and choosing an environment that users can adapt to their own preferences, will reduce the pressure on ICT management.

U3. Open Architecture

Consideration: An open architecture enables more flexibility of the ICT infrastructure and it reinforces the correlation and interoperability of technical solutions. By limiting the choice of technological components to a number of proven open standards and *open source* solutions, it becomes possible to invest effectively in expertise and knowledge development within the ICT department.

Practical implementation:

- Open source based development means applying and sharing freely available source code. It adds to a much more flexible deployment of this type of software than the 'closed' version, which is mostly commercial software, with restrictive licences and *vendor lock-in* implications. Open source development is only interesting when economies of scale can be achieved, i.e. when a given open source application has a large community of developers and users, making it possible to share the costs of development and software testing. As a policy principle, IISG is basing its developments as much as possible on open source coding. The main application areas for open source platforms that are of interest for the IISG are: content management systems (CMS), portals, collaboratories, indexing and search, library systems, etc.
- Web standards: the development of web applications also necessitates a choice of languages (database query language, programming language, etc.) and standards especially designed for web development. The starting point is that development at the IISG is aimed at open source web application techniques, such as:
 - ✓ PHP as a scripting language for making dynamic web pages.
 - ✓ JAVA as programming language to build web services (applets, servlets, portlets, etc.).
 - ✓ AJAX for dynamic content updates in web pages.
 - ✓ XML as the layout language of most web-based services and the preferred exchange format of an increasing number of information systems. In addition, it is platform-independent and (partly precisely for that reason) eminently suitable for long-term data storage.
 - ✓ MySQL as the database management system (RDBMS) that is most used for web applications - often in combination with PHP and Ruby on Rails. Many data within the IISG are located in an SQL environment, either in MySQL or in the *proprietary* MS-SQL.In practice, the development environment of the IISG applies the

aforementioned web standards, but it was never explicitly formulated before as a strategic policy, nor has the preference for open source code development be made explicit either. This policy decision obviously has consequences for the working methods and the organisation of the development environment.

- Open standards: it is important to ensure that there are as few dependencies as possible between various software components working together, and between different information systems that communicate with each other. Only then is it possible to guarantee interoperability, platform independence and supplier independence in the long term. Using open standards plays a key role in this respect. It enhances the exchangeability of data and makes them more easily accessible. The starting point for the IISG is to make as much as possible use of open standards for the exchange of data within the heritage sector and the research world, such as:
 - ✓ SRU and OAI-PMH for the exchange of metadata;
 - ✓ *UNICODE* for the exchange of character set information;
 - ✓ *OpenURL* for linking to content elsewhere.
- 3-Tier architecture: the process-oriented working environment of the employees and the information systems they work with and that are made available to end users must have a modular, open and expandable construction. The starting point is that the underlying software architecture consists of a data layer, an application layer and a presentation layer, i.e. the so-called three-tier architecture.

U4. The focus is on the user

Consideration: ICT is explicitly used as a means to achieve IISG's strategic objectives and to support IISG's activities. Yet, whatever the advantages ICT can bring, the activities are primarily centered on human work: the employees and their work processes, the users and their user behaviour. For that reason, the needs of employees and users are considered to be key. This is nevertheless a meaningless statement if it is not actually followed up. How will users be included in the application of ICT and what can they reasonably expect?

Practical implementation:

- Development versus management: ICT development takes place at the initiative of the IISG organisation (management, departments, researchers) and always in the context of a project (see Project organisation within the IISG, July 2008). Other ICT-related activities (application management, systems management, support) fall under the ICT department's regular service delivery.
- Demand versus technology: ICT development is initiated either from the demand side (for example, a reoccurring demand that is not met by the standard support service) and from observed user behaviour (use cases), or from the technology side (by applying new methods and techniques). In the first instance (user-driven), it is important that the demand and behaviour are adequately converted into a technical concept or specification; in the second case (technology-driven), it is important to explain the new features offered by the technology in a comprehensible manner to the users, prompting them to support the innovation and to adopt the technology.
- Appropriate demands: user demands must fit within the ICT architecture of the IISG (see U3), for the sake of manageability (U2) and coherence of the systems (U1). User demands should fit in the IPP framework. User needs that cannot be fitted in are

accommodated as well as possible in other contexts (KNAW, SURF, etc.).

- *Communication*: in any case, clear interaction between roles (employees, users, developers) and levels (the work floor and the management) is important. Organisational aspects are important in this respect (forms of consultation, decision making, procedures, etc.) but also more cultural aspects, such as nurturing an open and unprejudiced solution-oriented and result-oriented approach to work.

U5. Innovative deployment of ICT

Consideration: In several respects, the IISG pioneered ground-breaking methods and techniques (image bank, EAD descriptions, etc.). The innovation of methods and techniques is crucial to research and collections, in which the deployment of ICT plays a central role. The support of the primary processes is closely geared to new requirements and technological possibilities.

Practical implementation: *Switch to the Web 2.0 environment*: Web 2.0 inverses the flow of digital information. Information is no longer offered from the institute's website, but from the user's location. Users increasingly re-use existing content and generate their own content on the web. Friends or colleagues add to each other's content and together they form communities of interest. Anyone is able to watch and to comment. In this way, an information source of public interest is generated by the public itself.

In order to achieve the strategic objectives of the IISG, it is necessary to switch to the Web 2.0 environment, not 'simply' by applying some of its techniques, but by implementing a whole suite of changes: from a different approach to the users and a different perspective on the content, to switching to other software development methods. Participating and sharing (at global level) play a central role in this respect: participating in a joint effort (to build up knowledge or to develop software) and sharing knowledge, content and software.
