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REPORT ON MISSION TO THE QATAR GENERAL PETROLEUM CORPORATION (QGPC) CENTRAL LIBRARY

24 – 28 June 2000

UPGRADING INFORMATION SERVICES

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Note: The views expressed in this report are those of the author and do not necessarily represent the views of the Economic and Social Commission for Western Asia.

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1. INTRODUCTION

This mission is carried out at the request of Qatar General Petroleum Corporation (QGPC), Doha, Qatar for the period 24 to 28 June 2000. The mission's objective was to assess the existing information services of QGPC's Central Library and to formulate directions and a plan for upgrading these services, taking advantage of the corporate networking facilities and existing hardware and software.

The mission was a joint effort of the Regional Advisor for Communications and Computer networking and ESCWA's Librarian. Both would like to acknowledge the help they received from the QGPC staff. In particular, the efforts that were undertaken by QGPC Corporate Training staff in organizing the mission's timetable and their participations in the meetings and interviews that were conducted in the context of the mission.

Appendix (A) shows the mission's agenda. Appendix (B) lists the names of officials met or interviewed in the context of the mission. Appendix (C) is the list of reference documents that were used in formulating the conclusions and recommendations of this report.

2. TERMS OF REFERENCE

The request received from QGPC on 7 May 2000 by ESCWA expressed its desire for technical assistance for the purpose of upgrading the services of the Central Library. The Central Library is part of Corporate Training, and thus closely related to QGPC's training and technical education. QGPC also stated its intention for the implementation of an automated library system, including the possibility of connecting the library to selected libraries in Qatar, such as Qatar University, the Gulf Organization for Industrial Consulting (GOIC), the British Council, etc. Information services to QGPC staff in operation areas away from Doha should be investigated and recommendations for implementing such services should be proposed.

The existing internal facilities and procedures of the library are to be reviewed and, where possible, improvements should be suggested.

3. QGPC PROFILE:

QGPC is a state-owned corporation established in 1974 to be responsible for all phases of the oil and gas industry in Qatar and abroad.

QGPC principal activities cover exploration, production and sale of crude oil, natural gas and gas liquids, refined products, petrochemicals, fertilizers and liquefied natural gas.

The operations and activities of QGPC are installed at various locations that include Doha, Dukhan, Mesaieed and Ras Laffan industrial cities, as well as offshore

areas like Halul Island and various production stations and drilling platforms in the offshore oil fields and the North Gas Field.

A Board of Directors headed by a Chairman manages QGPC. A detailed organization chart is outlined in [1]. Figure (1) shows a summary high-level organizational structure of QGPC. QGPC. QGPC's capital is QR 5 bn (US$ 1.37bn). It employs around 4000 persons.

4. QGPC's CORPORATE TRAINING

The development of indigenous human resources for the oil industry has been one of QGPC main goals. This has been reflected in the emphasis given to the training and educational requirements of professionals that work with QGPC, or those trainees that are recruited for vocational training. The CT five-year plan aims at attracting and training about 105 nationals per year to occupy middle technical and clerical jobs focusing on the following:

- Training secondary school graduates
- Training employee-level staff and workers to enhance and develop their performance as part of their career development
- Arranging English language courses at all levels

CT is also responsible for administrative and professional training through:

- In-house short-term courses aiming at improving employees' performance to enable them to assume higher positions. There are more than 190 courses that focus on technical or supervisory aspects of work
- Long and short-term overseas courses for topics that cannot be covered in-house or within Qatar. Short courses are normally less than 6 months.

Figure (2) shows CT organizational structure

5. QGPC CENTRAL LIBRARY (CL)

QGPC Central Library is part of CT. It is considered a specialized library for the petroleum sector. The present acquisition consists of 13000 books, 30% of which are Arabic, 52 periodicals, 15 newspapers, 1200 videocassettes, 133 audiocassettes and 60 CD-ROMs. Subject areas include management, psychology, computers, engineering and education.

The library has about 3200 registered members among QGPC staff and trainees. The library is visited by about 2000 members every month and is presently run by 4 staff members, one of them is on a long study leave.

The library has, at present, one Internet workstation and a multimedia room. It has interlibrary loan arrangements with few local libraries, including University of Qatar Library and GOIC's library.

The library has DOS-based library software that has been running since 1996. QGPC's Information and Computer Services Department (ICS) developed the software in-house. The library also maintains a conventional cardex system. The DOS-based software used has relatively limited functions, but it has managed to meet basic requirements for library search and tracking borrowed books.

The aim of the QGPC library is to provide information support for teaching and research, to ensure that books, periodicals, electronic information and other resources are available to all users. To reach this goal, there is a need for a library system that integrates all functions including posting of library catalogue on the Internet and there is also a need for co-operation with other libraries such as, Qatar University and GOIC to borrow books and request online searches for articles.
Collection can include permanent documents as well as transients that can be discarded after a period of time. Existing arrangements and resources can be modified to include informal information that will be available with new technical solutions such as CDs and Internet databases. Internal documents of the organization should be indexed, classified and, perhaps, scanned for retrieval in full text electronically.

Organizational and users needs should be assessed and evaluated to determine type of materials to be purchased. It is the users of the collection who determine whether materials will continue to be available and accessible. Subject specialists in the organization can provide the library with a bibliography of materials that should be purchased to strengthen library collection. Catalogues received from publishers can be circulated among heads of sections and returned to the library with titles marked for purchase. Library of Congress can be checked regularly for books under specific subjects and if necessary can be purchased from publisher. Also library of Congress Subject Headings can be checked for subject related fields especially in petroleum and engineering. For example, one can find: (Petroleum, Biodegradation, Geology, Microbiology, Offshore storage, Physiological effect, Pipe lines, Refining, Petroleum engineering, Petroleum industry and trade, Safety measure, Petroleum Law and legislation, Petroleum mining, Petroleum products, Petroleum refineries, Petroleum waste, Petroleum workers etc.) University of Texas can be checked for information resources on Petroleum at
http://www.pe.utexas.edu/Dept/Reading/petroleum.html

Collection:

General Periodicals: Staff of *Joint* ventures should contribute to building titles of collection according to their needs. Online subscription to journals should be purchased whenever it is possible instead of hard copy and a CDROM or printed archive be maintained for important titles. A list of journals should be posted on library web page.

Reference Collection. Collection should include major scientific reference works and reference works in non-scientific subjects, directories, dictionaries, and encyclopedias.

General Book Collection: Titles in subjects of interest to all staff, student reading materials including multiple copies of each textbook, and other general subjects

Specialist Collection. Combines books, periodicals, and others in the fields of Management, Computing, Psychology, science and technology.

Audiovisual Collection. CDs, Cassettes, Videos and others for loan and for use in the library. Computers, TVs and earphones should be provided in the Multi-Media room.

Restricted Loan Collection: Items in heavy demand, or requiring special attention, such as internal reports, should be limited to certain groups of users.

Electronic Library Resources: The policy of the library should encourage migration into networked electronic resources; this includes online subscriptions to journals, encyclopedias, directories, electronic books and other useful databases. CDROMS can be proposed for networking, electronic publications should be publicized along with Internet access on four computers in the library. List of periodicals and a list of new books should be posted on library web page. Library email address should be visible for easy contact with library staff that will reply to Internet queries and send requested books and information packages to staff in other locations.

Archives. The Archives reflect the historical development and changes in the organization. Archives hold papers, photographs of individuals, buildings, departmental projects, videos of television programs featuring staff and students, annual reports, studies, papers of ex-member of staff, newsletters and maps.

Digital Library. It should be developed and posted on the Internet web page of the library. Main subjects of the library collection can be used as subject headings and the Internet can be searched using *www.altavista.com* or *www.searchalot.com* to find Internet sites that can be included. As an example, under Petroleum one can list following web sites:

Petroleum Web sites

Energy Information Administration
http://www.eia.doe.gov/

Internet Resources (universities, research, geological surveys, societies & companies, suppliers, stocks, newsgroups, libraries & journals, directories)
http://www.dpr.csiro.au/faq.html

Kuwait University (engineering library)
http://kuc01.kuniv.edu.kw/~libeng/INTSUB.HTM

Institute of Petroleum
http://www.petroleum.co.uk/others.htm

Geology Web sites

U.S. Geological Survey
http://www.usgs.gov/

Arab World Web sites

Arab League
http://192.203.180.62/mlas/al1.html

Arab Trade Online
http://www.arabtrade.org/

Middle East Institute
http://www.mideasti.org/

Resources in Middle East Studies
http://www-lib.haifa.ac.il/www/subj/mideast/mideast.html

The Bulletin of Regional Cooperation in the Middle East
http://www.sfcg.org/bulletin.htm

Education Web sites

United Nations Educational, Scientific and Cultural Organization (UNESCO)
http://www.unesco.org/

Electronic Publications Web sites

Articles on Line (University of Alberta)
http://www.library.ualberta.ca/library_html/articlesonline.html

Science and Technology Related Electronic Journals
http://ej.library.ualberta.ca/eJournals.cfm?DEPT_ID=1&LimitTo=J

Energy Web sites

Northern Territory Department of Mines and Energy
http://www.dme.nt.gov.au/
World Energy Council
http://www.worldenergy.org/wec-geis/

Libraries Web sites

Library of Congress
http://www.loc.gov/

University of Alberta Library
http://www.library.ualberta.ca/library_html/libraries/science.html

United Nations web sites

UNESCWA
http://www.escwa.org.lb/

United Nations Links
http://www.unsystem.org/

United Nations Convention to Combat Desertification (UNCCD)
http://www.unccd.ch/

United Nations Development Programme (UNDP)
http://www.undp.org/

United Nations Environment Programme (UNEP)
http://www.unep.org/

United Nations Framework Convention on Climate Change (UNFCCC)
http://www.unfccc.org/

United Nations Industrial Development Organization (UNIDO)
http://www.unido.org/

International Atomic Energy Agency
http://www.iaea.int/

Disposals.

Disposal criteria of library materials should include:
Use of items
Are multiple copies still needed?
Coverage of subjects: if item is withdrawn should another be purchased on the same topic!
Date and outdated books
Withdrawn books can be sent to another library.
Videos not used can be wiped and reused.

Maintenance of library collection is critical to the usefulness and viability of library as a service provider. Books and journals that are old or not used should be weeded out of the collection, this can be done by circulating a list of journals to heads of sections and requesting that they check titles that need to be cancelled. Also heads of sections can be invited to verify library collection in a specific subject area in order to get rid of books that are outdated and not useful. Older material is retained and systematically preserved to serve the needs of historical research.

Library System

The present library system provides adequate access to the collection from limited access points, which does not include a focused approach that will narrow search to the exact information needed.

QGPC library should be looking for a window based library management integrated system that is bilingual; Arabic-English, and has quick, consistent and reliable response time. It must include the following modules: on-line Public Access Catalogue and Web version, Cataloguing, Acquisition, Serials, Circulation and be able to generate reports.

The selected vendor should solely be responsible for completing the project, including: installation, training of staff, data conversion, customization if necessary, and bar coding of catalogue records. It is preferable that library system bought be supported by Oracle, which is already available at QGPC.

An Integrated Management Library System

An integrated library system should facilitate access to the collection and should include:

- Bilingual Library management integrated system (English – Arabic) that consists of five modules: cataloguing, acquisition, serials, OPAC/Web & management/reporting.

- A fully automated indexing and retrieval facility

- A web module of a bilingual library catalogue to facilitate browsing by users from other locations.

- Boolean search using and, or, and not a communication facility with library to reserve a book, borrow and demand information.

- An area on the web page of the library to survey user needs and suggestions in order to maximize usability of the collection.

- System must have a proven record of performance on an international level.

- Vendor is responsible for managing project from a to z with cooperation from library and EDP.

- Project shall be completed within one month then vendor will implement customization and improvements without any additional cost to the organization within three months from initial completion of project.

- First year is maintenance free for library system and then it is optional for library to pay 10% annual maintenance and updates.

- Vendor to provide help desk 09:00 am - 17:00 PM and to send qualified personnel within 24 hours from receiving call.

- Vendor's license will accommodates five concurrent library users for every module.

- Vendor to convert data for library holdings in English and in Arabic.

- Vendor is responsible for bar coding all records in the system and library staffs will bar code actual books.

- Vendor to provide bar coding stick, machine for printing labels and stickers.

- Vendor to provide hard copies of training manuals.

- System shall allow for unlimited number of records and with an acceptable speed of retrieval.

- Web enabled in Arabic/English
- Designed and built within the standards set out for ISO9001
- State of the art information management system.
- Supports library standards such as MARC, Z39.50 and ISO ILL protocols
- Normalization: users can define their own criteria in different languages, i.e. In Arabic: users can decide which characters to be ignored when searching, e.g. hamza, Alef hamza, etc.
- Free training to be provided by vendor to Library staff & IT
- Speedy retrieval of information
- The Source Company and local vendor are responsible for conditions set in contract.

Cataloguing

Multimedia cataloguing facilities
End user can configure cataloguing screens
MARC import/export
Authority control
Cross-references
Analytical cataloguing
Thesaurus can be down loaded into system
Spelling check

OPAC (On Line Public Access Catalogue)

Implicit Boolean logic
Windows and Web options
Automatic truncation
Management of common misspellings
Integration of local and global resources
Saved searches and folders
Printing options
Real time fast retrieval

Circulation

Single transaction screen

Quick catalogue at issue facility
Hyper text links to related functions
Full loan control matrix
Reservations
Fines and Charging
Overdue notices can be sent easily to borrowers
Borrowers list is generated easily.

Acquisition

Single transaction screen
Claims and cancellations
Invoicing
Supplier authorities

Funds and spending control
Security control
Foreign currency
Ordering facility

Serials

Subscription control
Fast issue receipt
Holding summary
Circulation lists
Abstracting & indexing of articles in Arabic & in English
Integration with funds and accounting
Claims & cancellations
Routing

Reporting

Pre-defined reports
In-built ad hoc reporting utilities
Integration with MS Access & Word

System Configuration

- The configuration of the system is the responsibility of the vendor:

Hardware, software, installation, training, bibliographic records conversion, hardware and software maintenance, and ongoing software support necessary for operation. Costs for all components of the system are to be quoted by the vendor and should be itemized.

Client platforms include Microsoft Windows, Windows NT, and Novell workstation. The library system's server may use Oracle or Microsoft SQL (Standard Query Language) server as its database management system. Both can run under various operating systems, such as UNIX, Windows NT, Novell and others.

Hardware

Workstation Hardware:

CPU - processor type: Pentium or faster
RAM - 64 Megabytes of RAM or more
Network Interface Card which must satisfy compatibility requirement:
Must be compatible with type of network wiring, with I/O bus in the workstation and with network operating system.
Server Hardware & Software: server of Pentium PC requires an operating system that is NetWare, or Windows NT or others.
Network Operating System for the server must allow for communication between the server and workstations.

The system cost should be quoted from multiple sources. The library system should be adaptive to a wide variety of hardware platforms and operating systems and should operate with many servers including: Microsoft Windows NT, Novell NetWare, etc.

Standards

- The library system should be an open system that supports industry standards with its graphical and character-based user interfaces that are compliant with industry standards like TCP/IP, Novell/IPX and
- Z39.50.
  Z39.50 standard is supported by many library systems that allow users to search other Z39.50 databases directly from their own OPAC interface.

- The system shall support implementation of all currently published USMARC formats.

- The library system should have a powerful hypertext linking capabilities that will allow connection to interfaces for non-Z39.50

compliant library systems.

- The system should support electronic mail facilities.

- The library system should include the following technical service modules: OPAC, Cataloguing, Circulation, Serials, Acquisitions, and Web module for the catalog. (ILL should be optional depending on library).

Printers and Scanners

- Non-impact image printers would be preferable if costs are approximately comparable and the printer satisfies the operational requirements of the system.
- Printers should be connectable with all terminals.
- Printers can print screens images, page slips, and book lists for patrons, or can be used for other uses.
- The vendor should be able to provide both hand-held (wand) and stationary scanners capable of reading barcodes, and magnetic strip encoding.

Terminals and Workstations

- A description should be provided on how a library system can support terminals, proprietary workstation software, the required platform, the method of connection to the system, and the intended use (e.g., general patron access, staff, circulation back up, scholars workstation, etc.)
- Laser scanners and light pens
- Z39.50 development tool kit.
- The vendor should provide an annual maintenance contract for service on a daily basis from ----- to -----. Technical support should be available by telephone during these hours.
- The vendor should provide online diagnosis of software problems and should be able to dial the CPUs of the system directly.
- The vendor should provide diagnostic maintenance within two hours during hours for which service has been contracted for the system.
- The vendor should provide on-site maintenance within four hours during the hours for which services has been contracted for the system.
- The vendor should provide ongoing software maintenance that should include all software enhancements offered as part of the standard system to future prospective customers.

System Startup, Operation, Backup, and Recovery

- The system should have an automatic facility to start and stop the online system at specified times.
- The system should not require daily outages to perform backups, rebuild indexes, load records, etc.
- The system should be capable of operating 24 hours a day for extended periods to provide maximum system availability.
- The system should protect against data loss during unexpected downtimes. Systems disruptions should result in loss only of data in transactions underway at the time of the disruption.
- The system should recover from any downtime without requiring a terminal-by-terminal log on.

Security

- Security is needed to provide protection against unauthorized modification or access to data elements, and to assure the confidentiality of personal information. In general, security should be provided by passwords for authorized personnel and by restriction of certain functions to specify terminal locations.
- The system should provide a password security option.
- Passwords entered should not be displayed on the screen.
- The system should provide for certain specified functions to be available only from certain terminals.
- The system should permit access to be defined by user, terminal, location of terminal, command or function, databases, and data elements.
- The system should allow authorized staff to logon to use any staff functions for which they are authorized.
- The system should prevent unauthorized access to any system function.

- Audit trail records should identify: Person effecting transaction, command or function performed or attempted, date, time, transaction data and terminal used.
- The system should support password authorization by detailed functional level within a subsystem such as order entry, order update and authorization.
- The system should permit control of data entry, update and conversion by access level password.
- The system should control updates via access control and conditions prevailing at time of the attempt, e.g., record in use.
- The system should support the override of all automatic features and default limits.

- The system should provide note fields for reason for override, date, time, operator and terminal.
- The system should control all overrides by access level.
- The system should monitor and report all override activity.
- The system should create a transaction history with the capability to produce statistics on database maintenance, inquiry, acquisitions, and circulation activity for the central system and each of the local systems.
- The system should maintain a transaction log of all activities for each terminal.
- The system should log all security violation attempts or password failures and should make them available to authorized staff.
- The system should be installed so that any existing electronic security system does not interfere with its operation.

Performance and Response Time

- Response time is defined as the total amount of time between a "Send" command (pressing of a key to initiate the input to the computer) and the completed display of the response on the screen.
- Charge, renewal, and discharge commands performed during peak hours should have an average response time of 1 second or less and should have a response time during peak hours of less than 5 seconds 99% of the time.
- Serials check-ins during peak hours should have an average response time of 3 seconds or less and should have a response time of less than 6 seconds 99% of the time.
- Non-Boolean public access catalog searches during peak hour should have an average response time of 2 seconds or less and should be less than 10 seconds 98% of the time.
- Boolean searches during peak hour should have an average response time of no more than 6 seconds, except one additional second can be allowed for each 2,000 matching records.
- Input and update functions during peak hour should have an average response time of 2 seconds or less and should be less than 8 seconds at least 99% of the time.
- The system should provide a "transaction in progress" visual indication for transactions that exceed 3 seconds response time at 2-second intervals until the response is provided.

Statistics and Report Generator

- The system should collect statistics on all facets of system operation and use to support report production and system management.

- The system should permit online retrieval of system status information such as holdings, file status, number of terminals in use, etc. with proper authorization
- The system should provide a report generator that should be able to create lists.
- The system should provide a wide range of: Tabular as well as text presentation, column justification, column widths, number of lines per page, number of significant digits, paragraph indentation, page headers and footers, footnotes, tagged fields, and graphs
- The system should have a sorting capability with at least five nested levels.
- The system should have a report generator which allows for the specification of the data content of a report, including: choice of titles, choice of column headings, choice of data elements, choice of row labels, content of headers and footers, automatic or forced pagination.
- The system should give the user the option of saving report generation specifications for future use.
- The system should enable the user to save a report for future use.
- The system should support storage of reports and report formats.
- The system should support the application of statistical analysis to any report generated.
- The system can sort data in various fashions to provide customized reports as needed for both the central system and each of the local systems.
- The system should provide a wide variety of system performance data. These should include, but are not limited to Terminal use statistics: by location, by time period, by type of transaction, by search result, by terminal ID.

Delivery and Installation

- The vendor should clearly state responsibilities of both the vendor and the client
- The vendor should have responsibility for unloading, unpacking, and placement of equipment, and removing all debris associated with the installations at both the central system and each of the local system.
- The vendor should certify that all materials and installations practices conform to local building codes.
- The vendor should provide written certification when the system is operational, including dates when warranty coverage and maintenance should begin.

- Propose a schedule for delivery, installation, database loading, and training for the system. Supply an estimated time required for installation of the first local library system and for subsequent local installations. Supply an estimated time required and phases for implementing the entire system.

User Services:

Online Help

- Online help should be available from all components of the system.
- Brief, context-specific help should be accessible to the user from any display, prompt, or function.
- The system should retain work in progress when help is requested or a message is displayed (e.g., a user should be able to request help on interpreting a display without losing the content of the display)
- The system should provide comprehensible error messages to users when a mistake is made.
- The system should provide a method for users to send questions or suggestions to library staff.

Training

- The vendor should provide system training.
- The vendor should provide detailed training in advance of the profiling and data conversion process.
- The vendor should provide training close to the time of installation.
- The vendor should provide ongoing training to Library staff for any major system revision.

Documentation

- The vendor should provide complete system documentation and user's manuals that detail all operations necessary for the use of the system.
- The vendor should provide system documentation intended for patron and staff use in machine-readable format.
- The vendor should accept and respond to user questions submitted via e-mail.

Libraries within Doha that could be linked to QGPC's Central Library:

There are at present exchange library loan programmes with a number of libraries in Doha. The exchange programme could be developed into electronic form through the following arrangements:

- Access to library catalogue should be made available on the internet to other libraries in order to facilitate inter-library loans
- Exchanging library catalogues to enable computer searches to be made for other libraries within QGPC's intranet.
- On-line dial-up link with local libraries could also be implemented, if proved worthwhile.

The ESCWA team visited the following libraries:

- **GOIC Library**
  Specialized in references related to industry.
  Present Software: Developed in-house. Possibility for using HORIZON exists for the future.

- **University of Qatar Library**
  A typical university type library with academic and teaching references and text books in various disciplines.
  Present Software: IDRC's MINISIS on HP3000.

- **Qatar National Library**
  Books and references of general nature
  Present Software: Being developed in-house

- **The British Council**
  Mainly English books and references of general nature
  Present Software: Plan is underway to implement a library package named ALICE. ALICE is the council's recommended package for its libraries throughout the world.

Upgrading Central Library Software

The present DOS-based library software in use at the Central Library should be phased out in close collaboration with the Information and Computer Services Department (ICS). Two possible development paths could be considered.

- In-house development to be undertaken by ICS using the Oracle database software.
- Selection of a ready-made Oracle-based solution for a library management system.

While the in-house development alternative many prove to be more economical in the short run, it could result into a non-standard, heavily localized and restricted solution. A ready-made library package may be relatively expensive and could provide an over-kill for the QGPC library. However, it would provide a standard and comprehensive solution. The cost of the ready-made package could be minimized if the following points are taken into consideration:

- That the package is Oracle-based, so that QGPC does not have to pay for the database software license.
- That the package is modular, so that only the relevant modules are selected and paid for.

6. QGPC INFORMATION AND COMMUNICATION INFRASTRUCTURE

QGPC has a comprehensive information and communication infrastructure. This efficient infrastructure is good example of the combination of QGPC's far-sightedness and the reliable national infrastructure that has been made available by Q-Tel, the national telecom of Qatar. Telecommunication services cover reliable day-to-day communication services to all sites within offshore fields, emergency management and a multi-channel satellite communication system that is deployed as back up to the existing analogue network.

The present telecom system consists of:

- Major backbone links and MUX Systems on-land and off-shore
- Radio spur links and VHF/UHF point-to-point links
- VHF and UHF mobile Radio System
- GSM telephones, facsimiles, pagers, office telephones, etc.
- Intercom and public address systems
- Emergency back-up radio links
- Inmarsat satellite communication to offshore operational areas.

An ATM switch that connects the Information and Computer Services Center to all QGPC sites using mainly fiber optic cables handles data on the QGPC network. An IBM 3090 mainframe, two HP3000's minicomputers and several Intel servers are at the center of QGPC wide area network (WAN). The IBM 3090 will be phased out in favour of Enterprise servers in the near future. Figure (3) shows the QGPC WAN layout. The network supports about 3500 workstations, with growth of about 600 workstations per year.

Apart from the proprietary operating software for the IBM and HP hardware, QGPC uses Novell network operating system to run its intranet, and Windows NT for Internet access. All workstations are at present operating under Windows 95.

The main application software used is:

- Oracle 8i for database applications
- Lotus Notes for workflow and for internal and external e-mailing
- Microsoft Office suite for office applications

The intranet environment is extended to all QGPC staff. It is well maintained and extensively used by all. Internet access, however, is restricted to senior staff. The QGPC rule for access is a maximum of 50 users for every department. The bandwidth that connects QGPC Internet server to Q-tel's ISP is 512 kbps.

7. ACTION PLAN FOR POSSIBLE UPGRADING OF LIBRARY SERVICES AND RELATED FACILITIES

There are several functions that could be introduced at QGPC to improve the information services. For practical reasons, the activities are grouped in a three-stage action plan.

Stage 1: Short term (3 to 6 months)

- Posting present library holdings on the intranet. This could be implemented in collaboration with ICS
- Posting recent arrivals of library acquisition on the intranet. Again, this could be implemented in collaboration with ICS.
- Requesting books and other publications by QGPC staff and trainees through the intranet.
- Physical delivery of requested books and publications using QGPC internal mail service
- Addition of at least 4 more Internet workstations at the Central Library.

Stage 2: Medium term (6 to 12 months)

- Allocation of email addresses to CT trainees
- Running Internet orientation courses on searching library databases and catalogues
- Posting contents of periodicals on the Intranet (QGPC-net)
- Enabling requests of staff and trainees for new books over the Intranet.
- Four more Internet workstations to be added at the Central Library
- Initiating library software acquisition (or in-house development).

Stage 3: Long term (18 to 24 months)

- Selection of a software package for library management, OR a decision to develop it in-house is made

- Allocate a server for the library within ICS
- Install a CD Tower (Juke Box) at the library
- Develop linkages with other libraries outside, after ensuring proper security measures
- Add more workstations for Internet access

8. RECOMMENDATIONS

1- QGPC has one of the best information and communication infrastructures in the region. It is felt that the library has not yet taken advantage of such infrastructure. Therefore, it is recommended that the Central Library, in close collaboration with QGPC's Information and Computer services Department (ICS), should target a full utilization of the corporate Intranet (QGPC-net) and the Internet access.

2- Adoption of a plan of action as proposed in this report

3- A web enabled library management package should be acquired or developed for the library

4- Basic training on Internet-based library search should be regularly carried out by the library

5- The Central Library should aim at archiving QGPC internal reports, engineering standards and codes of practice and ensure their availability to QGPC staff through the Intranet.

6- Equipment for handling multimedia should be made available through the QGPC-net. The library should acquire a collection of relevant multimedia materials.

7- Exposure of library staff to best practices and new technologies through participation in training programmes, seminars, workshops and study tours overseas.

8- Corporate Training should seriously consider the opportunities Internet and Intranet technologies provide for education and training functions. Issues like distance learning and virtual training centers should be carefully investigated with the aim to identify directions and technologies that could be adopted by CT to increase productivity and minimize dependency on non-nationals within QGPC.

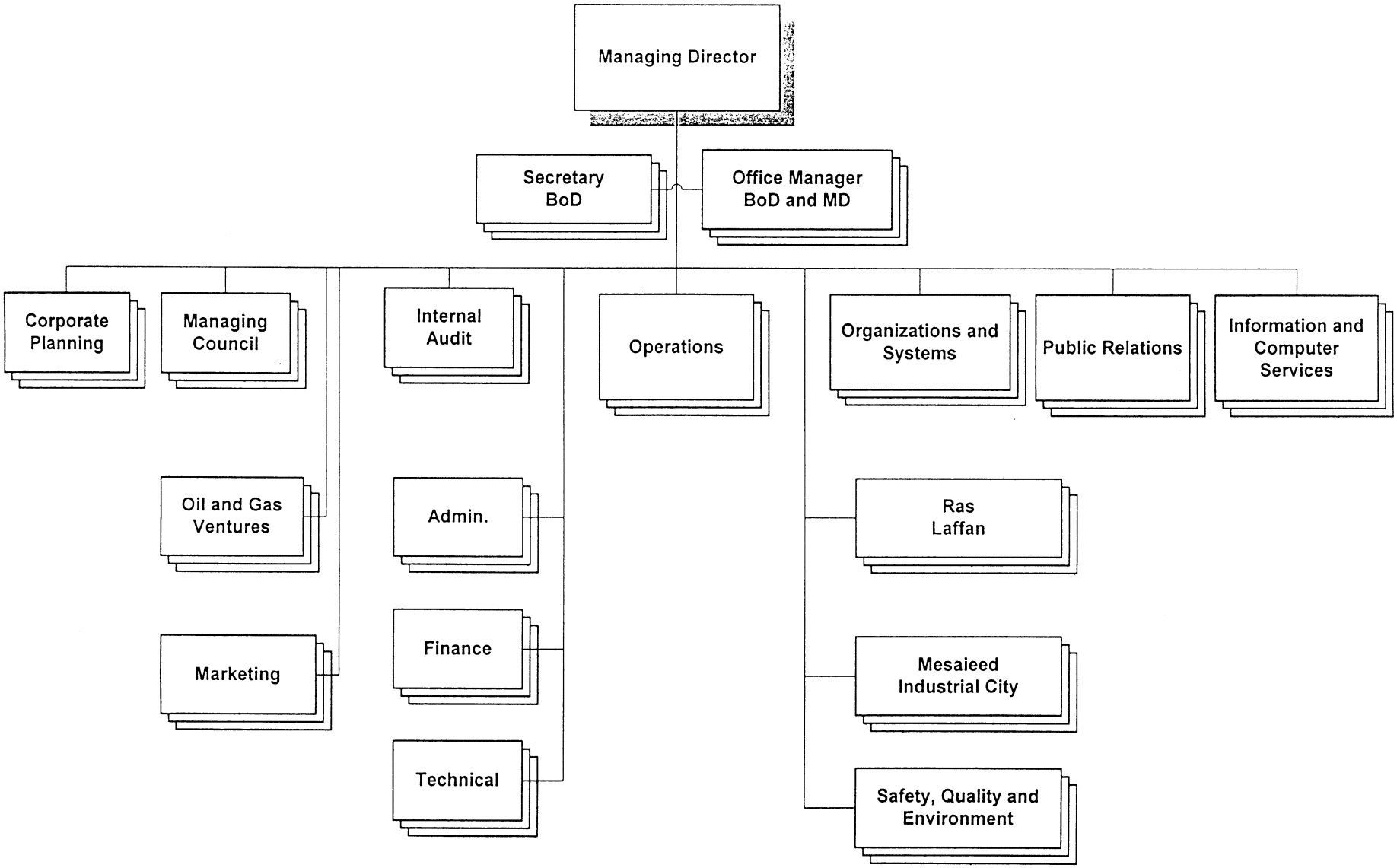

Figure (1) QGPC High-level Organizational Structure

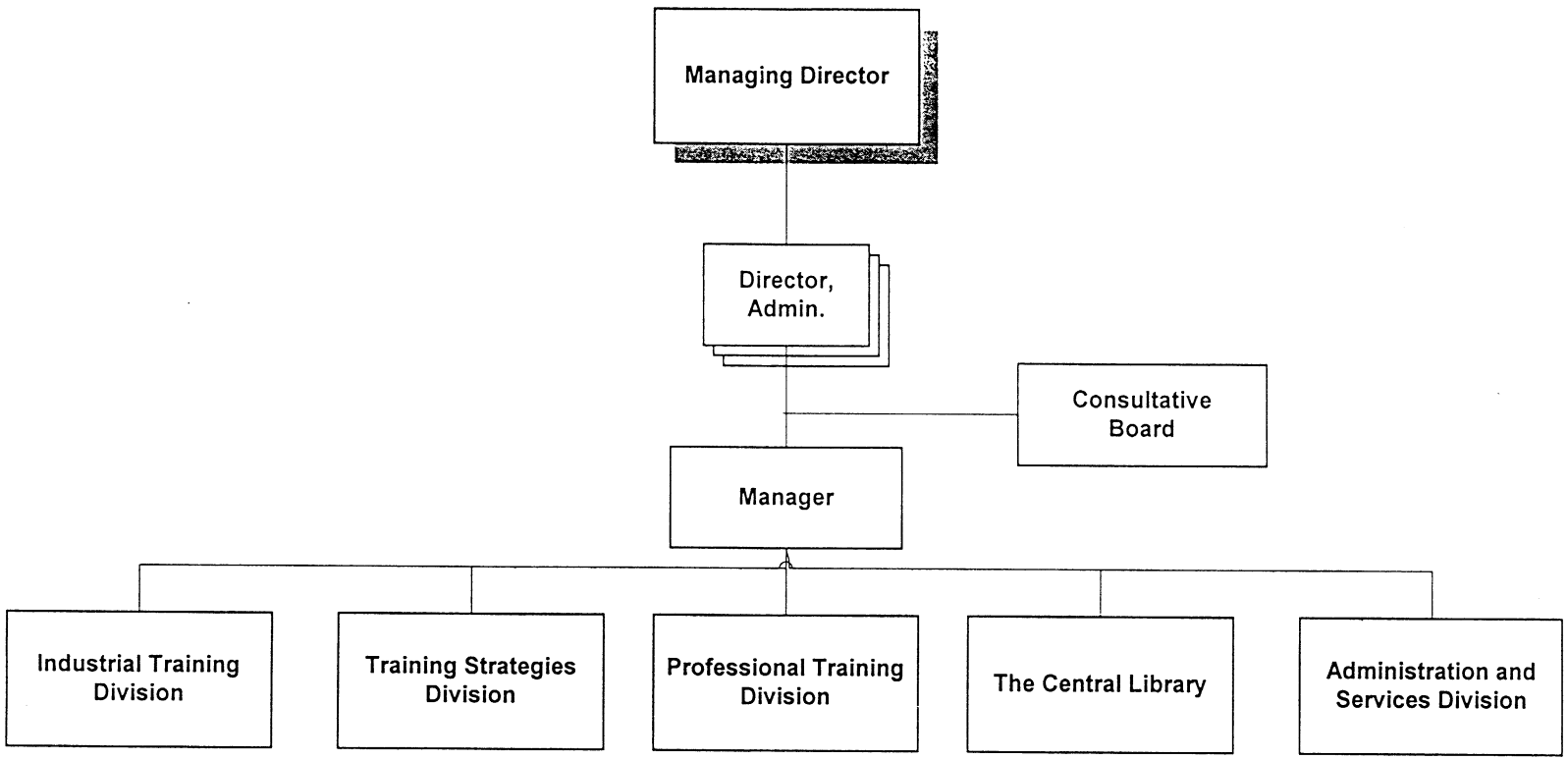

Figure (2) QGPC Corporate Training

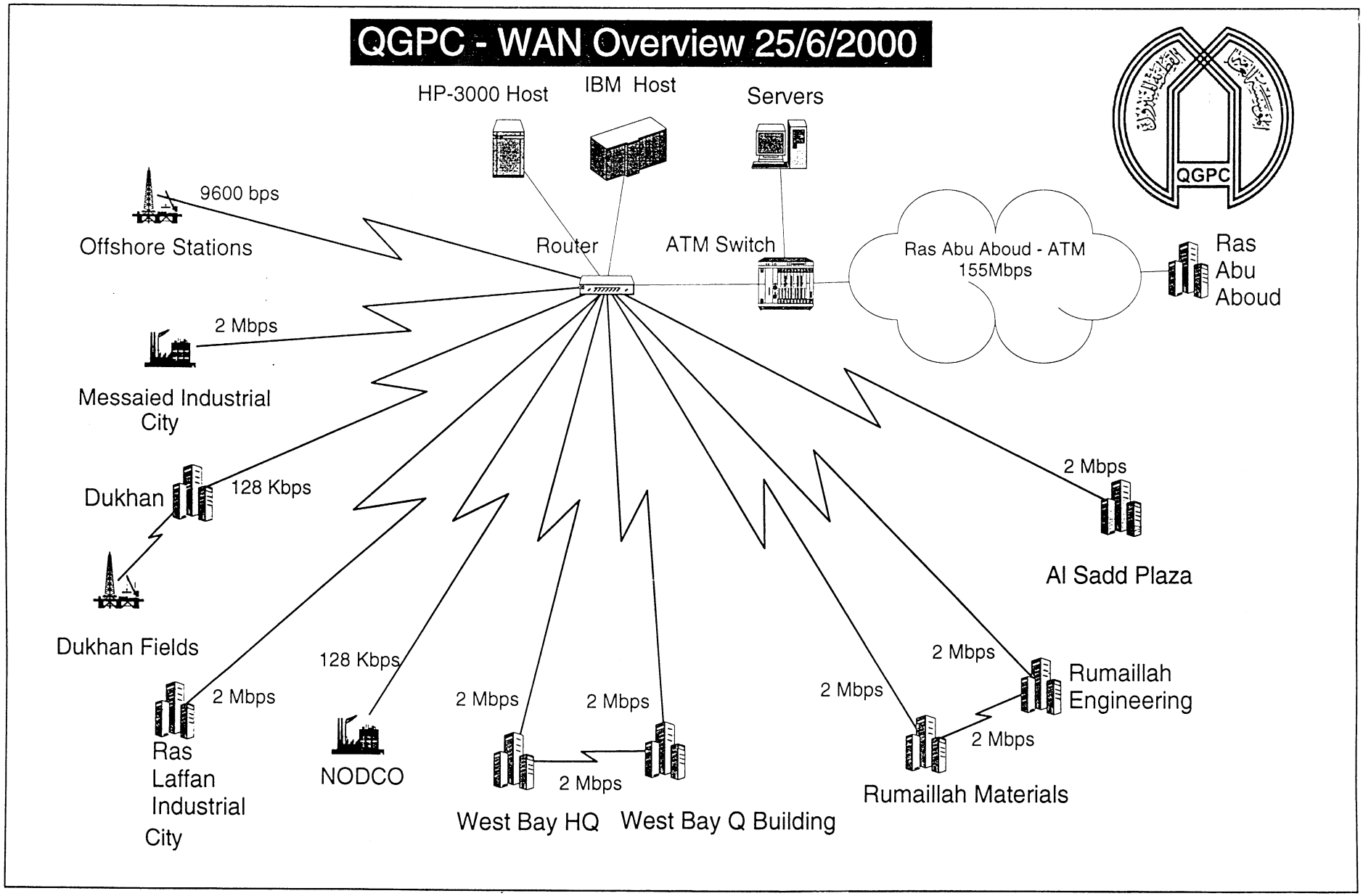

Figure (3) QGPC – net Configuration

Appendix (A)

SCHEDULE FOR THE VISIT OF "ESCWA" TEAM

Day	Date	Time	Name	Program
Saturday	24-6-2000	9:00 - 12:00	A Dewachi	CT, CTS, CT/L, CTP/21 Library Staff
Sunday	25-6-2000	07:15	Mrs. Sawsan Baage	Arrival
		7:00 a.m. - 3:00	Abdulilah Dewachi	1- Visit to ICS 2- Visit to the British Council Library
		17:00 - 19:00	A.Dewachi & S. Baage	
Monday	26-6-2000	6:45 - 7:30	A.Dewachi & S. Baage	Meeting with Library Committee
		7:30 - 8:00	A.Dewachi & S. Baage	Meeting with CT
		8:00 - 2:30	A.Dewachi & S. Baage	Visit to Ras Laffan CT/L, CTP/21 Abdul Raheem
		12:00	A.Dewachi & S. Baage	Lunch at Ras laffan
		20:00	A.Dewachi & S. Baage	Meeting at Falcon Club with CT, & Library Committee Members
Tuesday	27-6-00	7.00 - 9:00	A.Dewachi & S. Baage	Central Library
		7:00 - 7:30	A.Dewachi & S. Baage	Meeting with DA
		7:30 - 8:00	A.Dewachi & S. Baage	Meeting with HR
		9:00 - 11:00	A.Dewachi & S. Baage	Visit to Qatar University Library, discussion with Library officials.
		11.00 -1 2:00	A.Dewachi & S. Baage	Visit to Qatar National Library, discussion with Library officials.
		12:00 - 13:30	A Dewachi & S. Baage	Visit to GOIC Discussion with IDB And Library officials
Wednesday	28-6-2000	7:00 - 7:30	A.Dewachi & S. Baage	Meeting with DA
		8:00 - 13:00	A.Dewachi & S. Baage	Visit to MIC
		12:00		Lunch at MIC
			Sawsan Baage	Departure

Appendix (B)

OFFICIALS MET DURING MISSION

QGPC

1- Mr. Jassim Ibrahim Mohammed Siddiqi Al-Emadi
Director of Administration

2- Sheikh Hamad Jabor Jassim Jabor Al-Thani
Manager Human Resources

3- Mr. Abdulla A. Aziz Moh'd Saleh Al-Sahlawi
Corporate Training Manager

4- Mr. Barak Saeed Yehya
Asst. Manager Training Strategies

5- Mr. Fayez Mohd Esmail Abdulla Al-Boainin
Head Systems Engineer

6- Mr. A. Rahman Mohd A. Rahman Ba Saqr Al-Amoudi
Librarian

7- Mr. Ashraf Salaheldin Ibrahim Abdul Aziz
Computer Instructor

8- Mr. P. Abdul Rahim
Technical Assistant, Central Library

9- Mr. Abdul Nasir
Clerk, Central Library

GOIC

1- Mr. Mohamed Attaitalla Abdalla
Head of Data Analysis Unit
Industrial Data Bank (IDB)

2- Mr. Mohamed Abdul Rasheed
Sr. Information Specialist
The Library
Industrial Data Bank (IDB)

UNIVERSITY OF QATAR

1- Mr. Ahmad M Al-Qattan
Director of Libraries

QATAR NATIONAL LIBRARY

1- Chief Librarian (name not obtained)

THE BRITISH COUNCIL

1- Ms. Nevine Mustafa
Manager, Library and Information Centre

Appendix (C)

REFERENCES

[1] QGPC, New Horizons, July 1997

[2] *www.qgpc.com.qa*

[3] QGPCnet – The Corporation Intranet

[4] Several QGPC internal reports and presentations