3

MODULE

Assessing the Size and Scope of Labor Restructuring

A first step for the implementing agency is to assess the size and scope of labor restructuring. This module begins with an overview of the rationale for carrying out systematic staffing assessments and then summarizes three tools that the implementing agency can use in this regard: staff audits, benchmarking, and work force analysis.

OVERVIEW

This section outlines the rationale for a systematic assessment of the work force and introduces the key questions that the implementing agency must address.

A systematic assessment of the work force enables the implementing agency to:

- Determine the scope and nature of labor needs
- Enter into more informed negotiations and discussions with trade unions and labor representatives
- Reduce the risk of service disruption or operational difficulties through the loss of skilled workers
- Improve targeting in any labor restructuring program
- Ensure fairness and transparency of the process.

The principal objective of a staffing assessment is to determine existing levels and types of staff and compare those with what are needed. To that end the assessment will address the following questions:

- How many staff are there in the enterprise, and how does that compare with required amounts based on efficiency criteria?
- How can surplus staff be identified, and where is it located in the enterprise?
- Are there any particular skills or categories of worker that are scarce?
- Will future market or operational changes place some job skills in more demand than others?
- Are there particular key individuals or staff categories who must be retained—perhaps

Work force restructuring has both immediate and longer-term dimensions.

because their experience is critical to the continued operation of the enterprise?

Staffing assessments are relevant in a range of restructuring circumstances. Work force restructuring has short-term (often urgent) as well as longer-term dimensions. This is illustrated in table 3.1, which characterizes three dimensions: work force reduction, work redesign, and organization redesign.

Three assessment tools—all closely related:

- **Staff audits**
- **Benchmarking**
- **Work force analysis.**

In many PPI programs all three dimensions are involved and the different tools described in this chapter can be applied to each of the dimensions. During the course of a railway PPI transaction, for example, there may be removal of ghost workers, early retirement and voluntary departure (work force reduction), more use of containers and streamlining of terminal turnaround times (work redesign), and the closure of redundant workshops (organization redesign).

There are three tools that the implementing agency can use to address the above questions:

- Staff audits or personnel inventories
- Benchmarking
- Work force analysis.

Terms of reference for consultants to undertake a staff scoping study

Although these are described as three different tools and are presented in separate sections, in practice they are closely related and often overlap. For this reason the model terms of reference for consultants (see the CD-ROM) include all of these tools because they may well be procured as a single con-

Table 3.1: Three Dimensions of Work Force Restructuring

	Work force reduction	Work redesign	Organization redesign
Focus	• Headcount	• Unnecessary work and jobs • Customer orientation	• Organizational structure
Timeframe	• Short (one to two years)	• Short to medium	• Medium to long (five years and longer)
Key tools	• Staff audits • Benchmarking	• Benchmarking • Work force analysis	• Work force analysis • Organizational reviews
Factor(s) to eliminate	• People	• Work	• Units, levels
PPI issues	• Downsizing	• Management contracts • Contracting out • Competitive processes	• Privatization • Concessions • Leases
Implementation and payback period	• Short-term	• Moderate	• Extended
Examples	• Severance • Early retirement • Layoffs • Job sharing	• New working practices • Redesign and simplification of processes • Productivity improvement • Renegotiated labor agreements with unions	• Transfer of social work force (housing, kindergarten) • Exit from noncore activities • Incentive-based payment systems • Outsourcing and contracting out (employee enterprise)

Source: Adapted from Cameron 1994.

tract. In combination they can guide decisions about levels of redundancy, avoidance of adverse selection, and other aspects of restructuring strategy.

The tools described in this section can also be useful when the PPI transaction is not likely to happen for some time. Sometimes the preparation for PPI reform may take years, and during this time there will be proposals for organizational change. Such efforts can themselves benefit from systematic staffing assessments and the use of proper tools.

Staffing assessments and the tools employed in this process are a means to determine the potential size and scope of labor restructuring. The main objective is to estimate the broad extent of restructuring for planning purposes. The process should not become an end in itself or be viewed as a way to determine precise needs or identify individual surplus employees. Such an approach can be highly time consuming and may lead to delays not just in the restructuring process but in PPI itself.

STAFF AUDITS

Staff audits give an up-to-date analysis of the work force and provide the basis for subsequent benchmarking and work force analyses. They also provide the necessary database for accurate estimation of the costs of alternative severance and pensions strategies, and for the eventual disbursement of payments to workers.

Objectives

A staff audit is an essential first step in assessing labor issues in the enterprise. Staff audits help to:

- Bring personnel records up to date.
- Identify and eliminate ghost workers who are still on the payroll. In Argentina's SOMISA steel company, for example, the introduction of a plant census with a photo ID quickly revealed that 17 percent of the work force were shadow employees (Hess 1997).
- Provide a basis for developing severance and early retirement options and for estimating costs if downsizing is needed.
- Fill in critical data gaps (for example, employee age, grade, or start of service) that may be needed subsequently to calculate severance payments.
- Improve the accuracy of subsequent work force analysis.
- Establish effective record-keeping procedures in order to allow management to control or regain control of the payroll, provide management with adequate human resource information, and comply with labor laws and regulations.
- Provide a basis for review of job positions, pay grades, and scales. In some enterprises, harmonization of staff terms is an essential task prior to the PPI transaction. This is particularly the case where a new operating company is to be formed, perhaps drawing staff from civil service and public enterprise cadres.

Up-to-date records of personnel and removal of ghost workers are immediate benefits of a staff audit.

Scope

A staff audit is a fresh review of staffing. It provides up-to-date information on personnel, and typically includes data on:

All categories of staff need to be identified.

- **Employee numbers, categorized by type of employment** (precise definitions will depend on national regulations). For example, permanent full-time and part-time employees; short-term casual, seasonal, or temporary workers; temporary workers engaged for many years (who may have acquired additional rights); professional staff recruited on ad hoc emergency terms; semipermanent workers; contract workers; workers on disciplinary suspension; workers on deputation from elsewhere in government; and workers on administrative leave.
- **Employee numbers, categorized by operational or social criteria,** such as location, job

There may be a big gap between today's skills and competencies and those needed tomorrow.

In some enterprises accurate data will be difficult to obtain.

title, function, salary grade, level of education, age, gender, ethnic group, years of service, and other categories relevant to the country or the enterprise.

- **Employee skills:** Skills assessments are an integral part of the staff audit. They are particularly important in terms of maintaining service levels and quality, and they generally include assessment of individual employee functional or technical skills; identification of key individuals or groups of workers whose knowledge, experience, and institutional memory are critical to the effective operation of the enterprise; and the identification, through some form of gap analysis, of the difference between today's skills and competencies and those required for the future success of the enterprise.
- **Employee compensation** for each employee, or category of employee, including basic monthly salary, cash and other allowances (for example, civil servants in Yemen receive a basic salary and up to 16 allowances), in-kind benefits (for example, housing, travel, and subsidized loans), and pension contributions by the employer.
- **Liabilities of the enterprise to the employee,** which may be important information to collect during the staff audit, particularly in enterprises in acute financial crisis where there may be arrears of salaries or benefits payable to employees, arrears of pension or social insurance payments attributable to employees (both employers' contribution and employee contribution), and arrears of payroll taxes due to the tax authority and other payroll deductions.

In some cases data on these financial liabilities will be available for individual employees; in other cases, only at an aggregate level.

Collecting Personnel Data

The data set described above represents an ideal level of information needed to fully assess the work force, minimize adverse selection, and calculate an individual employee's entitlements in the event of severance. In the first stages of planning, however, data may not be available and the implementing agency may need to obtain some basic minimum figures. Box 3.1 suggests a minimum data set.

Some well-managed enterprises will have up-to-date personnel records and the staff audit will be relatively easy to undertake. In many developing countries, however, adequate information is lacking and substantial effort is needed to build a credible and current personnel database. It will be more difficult when:

- The personnel administration and human resource management functions have been neglected.
- Salary and benefits are complex with many different components.
- Personnel records are entirely paper based, and there is no computerized information available to allow data manipulation, sorting, and analysis.
- Personnel record-keeping has been decentralized, which may mean greater amounts

Box 3.1: What's the Minimum Data Set for a Staff Audit?

In assessing the work force, the minimum information that the implementing agency will need for each employee:

- Age
- Gender
- Years of service and service start date
- Grade and/or category
- Salary
- Allowances
- Estimated arrears of salary
- Estimated arrears of pension, tax, and other benefits.

In the very first stages of staffing assessments, or where data are poor, averages or estimates for categories of employees will be needed (e.g. average salaries, estimated pension arrears, years of service for different cadres of staff).

of missing data and incorrectly maintained records.

- Records have been lost through damage (deterioration, fire, conflict).

Reviewing a sample of the existing records can help the implementing agency determine whether the data are:

- **Comprehensive**—Are all workers included? Are records for certain workers missing? Are there lost or damaged service records? Are performance records complete? Are all the records complete?
- **Accessible**—Is information easy to extract? Is it computerized? In some cases collecting specific information may require a time-consuming, manual review of paper records. Where there is reluctance on the part of enterprise managers, access to records may be deliberately delayed or made more difficult.
- **Accurate and up to date**—Are validation systems in place?

If records are poor, the updating of the personnel inventory is a critical and urgent first step. In such cases the staff audit will effectively provide baseline data against which all proposals for work force restructuring will be assessed.

The way that data are collected and staff audits are conducted is important, too. Effective staff audits will be transparent, and considered by workers to have been undertaken fairly. One way to do this is to use uniform and clear procedures. For example, when Middle East Airlines was conducting its staff audit in preparation for privatization, standard evaluation forms and curriculum vitae formats were prepared for each employee (see the CD-ROM for an actual example of an employee evaluation form). Another example of transparent procedures is the one adopted in Nigeria's civil service census (box 3.2).

Staff are likely to be worried and made anxious by some aspects of the staff audit. Measures to help workers reduce anxiety include:

Standard approaches help improve transparency.

- Early, factual, and open communication with workers about the purpose of the staff audit, what will happen, where, when, and how.
- Early consultation with trade union representatives. Unions may be willing to participate in the staff audit and help ensure that it is open, fair, and transparent, and thereby assuage the concerns of their members.

Records of employee performance are an important data source for the staff audit process. Where appraisal or disciplinary records are incomplete, managers are often reluctant to dismiss staff on the basis of nonperformance because of the risk of noncompliance with labor laws or regulations.

A staff audit in a large enterprise can be resource intensive.

Updating personnel records is, in principle, a relatively straightforward task, but it may be quite onerous, time consuming, and demanding of resources if the PPI enterprise has a work force of tens of thousands of people spread across an entire country, often in remote locations. In some countries, implementing agencies might learn from the experiences (both good and bad) of conducting civil service audits. An illustration of one approach to updating personnel records and identifying ghost workers is given in box 3.2.

Collecting Information on Skills

Even where there is overstaffing, employees are not just a cost but an asset too. Collecting information on their skills and capabilities will help to ensure that the right overall skills mix is available to the post-PPI enterprise and that critical skills are not lost.

Skills Assessments

Skills assessments extend the scope of the basic staff audit and are particularly valuable in sectors where there is rapid technological change, such as telecommunications. The purpose of a skills assessment is to provide information that will assist the implementing agency in identifying areas of skill shortages and avoiding problems of adverse selec-

Skills assessments help avoid adverse selection.

Box 3.2: Nigeria—Conducting Staff Audits in the Civil Service

When the Nigerian government decided to eliminate ghost workers from civil service employment, it set about the task systematically with World Bank assistance. The methodology involved questionnaires, physical headcounts, preparation of comprehensive nominal rolls (staff rosters), scanned photographs, and the use of file numbers to locate the relevant people, compiling actual personnel costs and calculating personnel costs based on headcounts reflected in the nominal roll. A special instructional guide was prepared to elicit relevant data from the field. The guide contained a step-by-step approach required by auditors in eliciting the necessary information. The guide also included the formats of the nominal roll and the records of personnel emoluments.

The staff were required to appear in groups before a panel of auditors. Each person appeared with his or her employment file, which contained or should have contained relevant documents showing that he or she was a bona fide employee. The files were intended to serve as a control, and an effort was made to match the facts in the file with those on the completed questionnaires.

During the interviews staff were questioned about the facts in the file and the questionnaire in order to authenticate the information provided. The interviews were conducted in the open so that other staff members could corroborate the information supplied by the interviewee.

Staff were also all required to fill out standard forms giving:

- Personnel file number, name, gender, and designation
- Qualifications
- Grade level/step, department, location
- Date of birth, state of origin
- Date of first appointment and date of confirmation of appointment
- Date of present appointment
- Remarks
- Image file number for photo ID.

On the day of the physical headcount, which coincided with payday, each staff member was asked to line up and present his or her forms, together with a photograph and employment file. The forms were then checked against the information on file and signed off by the worker's supervisor. Disparities and suspect submissions were noted and the data was transferred to a spreadsheet. In addition, information on pay was entered on to a second spreadsheet, cross-checking the forms with the departmental personnel emolument cards for each staff member.

Source: International Records Management Trust 2001a.

tion where the best people might leave during the course of work force restructuring.

Skills assessments have three elements:

- Assessments of current skill levels and shortages, based on current techniques and technology employed by the enterprise.
- Forecasts of future skill requirements (number and level), using modern technology and management practices. This has a degree of subjectivity and requires some insight into the types of technology that would be used under modernized public sector or private sector ownership and management.
- Analysis of the gap between current and likely required skills to identify areas of skill surplus and skill shortage. This is an important step because a skills shortage in the current enterprise could easily become a total surplus if the skills are not required in the post-PPI environment.

Identification of Critical Skills

Operations managers, responsible for maintenance or service delivery, usually know very well what skills are in short supply today—often much better than top management knows them. Senior management, however, will have a better picture of the overall direction of the enterprise—and hence future skill needs—so the skills audit will need the perspectives of both groups.

Sometimes critical skill surpluses and deficits are not hard to analyze (as in box 3.3). Although some

skill issues can be predicted easily, the implementing agency should be cautious in such decisions. In the airline example in box 3.3, for example, it is conceivable that a PPI investor might be interested in those skills to provide a new regional maintenance business for Boeing aircraft. Where new technology is to be encouraged, the existing managers may not have enough information about that technology to make the best decisions on future staff restructuring.

Union involvement can be useful in the case of skills audits. Often unions are aware of the need for reskilling of the work force and may take a lead on pushing for the reskilling of their members as part of work force restructuring. (See, for example, box 3.4.)

Skills considerations are highly relevant to work force restructuring in PPI because poorly planned labor adjustment that is not skill based can lead to loss of capability within the enterprise, which can affect service delivery and lead to perceptions that PPI has failed. Even when faced with an urgent and undisputed need for downsizing, the implementing agency will need to recognize that workers are also assets—and that their knowledge and experience may have value. Two examples from the railway sector illustrate the problems that occur when this knowledge is lost: Chile's Fepasa railway (see box 5.10 in module 5) and the United Kingdom's privatized track infrastructure (box 3.5).

Box 3.3: Middle East Airlines—Skills Mismatch

A work force restructuring exercise formed part of the preparation for the privatization of Middle East Airlines in 2000–01. Of a total work force of 3,700, about 1,120 were estimated to be surplus to requirements. The largest group of redundant workers was 700 ground employees trained in servicing Boeing aircraft and not qualified to service Airbus aircraft, which made up all of MEA's new fleet.

Source: Middle East Airlines.

Skills and knowledge can be thought of as the understanding gained from experience. If it is important in a particular PPI scheme, the implementing agency can encourage actions to reduce the loss of skills. The following are some of those actions:

Front-line operations managers will have a wealth of knowledge on current skills shortages.

- Ensuring that skills are covered in the staff audit.
- Effective targeting and selection of workers who are to be retained.
- Capturing of tacit knowledge, which is held in people's heads and often revealed in unstructured forms (memos, notes, e-mails).
- Ensuring that skilled workers are compensated properly so that there is an incentive to stay.

BENCHMARKING

Benchmarking is an important mechanism for identifying the potential for labor productivity improvements (box 3.6). Making good comparisons can be difficult, but there are several sources of information. In addition the process of benchmarking will help identify problem areas in terms of overstaffing and opportunities for improving labor productivity.

What Are Benchmarks?

Benchmarks are fixed pieces of information that can be used to make comparisons with other similar fixed pieces of information. Labor benchmarks are not only used as a one-off activity for work force restructuring but also as a tool for continuously monitoring and improving performance and competitiveness. In practice it is the *process* of undertaking benchmarking that generates most benefits because it challenges current norms. Benchmarks provide managers with comparative data on performance and labor productivity. Although like-for-like comparisons are not always easy, benchmark measures can give the implementing agency crude indicators of the scale of any overstaffing.

If knowledge might be lost as a result of the PPI process, the implementing agency can encourage today's managers to document and record critical information.

Box 3.4: India—Unions and Reskilling in the Telecommunications Sector

Trade unions strongly opposed the corporatization of India's main telecommunications enterprise, BSNL. The unions, however, also worked hard to negotiate on issues of long-standing concern relating to staffing, skills, technology, and the viability of the organization.

It was clear that there was overstaffing. As early as 1982 the Sareen Committee Report on the Telecom Sector had pointed out that in India there were 104 officials per 1,000 telephones as against fewer than 10 per 1,000 in developed countries. At that time the International Labour Organisation played a significant advisory role with respect to preparing for work force restructuring, and the telecommunications trade union federations accepted a ban on recruitment in 1984. This ban preceded the creation of Mahanagar Telephone Nigam Limited and Videsh Sanchar Nigam Limited (two new state-owned firms specializing in supply of telecommunications to Delhi/Mumbai and data services, respectively) a few years later. Together with the vast expansion of the sector, this ban led to an improved staffing ratio of 35 per 1,000 lines by 1997. Although there was a ban on new recruitment, the unions had been successful in obtaining the regularization of 100,000 casual and other workers.

The Sareen Committee had also noted a mismatch between the skills required for new technology operations and those that actually existed. Skill upgrading also constituted a core demand from the federations. After the announcement of the National Telecom Policy, the trade unions gave strike notices in August 1994 and June 1995. In both those cases there was an expression of concern about the too-early entry of the private sector and the need to upgrade skills within the public sector enterprises to match this competition:

> *The trade unions in Telecom have neither opposed its expansion nor modernization, but have repeatedly been urging for upgrading of skills and education of the work force which was recruited in a period for the type of work which does not exist today. We have persistently stressed for bringing about a change in the work culture which cannot be automatically achieved by economic improvement.* (Gupta 1998, pp. 33, 34).

Sources: Interviews, relevant reports, and documents; Gupta 1998.

There are three main types of benchmarks:

- **Internal benchmarks:** By making comparisons within an organization, perhaps between different offices or time periods, it may be possible to identify some areas for improvement quickly and easily. An example is the approach adopted by Kenya's electricity distribution company (see box 3.7).
- **Sector benchmarks:** Comparisons in the same sector provide another comparison. International or regional comparisons can be used where the PPI enterprise is a monopoly provider in the country.
- **Functional (process) benchmarks:** There may be other organizations from different sectors but with similar operational functions that can be compared. For example, gas, water, and power utilities might cooperate in benchmarking their metering or billing collection procedures; airlines and railways are similar in the ways they manage the turnaround and dispatch of aircraft or trains; administrative processes, customer service response times, and staff appraisal performance will have similarities in all organizations.

All three types of benchmarks have their places, but a combination of measurement and process analysis is important for effective benchmarking. Measurement identifies the performance gap, but the discussion, debate, and working through of process and operating changes provide the mechanism for operational managers to identify change—including identification of the extent, location, and causes of overstaffing.

To understand the origins of labor productivity, implementing agencies will want to review a range of generic benchmarks (box 3.8), as well as those specific to the sector (box 3.9), such as:

- Number of employees per thousand connections (telephones or water)

A benchmark is a comparative measure. Benchmarking is the process of comparison.

Box 3.5: British Rail—Loss of Institutional Memory

The experience following British Rail (BR) privatization illustrates how flaws in labor restructuring can bring the broader PPI agenda into disrepute. The BR privatization is much cited in Europe as evidence that private profit is incompatible with public safety and service reliability. But testimony given at a public inquiry following three fatal train crashes in the four years after privatization suggested that a principal lesson the experience provides for implementing agencies internationally is to pay adequate attention to issues of work force skills and institutional knowledge.

One former senior BR manager, Chris Green, who has since been recruited by one of the train operating companies to help them deal with their problems, told the *Financial Times* that the "collapse" of professionalism has been the "most fundamental" consequence of privatization. He cited contracting out and the departure of many junior and middle managers "with vital experience" as the cause of the problems. "The net result has been a collective loss of memory on the basics of running a railway," he said. (*Financial Times*, "Inside Track: A Pragmatist's Track Record," February 14, 2001.)

The *Financial Times* has vividly drawn attention to the consequences of replacing an integrated work force and an established hierarchy with layer upon layer of contractors and subcontractors to carry out track maintenance more cheaply. "The first consequence was the breakdown of the old comradeship, which used to mean that problems were easily spotted, repairs made, and people could talk to each other," the business newspaper's analysis concluded, adding:

> *Track workers operated in gangs and knew their stretch of rails like their own back gardens. Instead, workers became nomadic, moving to the next job with little or no local knowledge and instructions not to talk to rival workers except via a supervisor miles away. The second big problem was a growing lack of control over the staff and their work. There have been complaints of sub-contractors recruiting workers out of pubs to fill gaps on the night shift (Financial Times, "Railtrack Descent into Chaos," February 22, 2001).*

The overall effect was to break "traditional bonds and practices of passing on skills and experience," the *Financial Times* commented, and this was exacerbated by the introduction of "hard-nosed commercial tensions into relationships that often needed to be co-operative." "Safe working of the network is hardly possible in such a climate," John Hurst, BR's former organizational development manager, told the public inquiry into the crashes. "Merely taking steps of a technical and operational nature, in light of any particular disaster, will not address this underlying malaise which will inevitably chronically manifest itself in new disasters" (*Financial Times*, "Railtrack's Rocky Train Journey to Its Fifth Birthday," May 21, 2001).

Box 3.6: Benchmarking Definitions

Benchmark: A standard or point of reference used in measuring and judging quality or value.

Benchmarking: The process of continuously comparing and measuring an organization against business leaders anywhere in the world to gain information that will help the organization take action to improve its performance.

Box 3.7: Kenya—Internal Benchmarking in Power Distribution

For each geographic district in which it would be distributing electricity, the Kenya Power and Lighting Corporation (KPLC) identified its characteristics (number of consumers, area, length of overhead line, number of substations, energy sales per customer, and so forth) and found weighted averages for different classes of staff (engineers, foremen, linesmen, and the like) that enabled them to compare fairly easily areas of different labor productivity.

Box 3.8: Generic Labor Benchmarks

Gross or net revenue per employee

Total payroll costs (all employment-related expense) per employee

Total/functional labor cost as a percentage of sales

Ratios of headcount by function (management/operations; customer service/maintenance)

Management salaries (relative to private sector norms)

Salary levels by function (adjusted to allow comparisons)

Hourly wage rate (standard and overtime)

Average weekly hours per worker

Units produced per work hour (unit productivity)

Product/service line revenue per staff-hour/full-time equivalent employee

Training days per person per year

- Number of employees per generated megawatt (MW) (for power generation)
- Number of employees per ton of freight or TEU (20-foot equivalent unit) of containers handled (ports)

Sources of Benchmark Data

Benchmarking data can be obtained from international, regional, and national sources. International organizations are one source of benchmarking data, and increasingly make information available for online access through the Internet (table 3.2).

There are also growing networks of collaborating enterprises in the infrastructure and utilities sectors at the regional and national levels. For example, in the water sector:

- Link to Water Utilities Partnership (WUP) Web site
- Link to Baltics benchmarking Web site

Box 3.9: Sample Labor Benchmarks by Sector

Airlines

Numbers of pilots or ground staff per aircraft

Pilot hours per month

Bus

Staff per bus (drivers and mechanics)

Staff per 1,000 passenger kilometers

Electricity

Number of workers per MW generated

Number of workers per connected customer

Number of workers per MW distributed

Ports

Tons per port employee per year

Tons per gang-hour or gang-day

Tons per ship per gross and net ship-days

TEU per hour (on container terminals) and TEU per gang per day

Because of the significant variation in type of cargo (bags, break-bulk cargo, project cargo, and so forth), port labor productivity is usually related to the cargo type and expressed on a per-day basis either as gross (overall time) or net (time minus agreed delays such as rain and the like).

Rail

Employees per kilometer of line

Total wages as percent of total revenues

Tons-km (freight-service kilometers) moved per employee per year

Passenger-km (passenger-service kilometers) moved per employee per year

Traffic units (ton-km+passenger-km) per employee

Staff-hours of maintenance employees per 1,000 locomotive-km

Telecommunications

Number of main lines in service (working lines) per employee

Number of employees per 1,000 main lines

Water

Staff per 1,000 water connections

Staff per 1,000 water and sewerage connections

Staff per 1,000 people served

Thousands of cubic meters of water sold per year per employee

Kilometers of pipeline in the water supply system per employee

Thousands of people served per employee

- The WUP provides a regional forum for urban utilities in Africa to share performance data (see www.wupafrica.org). The WUP has just completed a benchmarking exercise gathering data from more than 100 water utilities in Africa.
- In the Baltics a group of utilities are benchmarking against each other (see www.water.hut.fi/BUBI/home/benchmarking)
- In Brazil a national agency concerned with water sector reforms, Projeto de Modernização do Setor Saneamento within the federal Ministry of Planning and Budgeting, has a data set on operating costs for about 100 municipalities.
- With World Bank support the Vietnam Water and Sewage Association is creating a database of urban water sector costs and performance in the country through the low-cost collection and publication of data provided by more than 60 provincial water companies (see Nguyen 2002 and benchmarking data for the 60 companies in the CD-ROM).

- Link to AFUR Web site
- Link to SAFIR Web site

Other cross-sector regulatory groups, such as the African Forum for Utility Regulation (AFUR), are also trying to include benchmarks and indicators as part of their information-sharing processes (see www.worldbank.org/afur). SAFIR (the South Asia Forum for Infrastructure Regulation) also provides some comparative information (see www.safir.teri.res.in).

In addition to data from international organizations, trade associations, regulators or associations of regulators (such as AFUR or SAFIR), or other groups, statistics on labor productivity may be available from private sector benchmarking firms. Because there is competition among private sector firms in infrastructure services, not all PPI enterprises may be willing to share their methods and commercial information. Private sector intermediaries can provide services in benchmarking and interfirm comparisons, often on a cost-share basis and usually with mechanisms for providing a measure of confidentiality.

Regional collaboration can provide excellent opportunities for benchmarking of many aspects of performance, including labor productivity.

Using Benchmark Measures

The collection and analysis of relevant data (metrics) are essential for the identification of areas of good or poor performance, and for the subsequent analyses of operational processes. This section gives some illustrations of labor productivity benchmarks reported in a number of infrastructure sectors, and makes suggestions on the collection and use of benchmarking data.

Comparisons within a sector can indicate potential low labor productivity, as the following examples illustrate.

Airlines sector:

- Before it was liquidated in the early 1990s the state-owned Zambia Airways employed 300 staff per plane, compared with an industry norm of 140 at that time (Kikeri 1998).
- Loss-making long-haul carrier Air India had a staff-to-aircraft ratio of 663 in 1997, compared with ratios between 170 and 340 in various Southeast Asian carriers: Singapore Airlines, Thai Airways, Malaysian Airlines, and Cathay Pacific (India, Disinvestment Commission 1998).
- At Middle East Airlines (MEA) pilots work 60 hours per month, compared with an average of 90 hours per month in Organisation for Economic Co-operation and Development (OECD) countries. The maximum number of flight hours at MEA is 9 in a 24-hour period, whereas the international average is 10.5 and at some airlines it reaches 12.

Bus operations sector:

- Comparisons of the performance of state bus companies in India showed big differences in labor productivity among states: staff to bus ratios varied from 6.03 in

Table 3.2 provides sources of international benchmark data for a range of sectors.

Table 3.2: Some Sources of International Benchmarking Information

Sector	Source
Ports	*United Nations Conference on Trade and Development (UNCTAD):* UNCTAD's *Annual Review of Maritime Transport* provides statistical data for the world's ports (see the digital library at UNCTAD's Web site, www.unctad.org). *Others:* • Australia's Productivity Commission undertook an international benchmarking of productivity on Australia's ports. Results are available at the Commission's Web site, www.pc.gov.au/research/benchmrk/wtfrnt/wtfrnt.pdf. • The American Association of Port Authorities (whose members are 150 ports in North and South America and the Caribbean) distributes port statistics and information on labor–management relations. Information is available at www.aapa-ports.org.
Postal operations	*Universal Postal Union:* The union provides an online database with statistics on variables, including the number of full- and part-time staff. The database is available at www.upu.int. *International Postal Corporation:* This association of 22 postal operators handling 65 percent of the world's mail undertakes some cooperative benchmarking projects, but to date none of the projects focus on labor issues. The Web site is www.ipc.be.
Rail	*World Bank:* A principal source of comparative data on worldwide railway performance can be found at www.worldbank.org/transport/rail/rdb/countries.htm.
Road	*SAFIR:* Comparative analysis of bus operations in South Asia (SAFIR 2002) is available at www.safir.teri.res.in.
Telecommunications	*The International Telecommunications Union (ITU)* (www.itu.int): • The ITU's statistics department collects aggregate data provided by national ministries or regulators at the country level on numbers of employees in the telecommunications sector. The ITU does not, however, hold data at operator level (although there is a database to facilitate contact with individual operators), and its statistics combine both mobile and fixed line employment. • The human resources department of the ITU is establishing regional centers of excellence for training and staff development purposes, and has developed a computerized tool (MANPLAN) for forecasting strategic staffing and training needs. • Regional comparative data are available in the ITU's *Africa, Asia-Pacific and Americas Telecommunications Indicators* reports. • The most recent telecommunications indicators from the ITU's statistical database are available from the ITU web site**:** http://www.itu.int/ITU-D/ict/publications**/.**
Water	*Asian Development Bank:* • The ADB has financed two issues of the *Water Utilities Data Book*, which provides valuable information on water utilities in the Asian and Pacific region. The second edition was published in 1997 (McIntosh and Yinguez) and is available for purchase from the ADB, Manila. • The ADB has provided support for benchmarking in particular regions (e.g., the Pacific Water Benchmarking Study [Delana 2002]). *World Bank:* • The Benchmarking Water and Sanitation Utilities Project has a Web site that provides core cost and performance data: project information can be found on http://www.worldbank.org/watsan/topics/bench/wup.html. • Although there is considerable benchmarking activity at the national level, much of the information is scattered. Information on an initiative to help utilities (and regulators) share and access data can be found at www.worldbank.org/watsan/pdf/benchmarking/pdf. Included there is a start-up kit for water utilities wishing to participate in benchmarking. • A set of water and wastewater utility indicators is available at the Web site of the Water and Sanitation Program, www.worldbank.org.watsan/pdf/indicators.pdf. • The annual World Bank Water Forum provides a discussion and examples of the use of performance benchmarking, as does the World Bank publication *A Water Scorecard* (Tynan and Kingdom 2002). *International Water Association (IWA):* The IWA (www.iwahq.org.uk), a forum for sharing of experience among members, recently has published guidelines titled "Performance Indicators for the Water Industry" (Alegre 2000) and "Process Benchmarking in the Water Sector" (Parena, Smeets, and Troquet 2002). The IWA Foundation focuses on water issues in developing countries.

Karnataka and 7.12 in Andhra Pradesh to 11.55 in Madhya Pradesh and 16.08 in Orissa.

- In Sri Lanka private sector bus companies operate with 2 to 3 staff per bus, compared with 5 to 13 staff for state-owned bus companies (SAFIR 2002).

Rail sector:

- A World Bank study of concessioned railways in seven countries showed wide variations in labor productivity, measured as outputs divided by number of employees in the rail sector. The most productive U.S. railways had 22 times fewer workers per traffic unit (passenger kilometers plus freight kilometers) than did some railways in Mexico (Thompson, Budin, and Estache 2001).


Thompson, Budin, and Estache 2001.

- Following railway privatization, PPI and restructuring the ratio of labor cost to revenues fell from an average of 64.3 percent to 48.4 percent in eight case studies (mainly from industrialized nations) (Kopicki and Thompson 1995).

Telecommunications sector:

- In Malawi the national telecommunications operator has a ratio of 16 working lines per employee compared with a Sub-Saharan average of 31 working lines (Sauti-Phiri 2002).


Selected telecommunications indicators.

Water sector:

- An analysis of data from 246 water utilities (including 123 utilities from 44 developing countries) proposed a benchmarking target of 5 or fewer staff per 1,000 connections for developing-country water utilities. This target was based on the levels of productivity actually being achieved by the top quartile of developing-country utilities within the database. By contrast many developing-country utilities reported more than 20 staff per 1,000 connections (Tynan and Kingdom 2002).

- Comparisons among Vietnam's provincial water companies show a number of operators with labor productivity well below the average (see figure 3.1), which would justify further assessment of the cause.

Making comparisons within a region can also prove valuable for implementing agencies that need to understand whether overstaffing is confined to just one enterprise or is a common problem in all infrastructure utilities. As shown in table 3.3, an assessment of the utility sector in Uruguay compared with other countries in the region signaled potential problems in labor productivity in a number of utility sectors. Regarding that table, two points are instructive:

1. Differences in productivity within a geographic region can be substantial. Implementing agencies do not need to compare between OECD industrial countries and developing countries to gain useful insights. The benchmarks and the comparators in this example were all classed in the 1997 World Bank *World Development Report* as upper-middle-income countries (except the Republic of Korea, which then was classed as lower-middle-income)

2 There is some degree of subjectivity. The basis for assessing the "best performance" benchmark was based on a range of sector and regional reports plus interviews with sector specialists for each country.

In practice, several factors make the comparison of benchmarks across countries and PPI operations challenging. These factors include:

- **Increased outsourcing and contracting out:** Because utility and infrastructure enterprises outsource many of their operations, comparisons based on units of activity per full-time, permanent employee may not provide a like-for-like comparison.

- **Comparability of the scope of the PPI enterprise:** Published data may report labor numbers and productivity in operations that are combined in some countries and separated in others—for example, telecommunications

Benchmarks are useful for identifying levels of labor productivity.

Table 3.3: Regional Comparative Performance Measures

Sector	Uruguay	Argentina (private sector)	Brazil	Mexico	Chile	"Best performance" (and reasonable benchmark)
Telecommunications (main lines per employee)	88	155	121	174	153	294 (Korea, Rep. of)
Electricity (customers per employee)	102 (in 1995)	280	177	208	285	285 (Chile)
Water and sanitation (employees per 1,000 connections)	8	3	5.2	4	2.1	1.8 (Malaysia)

Source: World Bank 1997a.

and postal services; water and sewerage operations; and power generation, transmission, and distribution.

- **Differences in condition of the infrastructure:** Some older networks have high maintenance costs as a result of age or past inadequacies in investment in new technologies (be it optical fiber for telecommunications, port containers, or combined-cycle power plants).
- **Extent and nature of the network:** Service providers in dense urban areas will have staffing requirements that differ from those of rural providers. Some railways may have a markedly more benevolent topography than others, so that track maintenance costs are lower. Different regulatory regimes may place different legal obligations on the level of service provision, leading to very different cost and staffing structures.
- **Depth and quality of the data:** All benchmarking data sets will benefit from greater precision, clear definitions, and disaggregation. The more information that is available and the more that users can be sure of the relevance of the data sets, the more trust can be placed in them. Even so, averages can be deceptive and can be distorted by abnormally high or low performance.
- **Misuse and abuse of benchmarks:** Labor benchmarking statistics can be misused and used to exaggerate or understate the need for downsizing. For example, simply setting labor adjustment targets to match international best practice levels can be dangerous if it does not take account of the particular conditions bearing on the enterprise. Furthermore, data can be manipulated (for example, by excluding temporary or seconded workers) to suggest that staffing levels are not particularly high.
- **Age of the data and the fast-changing nature of the work force:** Almost by definition, a benchmark will be out of date the day it is published. One year's best practice can soon translate into next year's average performance so it is essential to ascertain the date relevancy of the data. Old data are still valuable, however, because they allow trends to be identified, thus enabling the implementing agency to assess whether productivity and efficiency gains are accelerating or stagnating. One example of changing productivity is that of Bharat Sanchar Nigam Limited (BSNL), the main state-owned telecommunications operator in India. As the number of subscribers has risen, staff numbers have remained constant and labor productivity has risen steadily (table 3.4).

Table 3.4: India—Changing Labor Productivity at BSNL, Selected Years

Year	Subscribers (millions)	Employees (thousands)	Employees per 1,000 subscribers	Subscribers per employee
1981	2.15	289	134.45	7.44
1991	5.07	375	73.90	13.52
1995	9.80	419	42.78	23.39
1996	11.98	421	35.14	28.46
1997	14.54	429	29.50	33.89
1998	17.80	425	23.87	41.88
1999	21.59	424	19.64	50.92
2000	26.51	421	15.88	62.97

Source: Reports issued by BSNL.

- **Policy and structural reforms in the sector:** Productivity benchmarks also change as a result of liberalization, new entrants into the sector, and new technologies. For example, a private sector operator and new entrant into telecommunications in India, Tata Teleservices, has about seven employees per 1,000 subscribers for the fixed services it provides in Andhra Pradesh (albeit using radio for the local loop)—approximately half the ratio achieved in 2000 by the former monopoly, BSNL. In general, as infrastructure companies are exposed to competition and new investment is increasing, the work force in benchmark comparators changes from year to year as a result of increased demand for very experienced managers and senior specialists with commercial, financial, and information technology skills; fewer unskilled workers but more workers with technical skills and experience in newer technologies (especially in sectors such as telecommunications); and fewer administrative and clerical jobs, but more customer service facilities.

In summary, the key to choosing and using benchmarks for labor adjustment is in selecting operations and measures that are as comparable as possible. The development of regional, national, and international benchmarking and information-sharing groups is likely to improve the availability, quality, and relevance of data. Comparative benchmarking provides valuable information on potential levels of overstaffing, even if it is best used in combination with other analyses. (See box 3.10 for a list of suggestions for making the best use of benchmarking data.)

Benchmarking Labor Costs

There are significant differences in labor productivity between the "best" and the "worst" groups in developing countries.

Given the difficulties in comparing labor productivity in terms of output per employee, one alternative approach is to focus more on benchmarks involving output per unit cost of labor or labor costs as a proportion of total operating costs.

The increasing use of contracting out makes it difficult to compare labor productivity based on full-time employee numbers.

In the rail sector, even comparisons of partial labor productivity measures are difficult because of differences in topography, traffic mix, technology, level of past investment, international trade disruptions, industrial geography, and so on. Basic measures such as ton-kilometers, passenger-kilometers, locomotive-kilometers, revenue ton–kilometers are, more often than not, estimates based on tons of freight or passengers multiplied by average length of haul or trip. The difficulty in calculating passenger-kilometer estimates is particularly great on railways with many urban commuters. Combined measures such as traffic units per employee (ton-kilometer+passenger-kilometer) suffer from similar problems.

Labor productivity "norms" may change quickly, especially following the introduction of competition or rapid growth in demand for services.

Box 3.10: Hints and Tips for Using Benchmark Data

- Be ruthless in data quality; cross-check anything that looks suspicious. Erroneous outliers can greatly distort comparisons.
- Ensure that definitions are clear—particularly in relation to full-time equivalent employees, categories of staff employed, and the scope of the comparisons—in order to help ensure genuine like-for-like comparisons.
- Don't rely on just one measure because this can give a distorted picture. In the water sector, for example, staff per 1,000 connections may be inappropriate if some utilities have large numbers of shared (multiple-user) connections. In that case staff per 1,000 users and labor costs as a proportion of operating costs will be useful additional measures.
- Wherever possible visit benchmark organizations. Talk to the people who compiled the data.
- When starting up, historic data series are useful because they show trends and help spot erroneous data and trends.
- Use local or international consultants to support the work, but keep it as simple as possible. Avoid too many and too complex measures.
- Involve people, especially operational managers. Exchange ideas at provincial, national, and regional seminars.
- Although the short-term goal may be to collect information to help in immediate downsizing, valuable information can be obtained for the PPI bidding and transaction process (which may take two to four years). Where regulators are being established, the information also provides them with a baseline. Data improve over time, so "sell" benchmarking to PPI enterprise managers as an investment.

Benchmarks change constantly as technologies and work practices change.

Examining staff costs (wages plus benefits) as a percentage of total operating revenue reveals that, in a number of railways, staff costs alone exceed total revenues from users and are often the largest single cost category. This may be a better way to evaluate labor productivity than using a ratio of staff to traffic units (passenger kilometers plus freight kilometers) because it factors in differences between labor unit costs in different countries, which might be a reason for some railways legitimately being more labor intensive than others.

In some sectors labor costs are relatively low as a proportion of operating costs or capital costs. In an analysis of 77 electricity-generating plants in 28 industrial and developing countries, the average shares of cost were 10 percent for lubricating oil and materials and 13 percent for labor, but 48 percent for fuel and 29 percent for capital (Diewert and Nakamura 1999, based on a 1993 data set.)

Figure 3.1 provides a simplified performance structure for a generic utility and shows that labor costs are only one part of the overall cost structure.

In a few cases the PPI investor may not be very concerned about staff numbers, perhaps because there is little overstaffing or because low wages make labor a small proportion of overall costs.

More commonly, however, overstaffing means low labor productivity and high staffing costs. Low wages do not necessarily mean relatively low staff costs. In their analysis of 246 water utilities, Tynan and Kingdom (2002) found large differences within developing countries. Average staff costs as a proportion of total operating costs were 39 percent in developing-country utilities compared with 29 percent in industrialized-country utilities.

Even where labor productivity is poor, other factors play a part. For example, high water tariffs in Conakry, Guinea, were only partly the result of low labor productivity (by regional standards). High debt-servicing costs, considerable amounts of bad debt, low collection rates, and a high percentage of expatriate staff were other factors (Brook and Smith 2001). (That is why some governments and firms prefer to measure "total factor productivity" as a more accurate guide than raw output/input ratios on numbers or costs of workers; see, for example, Cowie and Riddington 1996 and Economic Commission for Europe 2002.)

"Per employee" labor benchmarks can be complemented by benchmarks that use labor costs rather than staff number.

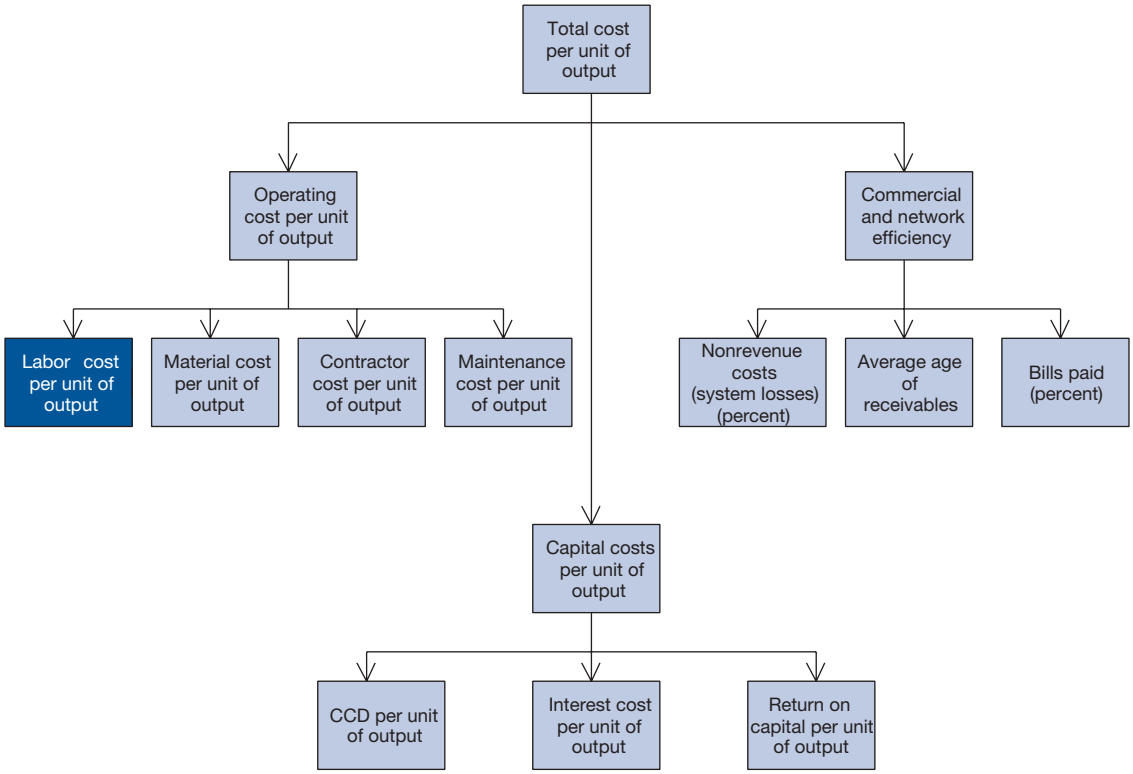

Figure 3.1: Structure of Performance Measures for Utilities

Note: CCD = capital cost depreciation.
Source: Webb and Ehrhardt 1998.

WORK FORCE ANALYSIS

Work force analyses build on staff audits to analyze and forecast the structure of the work force and then match that structure to the requirements of the infrastructure enterprise.

Objectives of Work Force Analysis

Work force analysis comprises a set of tools that provides a bridge between the details of staff audits, benchmarking, and the wider organization design issues. Those tools, however, still provide only part of the information needed for detailed assessments of downsizing requirements and methods of selection.

Work force analysis is very similar to a human resource planning exercise, but in this context it is focused on the information needed for work force restructuring *in preparation for PPI*. Detailed work force analysis is particularly useful when a large enterprise is being broken up into new operating units, as illustrated by Brazil Railways in box 3.11. The purpose of work force analysis is to identify staffing requirements *at the unit or operational level*, and it will help managers in the implementing agency and the enterprise to:

- Identify the levels and types of staff needed for future requirements in operating units
- Make more informed decisions on transfers between units and the organization of severance schemes
- Avoid the loss of critical skills (adverse selection).

Low wages in developing countries do not mean that staff costs are low.

Box 3.11: Brazil—Work Force Analysis in Rail Privatization

Following unsuccessful attempts to restructure Brazil's federal railway, RFFSA, under the public umbrella, the government included RFFSA in the National Privatization Program in 1992. Implementing the proposed privatization plan required some degree of reduction in RFFSA's employment. Although RFFSA had already made significant progress in reducing its employee headcount, the company's labor productivity continued to be low. RFFSA had reduced its total staff from about 110,000 in 1975 to about 42,000 in May 1995. That reduction led to a substantial increase in labor productivity—from 250,000 to almost 1 million net ton-kilometers per employee. That level of labor productivity continued to be insufficient, however, when compared not only with similar North American companies but also with recently restructured and privatized railways in Argentina and Chile.

The strategy to deal with the excess labor had to be subtle. There were significant differences in labor productivity across RFFSA's regions and uniform cuts across the board would not make sense.

The solution was to come up with new cost reduction plans for each of the six regional areas to be privatized, based on new operational procedures, with redundant activities identified by job categories. This was essentially a very meticulous job that required a very detailed study based on the best international practice. The redundancy estimates were to be conservative to avoid second-guessing what the concessionaire would actually need and avoid forcing the concessionaire to have to rehire "fired" workers as had been the case in Argentina and the United Kingdom. In addition, there had to be enough staff remaining at the company at the time of transfer to the private operator to avoid interruptions in service. To ensure that, a detailed analysis was conducted by the regional managers to assess both the staffing needs for each function and the number of excess workers. By the end of this analysis, RFFSA's management had reasonable estimates of the staff reduction needs in each regional area. In May 1995 this process led to an employment reduction target number of 20,000 workers. Between May and September 1995, almost 2,000 workers voluntarily decided to leave the company, so that by the time the first concession was announced in September 1995 the new reduction target number was 18,047.

Source: Estache, Schmitt de Azevedo, and Sydenstricker 2000.

Work Force Analysis Tools

This section summarizes some tools that can be used by managers of the enterprise or the implementing agency to better understand the structure and composition of the work force.

Tool 1: Staff Audit and Benchmark Consolidation

The information gathered from staff audits and benchmarking is a critical baseline for conducting work force analysis. It is essential that this information is disseminated and shared by all enterprise managers who will be involved in work force analysis so that they have a common understanding of staff data. Rigorous debate and discussion on the staff audit and benchmarking data can then be a powerful catalyst for prompting managers to review current staffing assumptions and norms.

Tool 2: Functional Review of the Organization

Work force analysis must be informed by a wider organizational perspective. This may be provided by a corporate plan, a reform plan, or government policy, although in some cases such documents may not exist or may be too vague to be helpful. In those cases one of the most basic tools is a functional review of operating units. This review can be undertaken by managers themselves or be facilitated by consultants, and it can draw on the knowledge of the work force. Workers—and unions—may have perspectives and answers that are beyond the institutional knowledge of management or consultants.

Functional reviews challenge the existing organizational structure and norms by asking some straightforward but difficult questions:

- *Is this activity needed at all?* In the case of a (loss-making) state bus company, which competed in a range of sectors (urban, rural, and intercity), the growth of a highly competitive, privately operated bus sector meant that there was little continuing rationale or need for a public service within urban routes.
- *Should the enterprise be undertaking this activity?* In the first phase of restructuring of Argentina's national oil company, Yacimientos Petroliferos Fiscales (YPF), many nonstrategic assets that YPF had amassed over the years were sold through unrestricted bids, including aircraft, schools, hospitals, and obsolete refineries (Grosse and Yañes 1998). In Russia and China many infrastructure enterprises maintained large social assets (housing, kindergartens, vacation rest houses) that subsequently were transferred to local government or were privatized.
- *If the activity is still needed, is the enterprise really the best provider of this function?* Maintenance of locomotives, aircraft, power pylons, and vehicles; employee transportation services; catering services—these are all activities that infrastructure companies have contracted out to specialist companies.
- *If this is a critical activity, are the scale and scope of operations appropriate?* For example, following the break-up of the former East African Community (EAC), Kenya Airways and Kenya Railways inherited workshops and other facilities (and staff) designed to service all three countries of the EAC. Although some of these units were no longer needed, they (and their staffs) were retained for many years.

Those questions are simple but getting the answers may be difficult. They also may be highly contentious and fiercely debated. Nonetheless, functional reviews are critical because they can expose whole activities, units, or operations that are redundant. These noncore activities are potential candidates for work force reduction.

In grossly overstaffed enterprises, functional analysis can be implemented as a zero-based approach. Argentina's national oil company, YPF, was so overstaffed that the company and its consultants "decided to eliminate all positions and start from a clean slate while building the new organization frame" (Grosse and Yañes 1998, p. 57). (The organization shrank from about 52,000 employees to fewer than 6,000; 50,000 employees left with generous severance packages, and 3,500 new staff were hired).

There are many other approaches to organizational review, but functional analysis is one that closely relates to the wider reform agendas of many PPI plans.

Work force analysis is a staffing planning activity focused on operational units in the context of work force restructuring.

Tool 3: Ratio Analysis of Staff Data

Data from the staff audit can enable detailed analysis, such as that undertaken by Brazil's federal railway (box 3.11). Staffing ratios can be used as internal benchmarks to compare regions, units, or operations. Types of ratio analysis are:

A shared understanding of staff audit and benchmark findings is an essential starting point.

- **Trend analysis,** which considers past ratios (for example, the ratio of managers to charge hands to unskilled workers), and projects those forward, perhaps with revised assumptions.
- **Staff turnover,** which is computed as the number of employees leaving in a year divided by the average number of employees in the same year multiplied by 100.
- **Length of service analysis,** which may be important in relation to the eligibility rules for severance and pensions (see module 5).
- **Cohort analysis,** which identifies the survival rate of particular groups or cohorts of workers. This can be particularly important where there has been an element of earlier restructuring, and where certain cohorts are particularly important (for example, engineers with bachelor's degrees or airline maintenance staff trained on particular aircraft). The survival rate is the proportion of employees engaged during a defined period who remain after so many months or years. If 50 staff were trained in telecommunica-

Functional reviews ask tough questions, but can reveal whole units or activities that are no longer required.

tions engineering and only 20 remain in service after two years, the survival rate is 40 percent.

As with benchmarking, it is the process of examining, reviewing, and challenging staffing ratios that can yield the most benefits.

Tool 4: Productivity Reviews

Determining the number of staff needed to undertake a particular task is, in theory, just a simple formula:

$$\frac{\text{(Number of tasks} \times \text{time required per task)}}{\text{Number of employees required}} = \text{Time available per employee per year}$$

This formula, however, does not take into account new technologies, alternative working methods, skills levels, work rate, and the impact of constraints on labor productivity. It is usually not sufficient to rely on such analysis alone because it does not challenge managers to find new ways of improving labor productivity.

In some enterprises the combination of government regulations, accumulated work force numbers, and "custom and practice" may have created well-established but now inappropriate labor productivity norms. These can be tackled through:

- The combination of good staff audit data and benchmarks
- Revisiting labor norms through a zero-based approach to labor budgets, linked where necessary to new work study assessments
- Experimental or pilot contracting out of tasks to the private sector
- Experimental or pilot investment in new equipment (in cases where labor productivity is low as a result of inadequate investment).

Tool 5: Age Profiles

Age profiles help predict the structure of the work force over time and the numbers of staff leaving or taking early retirement. There are three basic elements to such profiles:

1. Present staff resources
2. Natural attrition (for example, normal retirements, long-term sickness, death in service, maternity, and job change)
3. Future restructuring or recruitment plans.

An illustration of age profiling is shown in figure 3.2. Age profile analyses will be particularly important if there have been recruitment surges or freezes that have distorted the "normal" age profile of the work force.

Mechanisms for preparing age profiles will vary from enterprise to enterprise but the underlying calculations are variants of factors such as present strength, expected new recruitment, average rate, and forecast strength over the next few years (see

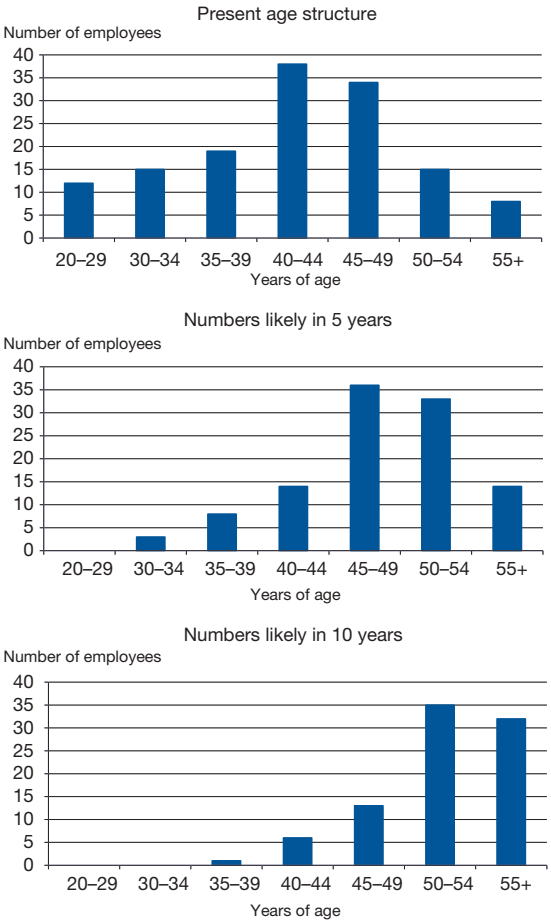

Figure 3.2: Sample Age Profiles

the CD-ROM for an actual example of such calculations). The implementing agency can ask enterprise human resource managers to use such profiles to calculate the impact of hiring freezes or the rate of loss of key skill sets. Those calculations can be informed by ratio analyses, such as labor turnover rates, length of service, and cohort analyses.

Age profile approaches can also be disaggregated to assess particular groups of workers, perhaps by gender, particular skills sets, or particular locations.

Tool 6: Supply Forecasting

Work force analysis will not only inform the process of downsizing. In many cases enterprises need to both retrench and recruit at the same time. Many public enterprises have both a surplus of unskilled staff and a deficit in key technical, commercial, or managerial skills (often because they are unable to pay enough to recruit high-quality staff). Forecasting the supply of staff, by category, will be particularly valuable where there are known skill shortages (for example, financial skills, or skills in electronic engineering in a telecommunications enterprise) or where there is evidence of difficulty in recruitment or high levels of out-migration, HIV/AIDS, or other factors.

Supply forecasts will be informed by the skills assessments component of the skills audit. Forecasts will draw on information such as:

- Analyses of local or regional employment service (labor exchange) data, job advertisements, wage rates, and interviews with other enterprises.
- National- or state-level labor force surveys and statistics.
- Data on supply restrictions arising from legislation, collective bargaining agreements (job demarcation, work force numbers) and union membership.
- Analysis of the hiring practices of other relevant private sector employers.
- Relative pay scales of public sector and private sector employers.
- The availability of in-house staff capable of being retrained. If there is uncertainty, an internal advertisement for "expressions of interest" can determine the likely response and caliber of the applicants.

Ratio analysis can improve managers' understandings of the source of overstaffing and the differences between operational units.

To facilitate any subsequent downsizing, these supply forecasts should be matched against categories of workers (grade, level, function, and cohort) to identify any group(s) that should or should not be selected for downsizing.

WHO SHOULD DO THE ASSESSMENTS?

Who should undertake the tasks of staff auditing, benchmarking, and work force analysis? This section considers the implementing agency's options in undertaking those tasks.

Commonly, the work can be done by:

- In-house staff from the enterprise.
- Other government advisers. Some governments have well-established staffing and planning units that undertake staffing assessments of both government departments and state-owned enterprises.
- External consultants, either from the private sector or from management training and similar institutions that provide consulting services.

In large infrastructure organizations, labor productivity reviews can build on benchmark data.

Table 3.5 summarizes the strengths and weaknesses of each group. Particularly where the quality of data is poor, both data collection and analysis can be demanding of time and expertise. In such circumstances a combination of resources, such as in-house staff and consultants, may be the best option.

It may be difficult for the implementing agency to find expertise within government to conduct fully objective staff assessments. This is particularly the case where staffing levels in the enterprise are based on old (public sector) standards and norms and do not take account of the impact of new technologies and work practices, or where there has

Pilot programs that test contracting-out arrangements can reveal the potential to improve labor productivity.

Table 3.5: Pros and Cons of In-house and External Consultants

Source of expertise	Pros	Cons
In-house team from PPI enterprise	• Has good access to data and individuals • Has good understanding of the business and the sector	• May be biased or lack independence • May be reluctant to make recommendations that risk careers of colleagues • May lack availability or sufficient time to conduct the work in-house • May lack skills if in-house human resources function has been administrative rather than strategic
Internal government advisers	• If linked to strong reforming central unit (e.g., office of the president or prime minister), may have strong authority • Bring understanding of detailed problems that arise in other government departments or state-owned enterprises	• May lack authority (look for evidence in the impact of previous reports) • May have limited international experience
External consultants	• Are independent • Can transfer experience of the effects in other enterprises and organizations that have introduced private participation nationally or internationally • May be specialists in the field of work force assessments • May have methodologies for conducting staff audits • Can provide specific training (e.g., in setting up a benchmarking program)	• Reluctant enterprise managers can block access to data • Will be more costly • National consultants may lack knowledge of sector reforms outside the country • International consultants may lack local understanding

been little other experience with the improvements in labor productivity that usually follow private participation.

External consultants can be one source of expertise although their costs may be higher than in-house and government resources. Even so, investment in high-quality staffing assessments is likely to be worthwhile. The assessments will help the implementing agency when consulting and negotiating with workers and unions. They will also form part of the overall due-diligence assessment for the PPI transaction. The issue therefore is not so much one of cost but of providing sufficiently accurate and reliable information to enable all parties—government and PPI investor—to properly assess the labor issues related to the transaction.

Whether the work is done using government or private sector resources, the terms of reference will be the same and should aim to gather enough information to meet the objectives above. The Toolkit CD-ROM provides terms of reference for a scoping study.

Terms of reference for consultants to undertake a staff scoping study.

Tools (on the CD-ROM)

Model terms of reference for a scoping study (staff audits, benchmarking, work force analysis)

Table of information sources for international benchmarking

Additional Material (on the CD-ROM)

Estache, Antonio, Jose Antonio Schmitt de Azevedo, and Evelyn Sydenstricker. 2000. "Labor Redundancy, Retraining and Outplacement during Privatization: The Experience of Brazil's Federal Railway." Policy Research Working Paper WPS2460. World Bank, Washington, D.C.

Tynan, Nicola, and William Kingdom. 2002. "A Water Scorecard." Viewpoint Note 242. World Bank, Washington, D.C.

Web Sites

Bureau of Labor Statistics, United States: http://www.bls.gov/. (This site provides public access to a wide range of labor statistics and international comparisons.)

International Telecommunications Union (ITU): www.itu.int. (The ITU Telecommunications Indicators Database provides data sets on performance measures of telecommunications operators worldwide, including staffing.)

World Bank "Shrinking Smartly": www.worldbank.org/research/projects/downsize/. (This site is a clearinghouse for researchers, development practitioners, and government officials concerned about the difficulties encountered in downsizing a large public sector.)

Other Material and Sources

Bartram, Sharon, and Brenda Gibson. 1997. *Training Needs Analysis: A Resource for Analyzing Training Needs, Selecting Training Strategies and Developing Training Plans*. Gower, Aldershot. (A manual on training needs analysis with guidance notes and 22 example formats and instruments.)

Burke, Ronald J., and Cary L. Cooper. 2000. *The Organization in Crisis: Downsizing, Restructuring and Privatization*. Oxford, U.K.: Blackwell Publishers Ltd. (This is a collection of articles on organizational change in industrial countries, including impacts on workers and the organization. The main audience comprises organizational development specialists and researchers.)

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