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WORKFORCE PLANNING AND DEVELOPMENT

Workforce planning, sometimes called strategic human resource management, is an explicit process for systemically and routinely comparing information on the availability of future employee skills (supply) with the projected needs (demand) of the organization.

Successful workforce planning helps the organization carry out its mission and introduce policies for improving the quality of the workforce.

This report will guide line managers and human resource practitioners in the public sector in designing or evaluating their own workforce planning and development efforts. It defines the workforce planning process in general terms, and then describes how it has been implemented in two divisions in Portland, Oregon: emergency dispatch and the water utility. Sample planning questions and forms are included.



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Workforce Planning and Development

This report was prepared by Lois Martin Bronfman, Ph.D., workforce planning analyst for the bureau of human resources, city of Portland, Oregon, with the assistance of Tony Tasca, Ph.D., Skopos Consulting, and under the supervision of David Taylor, director of training and development of the Portland bureau of human resources. The authors wish to thank the many managers and human resource analysts in the city of Portland, especially the water bureau, who shared their experiences and have guided us in defining the issues for discussion in this report.

In fiscal year 1996-97, the city council of Portland allocated budget funds for a workforce planning and development project. The purpose of this project was to introduce new planning tools and development strategies to ensure a skilled and productive workforce. Factors contributing to the need for such a project were 1) perceived changes in work processes, 2) increased demands for service, 3) fiscal constraints, and 4) the age, skills, and experience of the workforce. One full-time employee under the supervision of the training and development director in the city's bureau of human resources staffed the project.

Three fundamental values underlay the workforce planning and development proposal. One is that the skills, knowledge, and abilities of workers are inherently linked to productivity and quality service, and the other is that human resources (i.e., current and future employees) are investments, not expenditures, for a business. Given this view, the goal of the project was to provide a strategic approach to human resource management that linked management goals and objectives directly to policies and practices for managing people. Hence, major objectives of the project were to

- Educate and promote within the bureaus and the central bureau of human resources the tools that facilitate strategic human resource planning.
- Identify current and long-term human resource needs for the city.
- Develop strategies to transition the current workforce to fill these needs.
- Convene a city-wide task force to develop a strategic plan for workforce planning and development.
- Rally the community around the concept that human resources are an investment, not an expenditure.

- Promote strategies to enhance opportunities for current employees to grow with the organization's changing workforce needs.

These goals and objectives were ambitious for the city with its relatively large workforce (over 5,000 permanent employees and 600 to 1,000 contingency workers), 32 semi-autonomous bureaus, and a highly decentralized human resources system. While the challenges to implementation have been many—not the least of which was gaining a common understanding of the concept of workforce planning—two years of work on the project have also yielded many lessons. We have used these lessons to develop the following report.

OVERVIEW

Like private sector businesses, public agencies are experiencing change both in the skills required to do the work and in the availability and characteristics of workers. For the city of Portland, technological advances in work processes, private sector competition, an aging incumbent workforce, and government regulations drive some of these changes.¹

These changes are occurring concurrently with public demands to improve service delivery—and to do so with less money—and private sector interest in competing for service delivery. For each bureau, the mix of these variables is different and the impact on the work and workers uncertain. Some bureaus are facing heavy retirements while others are not. Some bureaus are threatened by private sector offers to privatize their functions; others are simply experiencing increased demands for productivity. And all bureaus need to respond to the impacts of rapid technological change on their work and workers.

Workforce planning is one way to deal with change and the uncertainty it brings. Increased productivity, improved service delivery, and competi-

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Definition

Workforce planning is an explicit process for systematically and routinely comparing information on the availability of future skills (supply) with the projected needs (demand) of the organization. Successful workforce planning helps the organization meet its multiple objectives. Workforce planning is sometimes called strategic human resource management. Workforce planning is linked to workforce development in that it provides the basis for defining policies in the full range of human resources strategies that can be used to develop the quality of the workforce.

Workforce planning: as old as the pyramids

One of the theories about the construction of the pyramids is that the Egyptian rulers relied on agricultural workers to construct the pyramids during the seasonal flooding of the fields. Mark Lehner and Zahi Hawass, egyptologists, provide evidence that a skeleton crew of workers labored on the pyramids year round. But during the late summer and early autumn months, when the Nile inundated the fields, teams of farm workers rotated through the construction site. These farmers and local villagers were not slaves but came to work for their god kings, to build monuments to the hereafter and ensure their own afterlife.

Source: PBS Online, "Nova" (March 1999), www.pbs.org/wgbh/nova/pyramid.

tive advantage are the ultimate goals to be achieved through successful planning.

Predicting Future Workforce Needs

The concept of workforce planning is relatively simple. Workforce planning involves developing formal planning strategies that allow you, as managers, to know what you need in the future in the area of skills and people, and to use this information to develop appropriate workforce strategies to meet these needs.

The objectives of workforce planning are to have the right types or kind of skills

- At the right level or degree
- In the needed amount or number
- At the right time
- In the right places
- Performing the right activities.

Clearly, some important questions need to be raised and answered if you are to meet these objectives. What time frame is appropriate? How many workers is the right number of workers for a specific task? Can't this process be done differently?

The workforce planning process provides the opportunity to address these questions and many others. (See Appendix A for questions generated by managers from the Portland water bureau meeting in a focus group. Not all questions will be answered within a workforce planning process, but they should at least be on the table.)

Managing Human Resources Strategically

Any organization that employs people to produce a product or provide a service engages in some form of workforce planning. However, such planning is often implicit, short-term, and reactive, with the process primarily designed to ensure that the legal requirements for employment are met. Workforce planning is distinguished from ordinary human resource management in that it explicitly

- Focuses on skills, not individuals
- Links human resource needs to business goals, objectives, and values
- Relies on quantitative analyses of trends
- Focuses on defining futures
- Is proactive rather than reactive
- Is on-going.

Focusing on Skills, not Numbers

"In postindustrial societies...without relevant human capital, productivity does not and cannot occur, even though people may be fully employed in an energetic performance of tasks, duties, and responsibilities."²

Increasingly, local government jobs, as with most industries, require workers to possess well-defined sets of knowledge, abilities, or skills in order to ensure greater productivity. This proposition is true whether we are speaking about entry level laborers, police officers, accountants, planners, or senior administration specialists. Compounding the problem is the rapidity with which skill requirements are changing from year to year. For this reason, workforce planning focuses on the work of the organization, and the skills required to get the work done now and in the future.

This perspective on human resources requires a shift in focus for many human resource managers whose time is spent hiring, processing, managing, or letting go individual employees; and doing so in a way that addresses immediate skill needs, is based on fair practices, or protects the firm or business from being sued. Certainly, such tasks remain an important function of any human resource department.

Workforce planning, however, requires that managers also focus on skill groups, critical skills, or knowledge in the organization, and ask questions about future changes in skill requirements and availability of these skills. The answers to these questions help identify “skill gaps.” In practice, then, the human resource specialists first ask such questions as “will this job exist in the future, what will it be like, and do I need to fill this position?” before answering the question “how will I fill this job?”

Defining Alternative Strategies

Most human resource managers would argue that there is a link, however informal, between the existing human resource strategies for recruitment, selection, and development and the stated goals and objectives of the organization. Workforce planning asks that this connection be made formal. One of the ways in which this task is accomplished is by defining as explicitly as possible what is out there on the horizon that may affect how the business is run and by translating this information into alternative workforce strategies to meet business goals, objectives, and values. The alternative scenarios are used to answer the following questions:

- Do you have the skills/people to achieve your objectives over the next two years, five years, etc.?
- Are the skills/people truly aligned with the needs of the organization?
- Are there different workforce strategies to accomplish the same goals and objectives?
- How do different workforce strategies affect outcomes?

The methods for exploring these futures can be diverse, ranging from informal techniques such as expert assessment to formal modeling; however, all rely on some mechanism for assessment and integration of data. You will need as much objective information as you can gather to help define both the need for and the availability of skills over time.

Because uncertainty is the rule rather than the exception, development of alternative scenarios is an essential, additional activity. Finally, just as scenarios are important for developing a perspective on change, so benchmarks and ratios are useful tools for measuring the success of your organization at meeting its goals.

Gathering Information

The planning process is designed to help you and the decision makers in your organization focus on the workforce strategies that are available. The planning process requires the organization to bring all relevant information “to the table.” If important information is ignored or left out, projections will not

Modern workforce planning

As it is described here, workforce planning had its origins in the 1960s when computers made the process of modeling relatively complex systems much easier. For example, workforce planning is routinely used to model the deployment of military forces. However, industry generally ignored this tool for a long time. The value of workforce planning became more obvious after indiscriminate downsizing in the 1980s left many companies with smaller workforces lacking the skill sets necessary to improve productivity. Public agencies have recently looked to this tool to help address change (e.g., retirements, technology) and to meet increased demands for efficiencies.

be particularly accurate and the strategies developed will not be useful. Some of the most important questions to answer in gathering this information are

- What factors are affecting the demand for the services or products of your organization?
- What new technologies exist that could change how the service or product is provided?
- What are your current incumbent workforce trends: e.g., rates of retirements and turnover, and age?
- What external workforce trends will affect your labor supply?
- What are the implicit and explicit values and rules of the organization that structure human resource decisions?

When the dust clears and your organization has begun to define its possible futures and the areas in which “skill gaps” may exist, the process of making basic choices as to whether to make (train), buy (recruit), outplace (layoff or sell off), or re-deploy (transfer and retrain) workers begins. Virtually all areas of human resource management need to be taken into account.

THE WORKFORCE PLANNING PROCESS

Managers and human resource professionals often begin asking questions about workforce planning with some skill gaps already tentatively identified, i.e., there are some identifiable changes in who is or will be doing the work or in how work is done. For example, in the city of Portland, analysts in several bureaus see the need for more planning because of the anticipated retirement of a large number of employees within their bureaus. They are interested in understanding the magnitude of the problem, and in identifying who will retire and when. These are good questions but their answers are not necessar-

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The case for workforce planning

Paul Longanback, of the Federal Aviation Administration, U.S. Department of Transportation, reviewed the benefits of workforce planning at a recent workforce planning conference for public agencies:

The organization benefits by

- Generating data to make strategic plans
- Involving stakeholders in defining performance in “people” terms
- Improving the likelihood of realizing a true return on human capital investments.

The employees benefit by

- Partnering to define the future
- Receiving information on skills, knowledge, and abilities needed in the future
- Participating in developing a plan for the organization’s success.

The stakeholders benefit because

- The organization commits to a clear direction for people, issues, and programs
- The organization completes the strategic analysis required to make sound investments in human capital to achieve the desired performance.

Source: Workforce Planning for Government Agencies, conference, March 16-17, 1999, Vienna, Virginia.

ily all that the organization should know in order to fully address the changes that the organization may experience.

By initiating more formal workforce planning, you are building on what you are already doing. The kind of workforce planning described below should give you and your managers much better information about what the future will look like, what the organization’s needs will be, and how best to meet these needs.

Anticipating Future Needs: Gap Analysis

The major objective of workforce planning is to identify future discrepancies (gaps) between skills required to get the work done productively and efficiently, given the business objectives of the organization, and the skills that will be available in the future. As manager, you want to be able to anticipate these discrepancies in order to plan and implement strategies that will eliminate or mitigate their effects. The planning methodology to identify these gaps involves a number of analytical steps and requires the use of both quantitative and qualitative information. A description of the analytical process follows. In a later section, we will address the human resource issues related to the planning process.

At the simplest level the process for analyzing skill gaps involves

- Agreeing on goals, objectives, and interests of the organization
- Defining skill groups
- Identifying future demand for skills
- Identifying future supply of skills
- Comparing demand with supply
- Identifying the skill “gaps,” i.e., those skills for which the projected supply does not equal the demand and qualitative changes expected within a particular skill group.

Beyond this simple set of steps, the process of data collection, analysis, and assessment can be considerably more elaborate depending on the scope of the analysis, the size of the organization, and the nature of the competitive environment in which the organization exists.

Begin at the beginning: agree on interests, goals, and objectives of the organization. Sometimes organizations assume that everyone is in agreement as to the interests, goals, and objectives of an organization. The workforce planning process does not make this assumption. Managers and decision makers begin the planning process by revisiting these discussions, clarifying their interests, and redefining what it is that the organization is trying to achieve through planning.³

These discussions often illuminate differences of perspective within the organization. For example, everyone may agree that the organization should be competitive. One view, however, may hold that the best approach is to improve the quality of service, while another view is that the organization should become more efficient. Another view may be that the agency is not a competitor in the market sense but rather a “steward” of community resources (e.g., water resources). The answers that managers arrive at help to shape the workforce planning process. They are essential for assessing future needs, developing strategies to meet these needs, and evaluating the effectiveness of these strategies.

Defining skill groups: as they exist now and as they may exist in the future. Organizations are composed of people who do the work of the organization, that is, they perform a set of tasks and activities that produce the goods or services that are the reasons for the organization’s existence. One of the first tasks in workforce planning is to gather the information that describes current core skill requirements and future job requirements that are necessary to perform the work. The task is to identify skill sets and then gather information on current and future skill requirements.

Initial identification of skill sets. A review of the organizational chart should suggest how the jobs can be

clustered into distinct skill sets. A consultant, an in-house committee, or a human resource specialist can do this task.

Once identified, each skill set is arranged hierarchically, from entry-level to senior level, with the purpose of further organizing the skill sets into specific job families. Job families are organized around a functional or technical unifying principle, e.g., accounting or plant operations. The total skills in the job families should represent over 90 percent of the work in the organization.

The analyst excludes senior managers and jobs that have only one person from the analysis during this quantitative phase, as they are usually not critical to the performance of the bulk of the work of the organization. This group becomes more important when the organization addresses more qualitative issues of ensuring continuity of performance over time.

Some organizations will have many different identifiable skill sets while others will have relatively few. For example, an informal review of the 30 or so different job classifications at Portland's bureau of emergency service suggests approximately 15 skills sets that in turn can be reduced to 5 or 6 skill families (e.g., communications, information services, human resources, clerical, and accounting). On the other hand, the study of the water bureau identified 100 job classifications that could be organized into 75 specific skill areas and reduced to 19 skill families.⁴

Acquiring information as to current and future skill requirements. The next step in the process requires acquiring information about the actual set of skills required to do the jobs. Workforce planning assumes that workers know what skills are required to do the work. As a consequence, the process often includes interviewing workers from the different skill sets in both the entry and advanced positions and asking them to describe the skills required to do the job now and in the future. (See Appendix B for an example of a form used by the Portland water bureau to gather this information.) This information is supplemented with information from line managers about anticipated technological changes or responsibility changes, and with industry-wide descriptions and standards that define many skill areas and indicate future requirements.

In the analysis process, the information gathered is used to reassess the original sets of identified skills. The new skill sets then become the organizing units for data that define the alternative scenarios and for identifying skill gaps when linked to information on future demand.

Developing an estimate of future demand. At first glance the process of estimating future demand seems straightforward. You know what you have

Numbers aren't everything

The workforce planning process helps identify the type and quantity of skills that are required now and over time. At the same time, the process also leads to information about the *readiness* of existing workers to meet current skill requirements. For example, the organization may have the required ten accountants with basic accounting skills; however, the skills requirements for the job may have changed (e.g., because of new accounting software or new regulations). In this example, the people are available but not fully deployable. The question for the organization is how to make the workers ready. This is a workforce development issue for which there are a number of solutions.

now in terms of skill requirements and you project these into the future given some assumptions about changes in service area or demand for your products. In other words you generate a "business as usual" scenario for some future date.

If, however, your organization wants to ensure that it will be more productive, more efficient, and, where appropriate, more competitive, you should also generate "improvement in business" scenarios. These scenarios are built using information that would change the mix of skills required to do the work. For example, the future demand for skills could change qualitatively and quantitatively if the organization is re-engineering some of its work processes, contracting out some tasks, or redirecting its strategic goals and objectives. Benchmarks and ratios that clarify staffing relationships (e.g., number of draftsman per engineer) in an efficient environment help measure productivity gains given different demand scenarios. (See sidebar on benchmarking.)

Thus the relatively simple instruction to develop a demand scenario turns into a more detailed list of activities for developing alternative future staffing scenarios. These activities include

- Assessing factors affecting demand for specific skills over time: e.g., strategic goals and objectives, changing service requirements or product demand, adoption of new technology
- Detailing specific changes in work that will result in addition of skills, the elimination of skills, or other workforce requirements over time
- Selecting measures for evaluating staffing productivity and efficiency, e.g., ratio of employees to revenue dollars
- Developing alternative demand scenarios.

Developing an estimate of future supply. You also need to project the future supply of skills available to meet your projected demand by

Benchmarking

In workforce planning, benchmarks are used to measure relative productivity and efficiency of the human resources, or to compare human resource management experience. The benchmarks provide a means by which the organization can evaluate the impact of change strategies. Benchmarks can be associated with a specific industry category, a geographic region, and/or skill categories. The following examples illustrate the variety of possible benchmarks that are useful in workforce planning.

A productivity scorecard compares

- Output per employee with employee output in other organizations producing the same type of output
- Total salary costs to produce a product or service with salary costs in other organizations producing the same type of product or service
- Total hours to produce an output in one organization with another in the same industry.

An experience scorecard compares

- Voluntary terminations
- Involuntary terminations
- Employee attitude norms
- Customer satisfaction indices
- Direct versus indirect ratios
- Accident rates
- Scrap rates, etc.

Organizations can use benchmark information to determine their relative position on any given measure vis-a-vis competitors (internal or external). This

comparison often will show whether the organization is doing better or worse, on the average, than others on a given measure.

Merely comparing oneself against a statistical average can be limiting. The better use of benchmarking data is to compare oneself against better performing organizations or using the average as a mere reference point to establish “excellence” goals as opposed to “me-too” goals.

The main challenge in benchmarking is to select meaningful measures—global measures that focus on the relationship between the inputs (resources) and the outputs (results), or operational measures that focus on the relationship between outputs (results) and throughputs (the work).

Operational measures can be misleading. For example, comparing how many hours of training one organization offers versus how many hours others offer can be meaningless since the measure does not indicate how effective the training is or even whether it is needed. To avoid this trap, focus on end-results (at the product or customer level) as opposed to intervening results (more hours of training).

Benchmarking can be a useful tool. It provides managers with feedback regarding the efficacy of their efforts to improve organizational productivity and job satisfaction, and to improve the competitive advantage. If benchmarks are updated annually, the manager can assess changes in performance.

Source: Tony Tasca, Ph.D., Skopos Consulting.

- Taking an inventory of current required skill groups
- Assessing current supply of skills
- Calculating net change and availability of skills over the planning period.

To calculate change over the planning period, you need information concerning

- The number and age of workers
- Internal transfer rules
- Retirement rules
- Turnover rates
- Trends in the broader labor market.

This information is used to define the baseline and to make the assumptions necessary to calculate change. In addition, employee characteristics may need to be included for each skill group (e.g., age, sex, and minority status of the individuals within these groups) in order to analyze the effects of change on representation in each skill category. Modeling

this change is a relatively simple task but becomes more complicated (and may require the assistance of a computer) when there are many skill groups to review.

Identifying the gaps. Identifying gaps begins with data collection and continues throughout the planning process. For example, when you are gathering information from employees on the skills required for their jobs, they might report that because of recent changes they do not currently have the necessary skills. At the same time, the analysis of the supply data might indicate that most of the people in these jobs can retire within six years. What strategies will the organization choose to address these gaps? The answer to this question should depend on the goals and objectives of the organization, its commitment to change, and the managers’ assessment of the impact of different strategies for change.

There are a variety of categories of skill gaps that may be identified:

- Excess skills (skills that the organization will not need or will need less of)

- Deficit skills (additional skills the organization will need)
- Emerging skills (newly defined skill areas)
- Better quality (changes that require upgrading existing skill sets).

Understanding the Numbers

The numerical groups that will be identified by comparing supply with demand will be obvious (e.g., future demand for mechanics will exceed by 20 the projected supply, or there will be an oversupply of 10 engineers in five years). Certainly the data should point to some potential areas of need. Generally, however, the numbers generated in a modeling effort are just a small part of the information helpful in defining future human resource needs and identifying strategies for addressing these needs.

First, data are meaningless unless understood within the context of the organization (e.g., past trends) or in comparison with other organizations of similar purpose.

Second, modeling (formally or informally) is only one tool that the workforce planning process uses for understanding workforce needs. The process also relies on proposing and comparing alternatives, analyzing trends, exercising expert judgment, and management decision-making. All of these strategies contribute to the identification of skill gaps.

Third, models are only as good as the assumptions, rules, and data on which they are built. Part of the planning process is to explicitly state the parameters of the model, challenge them, and present alternative parameters. This process leads to the development of alternative scenarios and the identification of contingencies. The process helps the organization gain consensus as to probable futures and assess alternative strategies. Different scenarios may identify different human resource needs.

Likewise, the process demands that the organization identify and use data about the operation of the workforce system and the characteristics of the workforce. Inadequate data may lead to inappropriate conclusions. The workforce planning process allows the organization to understand the limits of its data and data systems. This information can lead to the development of better systems and improved data.

A strategic approach. Human resource professionals routinely perform “gap analysis” to project recruitment needs for the coming months or even years. Most integrate informal and formal information concerning possible retirements, or increased service or production requirements. This activity is a form of workforce planning. However, it differs from what is described here since its focus is on the short term and on specific positions as opposed to skill groups. A truly strategic workforce planning

Quantitative modeling techniques

The following list of techniques may sound forbidding to the person who does not usually use such tools. However, many individuals who are familiar with statistics or mathematics have the skill competencies to work with these techniques. Drawing on their expertise is critical to the success of your planning effort as you develop more sophisticated quantitative modeling strategies in your planning effort.

Demand forecasting

- Trend/percentage estimates
- Deterministic relationships based upon other corporate/organization variables
- Regression/correlation analysis (simple, multiple, step-wise)
- Time series analysis
- Delhi techniques
- Econometric models

Supply forecasting

- Replacement charts/forward planning
- Markov models
- Renewal models

Integrated models

- Linear programming
- Goal programming
- Network models
- Dynamic programming
- Simulation models

Source: Dan Ward et al., *Human Resource Forecasting and Modeling* (Princeton, NJ: Princeton Academic Press, The Human Resource Planning Society, 1994).

process will integrate the strategic goals and objectives of the organization into the planning process and include all the major skill groups that contribute to the meeting of these strategic goals.

The planning process is far more important than the actual plan.

The task of estimating alternative futures is central to workforce planning. In this respect workforce planning is different from strategic planning. Strategic planning involves making decisions and taking actions today that define where the organization wants to go; the organization attempts to define its impact.

Workforce planning asks the organization to consider alternative futures and determine the relative readiness of the organization to meet the issues,

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problems, and demand of these futures. From this perspective, the planning process is far more important than the actual plan. It is the process that exposes and identifies the variety of factors and variables that affect the availability and readiness of the workforce to handle change and provides the organization with the flexibility necessary to deal with uncertainty.

How far into the future the analysis reaches is a function of the environment to which the organization must be responsive, or in which it must compete. It is also a function of how broadly or narrowly the functional scope of the planning process is defined.

For example, the primary purpose of some workforce planning activities is to determine how many workers with which skills are required during a specific shift to meet customer demand. Future analysis is defined, in this instance, in terms of days or weeks. In other instances, the task may be to maximize the productivity and efficiency of an organization to ensure its competitive position within an industry. Each example requires a different time frame for analysis. Whatever the driving factors, the shorter the planning horizon, the greater the probability of accuracy in terms of predicting the future or anticipating the impact of alternative development strategies.

Tools for analysis. Workforce planning is built on defining as explicitly as possible the future needs of the organization for human resources through the development of skill data, defining alternative scenarios, analysis of trends, and comparison. A variety of analytical tools can be used to assist in the task. Some of these tools are quantitative and some are qualitative. Some situations require the aid of a sophisticated computer model but for other situations, a simple hand calculator will suffice to do the basic calculations. Sometimes in the absence of reliable

numbers, expert judgment is the tool of choice.

The day-to-day activities of human resource data management depend on systems designed primarily to maintain information on employment experience of specific workers (e.g., hire date, job class, compensation) as well as some demographic information necessary to ensure compliance with specific labor laws. In workforce planning, data on the individual are less important than information that describes trends in the supply of skills (e.g., number of employees in specific skill groups, age, and minority status) over the planning period.

You may find that such data are not readily available or are in the head of one human resource analyst. For example, within the city of Portland it is very difficult to acquire basic information on the turnover in a specific skill category unless the bureau maintains its own human resource data system with these capabilities. An important first step in developing the planning process is to develop some strategies to deal with these issues.

Communication. The workforce planning methodology is built on acquiring objective data about the supply and demand for skills in the organization. However, workforce planning is not just a number crunching activity nor is it just another human resource task. At every step in the process, management support combined with involvement of different groups (e.g., line managers, human resource professionals, labor representatives) in the organization is critical to the success of the project. Such involvement facilitates

- Acquisition and analysis of data
- Selection of strategies for change
- Implementation of the strategies
- Evaluation of the impacts of the plan.

Some groups have more responsibilities than others do. Critical to the process of assessing gaps and developing action strategies are the line managers, the individuals whose perspectives are most relevant to the process of analyzing and interpreting the information generated in the process and to the development of action strategies.

Supporting these individuals are the human resource professionals who facilitate the planning process at all stages, help acquire data, lend their expertise to the discussion of the issues, and provide follow-through in the implementation of action strategies. The human resource professional acts as a strategic partner to the working units of the organization as they move toward meeting their strategic goals.

Workforce planning raises concerns and issues relevant to the working lives of employees. When this planning occurs "behind closed doors," the ambiguity may result in misunderstandings and insecurities, as well as resistance to change on the part of employees. On the other hand, involving workers

Managing patrol performance

Some workforce planning focuses on short-term needs in specific skill areas. These models are often used for deployment or staffing of an existing workforce. One interesting example of this type of activity is the "Managing Patrol Performance" computer model adopted by the Portland Police Bureau several years ago. This model optimizes the distribution of patrol cars to meet patrol performance needs in specific geographic areas at specific times of the day. The model, which was purchased by the bureau, has been modified to reflect the experience, needs, and characteristics of the Portland police. For further information, contact Captain Pat Nelson, Portland Police Bureau, 503/823-0091.

in a meaningful way in the planning process can generate good information and perspectives that contribute to understanding issues as well as the development of the organization.

To develop a communication plan, identify the groups in and out of the organization that should have some awareness of the project and assess what they need to know when. For example, in the workforce planning effort of the Portland water bureau, the planning group identified 15 distinct audiences for the information on the workforce planning effort. Their list included

- Management team
- Mid-level managers
- Union leaders
- Labor management teams
- Employees
- Affected workgroups (once data have been processed)
- Skill group interviewees
- Commissioner’s office
- Other members of council
- Bureau of human resources
- Bureau of environmental services
- Public utilities regulatory board
- Wholesale customers.

Finally, workforce planning must be integrated into the mainstream activities of the leaders of the organization. Their leadership and attention is critical to the success of the effort. It is their job to clarify the goals and objectives of the organization, to create an organizational climate that values planning, and to develop the institutional structures that sustain it. Without their support, workforce planning efforts will struggle and probably fail.

Developing an Action Plan

As you work through the planning process, a better understanding of where the organization is now and where its needs to be in the future begins to develop. Quantitative and qualitative information gathered during the planning process clarifies the human resource needs and requirements of your organization over time and in specific skill areas. This information is used to structure a strategic and tactical action plan.

Strategic. Strategic workforce initiatives are the organization’s roadmap for achieving long-range human resource needs and requirements. They address the organization’s position for specific skill groups on

- Retention
- Sourcing (long-term recruitment)

- Outsourcing
- Performance improvement
- Re-deployment.

These are the big issues that need to be revisited routinely by the organization so that it can move toward better service, higher productivity, or greater efficiencies.

Consider the issue of retention. Within the city of Portland, retention is very high for the city as a whole and in specific bureaus. Generally, management and employees value this state of affairs. But individual bureaus in their efforts to achieve greater productivity are questioning some of the rules, assumptions, and practices that define the city’s retention policies. This attention is coming not only from management but also from employees. The workforce planning process puts these issues on the table for discussion in the context of business needs and organizational objectives and workforce strategies such as outsourcing, performance improvement, and re-deployment.

Tactical. Tactical initiatives describe the specific actions that the organization takes to implement its strategic initiatives. These actions are the “nuts and bolts” of day-to-day human resource management. They include

- Outreach efforts
- Selection and recruitment strategies
- Remuneration strategies, e.g., compensation
- Learning and training efforts
- Collective bargaining/employee relations
- Continuity and succession planning
- Outplacement.

Workforce planning makes explicit the connection between the strategic and the tactical initiatives. Once the connection is made between perceived skill gaps and strategic and tactical initiatives, your organization is in a position to develop human resource policies and procedures to meet the goals and objectives of the organization. Equally important, the organization is in a better position to make the budgetary arguments necessary to fund the proposed workforce strategies.

An abundance of literature on human resource management discusses the relative merit of different strategic and tactical human resource approaches. The strength of the workforce planning process is that it draws on the expertise of those who know the business of the organization best—line managers, human resource specialists, the leadership, and employees—to define the appropriate strategies.

Addressing Constraints

A variety of factors—legal, contractual, moral, or cultural—limit the choices that the employer can

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make to address perceived skill gaps. While some of these are hard to change (e.g., acts of Congress), others can be changed to meet the evolving situation. On occasion, both formal and informal rules of operation are treated as “sacred cows” even though they do not serve the organization well. As the organization begins to define the actions to be taken, it should review and assess the constraints that facilitate or preclude certain efforts. Most important, when there is a perceived need for change, the organization should involve in the planning discussions those who have an interest in the change and who are necessary to facilitate the change.

Implementation and Evaluation

Implementation begins with good communication about what is being done and why, indicating the objectives as well as the assumptions, data, and assessments that led to the particular strategies chosen. This information will clarify for the organization, employees, and stakeholders what is being done and what needs to be done.

Portland has both centralized and decentralized human resource functions. In organizations of this nature, action plans shared between different levels of the organization may contribute to the development of better communication, greater cooperation and support, and more effective human resource policies. When shared with other stakeholders and employees, action plans facilitate the discussion of critical factors that must be addressed for successful implementation. When information is shared, it contributes to improved understanding of the strategic issues that drive the workforce decisions of specific units.

Implementation occurs at different stages in the planning process. For example, if early in the planning effort, the decision is made to outsource an activity, planning for this activity should begin right away because the organization will need time to identify issues, assess cost savings, and (if necessary) put in place the process for contracting out the function. On the other hand, your organization may decide that it needs to focus initially in its planning efforts on a specific service or production area while at the same time reviewing the overall needs of the organization.

Whenever specific actions are taken to address perceived skill gaps, evaluation of the success of these strategies should begin also. This directive holds whether you are engaging in long-range sourcing programs (e.g., police corps), streamlining the selection process, developing new training programs, or implementing early retirement programs. Some of the questions that you may wish to answer are

- Did we meet the original criteria for success?
- Are we moving in the right direction?

- Did we learn anything that will help us do our jobs better?
- Are there changes in workforce characteristics or trends (e.g., improved retention)?

As information is gathered, the organization can reassess its approach. When this occurs, workforce planning becomes a dynamic perspective on human resource management that should lead to service improvement, increased productivity, and greater efficiencies.

CONTINUITY PLANNING

One of the most important reasons to use workforce planning is to make sure that the loss of key employees does not disrupt operations or interfere with service delivery. Two strategies in particular can be used to anticipate and ease transitions in the workplace: succession planning and transferring or capturing critical knowledge.

The fact is, all employees are going to retire someday, have an accident, find a better job, or die. For organizations, these are relatively routine events, if sometimes painful for the individuals and their coworkers. There are instances, however, when the loss of an individual or a group of individuals can be disruptive to the organization and result in a decline in productivity or in the quality of service.

Historically, human resource analysts focused on the issues and problems of identifying replacements for top executives and the strategies for training and grooming them. In recent years, however, there is growing recognition among human resource managers that continuity of skills and expertise is important at all levels of the organization. The looming retirements of baby boomers, increased competition for the specialized skills of the technological age, and changing characteristics of the supply of labor have alerted analysts to the potential risk of losing veteran workers. In all city and county governments, there are individuals whose skills, expertise, or experience are critical to the organization, and there are skill groups that badly need replenishment or support.

A long-term effort that an organization can implement to ensure continuity is strategic workforce planning as it has been discussed in this report. As we have seen, workforce planning identifies and quantifies emerging skill gaps across skill categories. For example, analysis of workforce changes in Portland’s water bureau indicates that different people will hold over 50 percent of the jobs in the next five years. While most of these people will be promoted from within, the organization will experience considerable “churning.”

Addressing these areas supports the long-term ability of an organization to sustain and increase its level of productivity and service. Planning gives the

organization time to pursue a variety of workforce development strategies (e.g., long-term recruitment strategies, and apprenticeship programs) that address gaps in all areas. Planning also provides the opportunities to explore the effectiveness of current strategies in the areas of recruitment, selection, or retention.

Succession Planning

Like other employees, executives are reluctant to let anyone know when they are going to leave an organization, but the organization should still take steps to protect itself from unexpected gaps in leadership.

Analysis of past trends in leadership recruitment can be an important first step in the process of identifying strategies that will be helpful. Within the city of Portland, leaders in many bureaus are promoted from within and in some cases, move across bureaus. Clearly, such a pattern promotes one kind of continuity. On the other hand, a bureau may want to ask also if such continuity also sustains or promotes productivity or higher levels of service. The answer to this question will point to specific action strategies. For example, if the answer is “yes,” then the organization needs mechanisms (e.g., training programs) for preparing current workers to take on leadership positions. If, on the other hand, outside recruitment is encouraged, then the organization may want to ensure that it has strategies for capturing some of the institutional knowledge that explains why things happen the way they do.

Transferring and Capturing Critical Knowledge

The organization should also attempt to identify individuals who have critical knowledge, skill, or experience within the organization and develop strategies for capturing or transferring the information. Below are listed suggested criteria for identifying jobs where knowledge, skills, or experience are “critical” to the operation of the organization, and for identifying individuals whose knowledge or experience needs to be “captured” and transferred to ensure continuity of operations.⁵

Criteria for identifying “critical jobs”

- Normal operations will be hindered severely if the individual is not available.
- Skills of a specific individual are needed in an emergency.

Criteria for identifying individuals whose knowledge or experience needs to be “captured” to ensure continuity of operations

- The employee possesses undocumented information that is necessary for future operations.

- The employee possesses unique training in or has specialized knowledge or experience of some aspect of operations.
- The employee is in a job family where a high percentage of retirements are imminent.

Once the specific skills, experience, or knowledge have been identified in the different work units, the task is to develop mechanisms for capturing and transferring the information. Below are listed some of the options.

Ways to capture and transfer information or skills

- Document information in a permanent, computerized database
- Develop procedure manuals and quick references
- Create opportunities for job-shadowing or double filling of position prior to a person’s departure
- Develop training programs to increase the number of individuals with specialized skills
- Maintain open files documenting policy decisions of the organization
- Develop work-based orientation programs for new employees
- Conduct exit interviews.

The recent efforts of several Portland bureaus to convert critical information into a geographic information system (GIS) are excellent examples of strategies to ensure continuity in the operations of the organization while increasing efficiency. Prior to the use of GIS technology, much mapping information and history related to service in different areas of the community was in a paper format and not easily accessible to the field worker. As a consequence, many individual field workers carried “critical information” about infrastructure in their heads. The efficiency of a field worker was often dependent on the extent of this “specialized knowledge.” The GIS captures this information and makes it readily available to all field workers at the push of a button.

As with other matters of interest to the workforce, communication and engagement of workers in the task of identifying “critical skills” and important information is recommended. Such engagement ensures that decision makers have an accurate assessment of the issues and areas that need to be addressed. In addition, workers develop a broader understanding of the relationship and importance of their skills, knowledge, and experience to the operations of the organization. The following chart provides an example of critical jobs and individuals identified and ideas proposed to ensure continuity.

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WORKFORCE PLANNING IN EMERGENCY SERVICES

This case study was written by Judy Olivier, program manager for workforce planning and development, and Lois Martin Bronfman.

The Bureau of Emergency Communications (BOEC) of the city of Portland provides police, fire, and medical emergency call services for the local governments and population of Multnomah, County, Oregon. Its has approximately 140 employees, of whom 80 are dispatchers. The bureau receives approximately one million calls a year. The BOEC has recently been confronted with an emerging staffing crisis for dispatchers that has a variety of causes.

First, a significant percentage of their supervisory and coaching staff are eligible for retirement at the same time—at least half the supervisors are eligible for retirement within four years. Second, there is an emerging shortage of workers in Portland. BOEC has positioned itself well in its industry market by offering an above average training wage combined with excellent government benefits. In the past, many people applied every time a dispatcher position was advertised. However, the region is now in a period of full employment, and the number of interested applicants has dwindled as potential employees find work at comparable wages in less emotionally demanding industries.

Finally, many BOEC trainees drop out before completing the difficult, year-long training program. In the mid 1990s, BOEC was losing 60 to 80 percent

of its basic academy. Each failure was extremely costly to the bureau and disruptive to other trainees and employees.

After several efforts to redesign the selection process, management hired a staff person with experience in workforce development to implement a workforce planning process. Present and future needs were assessed using a relatively straightforward, “low tech” approach of reviewing some trend data on supply, recruitment, retention, and retirement. The task of assessing future needs was relatively easy (compared with other bureaus or businesses) because the center has only one primary skill category.

Strategies to address the various elements contributing to the staffing crisis were defined and implemented. They are described below.

First, a task analysis is underway to determine the skills and abilities required by critical positions such as a 9-1-1 supervisor and a dispatch coach. Simultaneously, a skills and interest inventory is being developed for distribution to all employees. The outcome of these activities should provide sufficient data to build promotional development plans that target the center’s future needs and also consider current employee goals.

Second, the human resource staff is identifying other industries that pay wages and require skills comparable to those of the retiring supervisors and coaches. Many of the retiring employees are at an age where they want to remain employed but in a less demanding position. By assisting this group in out-placement efforts, the organization will demon-

Worksheet Example: Critical Jobs and Position

Critical Jobs and Individuals with Critical and Unique Skills	Ideas Proposed to Assure Skills Are Available When Needed (Skills Transition Plan)
Water service mechanics—generalists who can work in variety of areas. Main breaks and new services are especially critical. Problem: pending retirements.	<ol style="list-style-type: none"> 1. Training upgrades 2. Develop training program as feeder and support 3. Dedicated training trucks and special incentives for trainers
Meter shop—Joe Smith and his procedures for large meter calibration	<ol style="list-style-type: none"> 1. Written procedures documenting the work 2. Train replacement staff 3. Videotape work on specific types of meters
Tony Tiger—expertise in decorative fountains, large taps, core drilling and hydro-stops	<ol style="list-style-type: none"> 1. Develop procedure manuals 2. Videotape special procedures
Large valve repair—no one currently has the skill because of retirements	<ol style="list-style-type: none"> 1. Bring back retiree to train replacement
Line locators—retirements pending	<ol style="list-style-type: none"> 1. Double fill for six months or training

strate its interest in its employees and adds to the overall advantage in working at BOEC.

Third, to remain competitive in the labor market while presenting a realistic picture of the dispatch job, an aggressive recruitment plan was developed, which is yielding excellent results. BOEC advertised open positions in all the community and minority newspapers, attended large job fairs, staffed booths at small community events, and generally increased its public image. Today's public is much more informed about the demands and rewards of the 9-1-1 dispatcher.

Fourth, BOEC also made its application process available online at the city's Web site, and takes portions of its unique testing process into the community so that interested applicants can practice required skills before each recruitment. Recruitment campaigns were limited to one spring and one fall campaign in contrast to an "open recruitment" method. This change helps control the number of trainees in the basic academy and lets interested applicants know when the job opens so they can prepare for the opportunity.

Fifth, more informed about the demands of the job, each applicant begins his or her career at BOEC better prepared for the work—and this factor may be contributing to a decline in the trainee failure rate. (Currently the attrition rate is comparable to other city bureaus.) The curriculum of the basic academy was also redesigned to include simulation, observation, and other effective adult learning methodologies.

Sixth, the general work environment at BOEC was also addressed. Health and wellness programs such as critical incident stress management training and peer support counseling were developed. The onsite fitness center was improved and a health newsletter is distributed quarterly. All efforts help to raise the awareness of wellness among the center's employees, which adds to the competitive quality of employment at BOEC.

All of these efforts help to address the need for new, well-trained workers. Long-range plans to increase the supply of qualified applicants include linking up with other agencies and colleges in the region.

WORKFORCE PLANNING IN THE BUREAU OF WATER WORKS

This case study was written by Susan Bailey, program manager for workforce planning and development, and Lois Martin Bronfman.

Portland's Bureau of Water Works is a rate-financed, city-owned utility. The bureau operates the water supply system that delivers drinking water to more than 840,000 people who live in the Portland metropolitan region.

The bureau administration is progressive and

innovative, and it has considerably greater latitude than other city bureaus in spending its resources because of its independent revenue base

Origin of Workforce Planning

In the summer of 1995, the bureau held a strategic issues conference for its managers. Among the issues discussed was the need for long-term workforce planning and development due to the projected number of retirements over the next 10 years and the changing nature of work within the bureau resulting from new technology and changing regulations. Specifically, the strategic document that resulted from the conference called for forecasting and analyzing future needs and for the development of a workforce strategy to address the needs.

The director of the bureau and his management team initiated the workforce planning project. This group decided to find outside consultants to facilitate the development of the process with the aim of establishing over several years the in-house capabilities necessary to sustain a workforce planning process. In addition, the bureau hired on a temporary basis an experienced staff person to act as a liaison between the bureau and the consultants and to facilitate communication. In September of 1997, the bureau issued a request for proposals for its workforce planning project. The award was given to two consultants who offered not only a strategy for facilitating the planning process that involved workers and managers, but also a computer-supported model with the capability of projecting long-term workforce needs.

From the beginning management made it clear to the consultants and the employees that the workforce planning process should operate with two major assumptions: 1) that the bureau would continue its no layoff policy, and 2) that the bureau would continue to promote a diverse workforce.

The Initial Process

The workforce planning process began with six major steps that provided both quantitative and qualitative information for understanding needs and developing future actions.

Step 1. Developing project support and understanding within the bureau. A project team composed of workers (represented and non-represented) as well as middle managers was recruited. The responsibility of the project team was to develop with a consultant the communication plan for the bureau and to assist in the collection of data from workers on the current and future critical competencies required to do the work of the bureau. In this first step, the consultants also briefed the management team on the project and worked with them to establish critical communication links.

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Implementation of this task was very successful. The advisory committee selected by management consisted of approximately 15 represented and non-represented employees. A representative from the city's bureau of human resources observed the meetings. All regularly attended the monthly meetings organized by the consultants and bureau staff. As a group they developed and implemented a communication plan for the bureau about the project, and then trained for and carried out the assessments of current and future skills for the different skill groups identified by the consultants. In addition, through their questions about the process, they often identified areas of confusion or miscommunication that needed clarification before the process could proceed. Most important, the advisory group promoted the concept of workforce planning within the bureau among the employees.

Step 2. Collecting data to customize the planning model. Bureau management provided a range of materials for the consultants to review on strategic objectives and goals for the bureau; union contracts; city rules governing transfers, layoffs, etc.; and job classification and compensation information. In addition, the consultants brought to the task considerable information and expertise concerning the trends in industry, changing skill requirements, and human resource issues and strategies.

A first step in customizing the model required identifying the list of critical competencies within the bureau. The consultants used three criteria for selection of the list of job categories to include in the model. These three criteria were 1) job categories in which there are many people, 2) job categories in which the skills are changing, and 3) categories that are unique to the bureau. The list of job categories that emerged from this process was then reviewed by the advisory committee and further refined.

The final list of critical competencies provided the basis for forecasting specific changes in the workforce (number, age, etc.) over time. This list would also be used to identify groups of employees to interview about the requirements now and in the future in specific skill areas.

The advisory group spent considerable time discussing which were the critical skill categories. What became clear early in the process was that critical skill areas were not synonymous with job classification. Some critical skill areas included individuals each of whom had a different job title. As the consultant noted, one task for the bureau was to align job classifications with skills. Fortunately, the bureau of human resources for the whole city was just beginning that task.

Step 3. Gathering data relevant to interpreting the output of the model. The advisory team conducted interviews with the groups of employees from the different job classifications. Each group included employees at the entry level and the advanced level

of the classification. Employees were asked to identify 1) knowledge required for the job, 2) skills and responsibilities, 3) certificates or licenses, 4) years of experience required, and 5) educational level, for the present and for the future (see Appendix C). This information was summarized by the consultants into notebooks as an inventory of skills required for the next five years.

In addition to the data on jobs, census data and historical data on workforce demographics were also collected to determine trends. And finally an effort was made to identify business ratios (e.g., revenues to workers, total budget to workers, workers to citizens served) in order to establish the ratios desired by management for evaluation of current and future workforce trends. The management team resisted identifying business ratios that could be used for comparison with other utilities. The team felt that it was difficult to come up with comparable water utilities for comparison. The consultant urged the team in the absence of external comparisons to identify some internal ratios for evaluating change.

Step 4. Determining yearly input and outflow of employees in specific skill areas. The consultant worked closely with the human resource support staff in the bureau to determine yearly input and outflow factors (e.g., present level of staff in each skill category, historical turnover, filled and unfilled positions, etc.) for use in the model. The model relied on relatively limited historical information on flows of employees. It was discovered early in the process that much of the information on recruitment trends and turnover was in the head of one employee in the bureau. In addition, as with many bureaus, positions were deliberately left vacant to provide a buffer in hard fiscal times.

For these reasons, even the apparently simple task of identifying the actual number of real positions was not easy. As the consultant noted, one of the first tasks emerging from this planning process was to improve the human resource data system.

Step 5. Forecasting. Using a computer-generated model, a five-year forecast was developed with summaries of net changes identified. All of the data provided by the bureau on numbers, age, and race of employees were sent to the consultants' office where they were put into the model's database. For this forecast, the assumption made was that business would continue as usual, i.e., revenues would change at about the same rate as service demand, and there would be no major changes in work processes.

A progress report was prepared for the project team and the management team. This report discussed aggregated changes (i.e., total change in number of workers and total turnover within the bureau) as well as reporting on specific changes within specific job categories.

The results of the report were not startling. The total size of the bureau's workforce would under a

“business as usual” scenario change by approximately 50 employees at the end of five years. The projected retirements combined with other separations would result in considerable movement as people changed jobs to fill the emerging vacancies. This “churning” was substantial for the water bureau but relatively small compared to other types of businesses. The report also identified two skill areas within the maintenance section of the bureau for which the projected supply was questionable: utility worker and water service mechanics.

Step 6. Developing preliminary action plan. Using their assumptions about future demand, the management team developed a preliminary action plan to close the perceived gaps. The team chose to focus on two workforce areas: 1) reviewing the future staffing needs and job structure in maintenance; and 2) continuity planning in job areas filled by people with unique and critical skills and knowledge.

The maintenance section of the water bureau was chosen as this was the area in which most of retirements were going to occur and in which the jobs were critical to assuring supply of water to the customers. The team reorganized the maintenance section and gave priority to establishing a water utility worker apprenticeship program to ensure a supply of utility workers. The team also strengthened the water service mechanic apprenticeship program, and provided on-going training to journey-level mechanics.

The team also launched a continuity planning project to put into place strategies for capturing the information from or for providing backup support to those individuals with unique and critical skills and knowledge. Finally, the management team called for an updating of the data to the computer model.

Assessment

The most positive and apparently long-lasting impact of the workforce planning process has been the recognition that workforce planning is appropriate and needed. Overall, the project was successful in focusing the attention of both management and workers on the work and workers of the organization. It began the process of transferring knowledge about skills and knowledge required for specific jobs to others in the organization. In addition, the data gathering process as well as the forecasting of future supply under a “business as usual” scenario was valuable, because the data supported what many managers suspected were emerging issues. The use of quantitative information to better understand human resources was also a valuable exercise.

The process has also received some criticism, however. Some of the participants feel that there is more work to be done. As several have noted, “the retirements are happening and we don’t seem any better prepared than before.” Below are listed some of the issues that have been raised.

- The newly instituted apprenticeship program for utility workers (that was recommended in the preliminary plan) was a late response to problems already apparent. With the new program there are restrictions on hiring journey utility workers—as the bureau waits for the apprentices to finish their training—that have made filling the vacancies difficult.
- The modeling effort restricted its analysis to the “business as usual” scenario. It did not provide much new information. The value of the modeling is to have the opportunity to look at the human resource effects of different scenarios (the “what if” options) for running the business.
- Too little attention was given to what may be changing skill requirements. For example, little attention was given by managers in this initial planning effort to the future effects of the capital improvements identified in the water bureau’s capital improvement plan for the next 20 years. This plan could have been used to define the alternative scenarios.
- Supervisors of work groups were not sufficiently involved in discussions about the meaning of the data and they were not involved in developing future strategies. Communication and involvement of supervisors was limited to gathering data on skill groups.
- Management has yet to demonstrate to workers the value of workforce planning to their working lives. The expectation raised was that there would be some tangible benefits.

While these criticisms are substantial, they also reflect a level of interest that can propel the workforce planning process forward. No one has indicated that workforce planning is “dead.” The concern is how to move it forward and how to accomplish some of the original goals of the planning process.

1. At the beginning of the workforce planning project in the fall of 1996, the bureau of human resources conducted interviews with bureau managers to determine what factors will affect how work will be done in the city, what skills will be required, and who will be available to do it.
2. Eugene McGregor, *Strategic Management of Human Knowledge, Skills, and Abilities: Workforce Decision-Making in the Post-Industrial Era* (San Francisco, CA: Jossey-Bass, 1991), p. 33.
3. In some instances, the process of workforce planning begins with a competitiveness study that assesses the competitive position of an organization with respect to other organizations. These studies often evaluate the performance of the organization using ratios or benchmarks, e.g., revenues to number of workers.
4. Skopos Consulting, “Workforce Planning 1997–2002: A Preliminary Report to the Portland Water Bureau,” January 11, 1998.
5. An advisory group in the Portland water bureau developed this list as part of their workforce planning effort.

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APPENDIX A—WORKFORCE PLANNING QUESTIONS (PORTLAND BUREAU OF WATER WORKS)

The questions listed below are some of the questions generated by the management team of the Portland water bureau at the beginning of their workforce planning process. The questions cover a range of workforce issues and strategies.

How Will Jobs Change?

Questions to be addressed by the consultants

How are the jobs going to change in the future?

- What are the *new* critical skills we will need?
- What are the industry trends that will shape our job changes and the workforce?

What are the gaps between current and future skills?

- How many jobs are there which will have major changes?
- How many employees will be affected by these major changes?

Questions that will involve developing bureau policies, using the data developed by the consultants

What criteria should be used for determining whether to hire for needed skills, contract out, or retrain current employees?

How do we determine which jobs lend themselves to retraining?

What does the “no layoff” policy mean in practice?

What criteria should be used to decide what training should be provided by the bureau, and what training would be better provided by others, such as the community colleges?

What training is the bureau’s responsibility to provide (and pay for); what responsibility should employees take on their own?

Operational questions

How do we fill the skill gaps?

- What are the opportunities for retraining employees whose jobs may disappear?
- In what classifications are there opportunities for cross-training and sharing of responsibilities (“multi-tasking”)?
- How do we identify people who can be cross-trained?

How Will the Numbers Change?

Questions to be addressed by the consultants

Would like accurate forecasting of retirements and attrition by workgroups, job families, and job titles if possible. How can we most accurately know when employees will really retire, not just when they are eligible? Can we add any bureau-specific information that will make the forecast more accurate (e.g., those eligible for the new opportunity to apply military service for earlier retirement).

Questions that will involve developing bureau policies, using the data developed by the consultants

What policies need to be developed to ensure our employees reflect the diversity of the community? (Related questions will be: how do we define the “community” for different types of jobs; how do we ensure diversity at every organizational level?)

How Will Staffing Levels Be Affected?

Questions to be addressed by the consultants

Comparison of staff ratios to other utilities. For example, ratio of GIS staff to users.

Questions that will involve developing bureau policies, using the data developed by the consultants

What service standards do we want to set? How do we need to be staffed to provide that level of service?

Are we preparing enough project managers?

How will we use the industry ratios in our own decision making? (This helps us know how to use the industry benchmarking information: if the staffing ratios at other companies are different from ours, we need to know why. Are their business needs different? Are their service standards different, and if so, why? Would like the names of companies/people to contact to find out about the rationale behind the ratios of other companies.)

Are there other criteria besides cost-effectiveness that the bureau should consider in making its contracting-out decision?

What analysis could be used to determine the cost-effectiveness of contracting out vs doing the work in-house (e.g., engineering)?

Operational questions

Bureau needs to very accurately determine its computer technology support needs—solid ratios from the industry. (We have seriously underestimated our GIS needs.)

How will the changes in demographics within the bureau affect redeployment?

Other Questions

Questions to be addressed by the consultants

What are the key elements of succession planning? (E.g., how to provide opportunities and select people for mentoring. This includes training people for leadership roles, which may take several years.)

What have other companies done? What literature searches can we do to find out general and specific “do’s and don’ts” from other companies that have undergone these types of shifts?

Questions that will involve developing bureau policies, using the data developed by the consultants

What policies and procedures will be needed to best manage the transition of an employee from a job that goes away into another within the bureau?

Operational questions

Where does the responsibility for long-term workforce development lie in the bureau?

What organizational development or human resource resources are needed and budgeted for to help the management team focus its analysis and support decision making for the workforce development? Is there a need for a more formal human resources office within the bureau that would consolidate and manage some of the existing personnel, training, organizational development, and workforce planning activities?

Vulnerability assessment: Are there service or skill gaps in areas of our operation that would make us vulnerable to suggestions of privatization?

Where are there going to be the biggest areas of resistance to change?

APPENDIX B—Current and Future Job Descriptions (Portland Bureau of Water Works)

POSITION AS IT EXISTS NOW

Position Name: Water Service Mechanic (WSM)

Key Responsibilities: Job site supervision and training. Complete reports. Proper maintenance of water system facilities including: pipes, services, hydrants, gates, meters. Job site lay-out and determination of appropriate equipment for the job. Maintain safety requirements at the job site. Locate utilities

CORE JOB REQUIREMENTS

Knowledge: Proper flagging and traffic control techniques.
Procedures for handling hazardous materials. Shoring regulations.
Ventilation of chambers and appropriate equipment to use for given situation.
Techniques for installation and repair of pipes and services.
Chlorination procedures. Equipment required to complete a job.

Skills & Abilities: Map reading. Coordinate people equipment and materials to complete jobs in a timely manner. Explain and give directions to crew. Interact effectively with customers. Operate: locators, tap machines, various power tools (saws push machines, etc.)
 Test, install and repair hydrants. Operate large and small gates. Drive a truck. Use hand signals effectively for working around large equipment. Set-up appropriate traffic control for a given situation.
 Repair and test meters.
 Math skills, Read survey stakes, plans, grades cuts and fills.
 Make appropriate decisions regarding shutting down an area to complete a facility repair.

ADVANCED REQUIREMENTS

OSHA regs. Procedures for completing pressure testing and disinfecting of mains. Cathodic protection system.

Locate leaks. Operate Kubota. Make a "patent tap." Repair and pour lead joints. Dechlorinate and flushing of water system facilities.

Specialized Training: 2-3 year apprentice program including: working in each area to learn fundamentals under supervision of a journeyman WSM. Flagging & traffic control. First aid and CPR. Defensive driving. Hazardous materials Communication

Back Flow testing. Hydrant school. Commercial Driver's License. Confined space and gas detection. Hazardous materials Handling

Experience: 3 years as an apprentice or 1 year as a Utility Worker (UW) and 2 years as an apprentice.

Education: 20 hours college level course work.

THE POSITION AS IT WILL EXIST IN THE FUTURE

Position Name

Key Responsibilities

CORE JOB REQUIREMENTS
 Common to all in this job title

Knowledge: Changing Utility Laws/ Regulations & Standards
 Trenchless pipe installation
Skills & Abilities: Use computers, advanced supervisory skills
Specialized Training:
 Experience:
 Education:

ADVANCED JOB REQUIREMENTS OR SPECIALTIES
 within the job title
 Inspection procedures for inspecting contractor's work
 Knowledge of job planning and design
 Inspector training. Water Operator's Certification (Level II or III)

**Workforce Planning and
Development: Portland,
Oregon**

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