

Revising the Standard Occupational Classification system for 2010

The Standard Occupational Classification system, recently revised for 2010, assists Federal statistical agencies in organizing the occupational data they collect, analyze, and disseminate; agencies have begun using the new system for data that will be published with a reference year of 2010

Theresa Cosca
and
Alissa Emmel

The Standard Occupational Classification (SOC) system is used for classifying all occupations in the U.S. economy, including private, public, and military occupations, in order to provide a means to organize occupational data. This article describes the process used to revise the 2000 SOC system for 2010, the scope and nature of changes incorporated, new and improved features, and plans for implementation and future revisions.

Statistical classification systems describe complex groups of interrelated items in a rational manner in order to promote consistent data collection. An optimal system would allow sharing and merging of data and information to support decision making across organizations with disparate missions. With this goal in mind, occupational classification schemes such as the SOC system examine the millions of jobs in the economy and organize them into occupations on the basis of their similarities as determined by the schemes' classification principles.

Almost every job is similar to a number of other jobs, even though the exact group of tasks is often, but not always, unique to each worker. Workers in an establishment

perform specific sets of tasks that are largely dependent on factors such as the size of the establishment, its industry classification, and the tasks performed by other workers in the same establishment. Under both the 2000 and 2010 SOC systems, jobs are grouped into occupations on the basis of classification principles—the tenets forming the basis on which the system is structured. To fill the need for enhanced guidance on assigning codes and titles to survey responses and other coding activities, the 2010 SOC system augmented the classification principles with precise coding guidelines. (See the box on page 33.)

Occupational data are important to a wide variety of people and institutions, including job training providers, employment agencies, jobseekers, students, business and government officials, and researchers who study the supply and demand of labor. These people and institutions need data that are comparable across data sources and supported by specific and current descriptions of the type of work performed in each occupation.

History of the SOC system

The Federal Government published the first SOC manual in 1977 in an attempt to unify agencies' independent collection of occupa-

Theresa Cosca and Alissa Emmel are economists in the Division of Occupational Employment Statistics, Office of Occupational Statistics and Employment Projections, Bureau of Labor Statistics. They are also members of the Standard Occupation Classification Coordinating Team. Email: cosca.theresa@bls.gov or emmel.alissa@bls.gov

2010 SOC Classification Principles and Coding Guidelines

Classification Principles:

1. The SOC covers all occupations in which work is performed for pay or profit, including work performed in family-operated enterprises by family members who are not directly compensated. It excludes occupations unique to volunteers. Each occupation is assigned to only one occupational category at the lowest level of the classification.
2. Occupations are classified based on work performed and, in some cases, on the skills, education, and/or training needed to perform the work at a competent level.
3. Workers primarily engaged in planning and directing are classified in management occupations in Major Group 11-0000. Duties of these workers may include supervision.
4. Supervisors of workers in Major Groups 13-0000 through 29-0000 usually have work experience and perform activities similar to those of the workers they supervise, and therefore are classified with the workers they supervise.
5. Workers in Major Group 31-0000 Healthcare Support Occupations assist and are usually supervised by workers in Major Group 29-0000 Healthcare Practitioners and Technical Occupations. Therefore, there are no first-line supervisor occupations in Major Group 31-0000.
6. Workers in Major Groups 33-0000 through 53-0000 whose primary duty is supervising are classified in the appropriate first-line supervisor category because their work activities are distinct from those of the workers they supervise.
7. Apprentices and trainees are classified with the occupations for which they are being trained, while helpers and aides are classified separately because they are not in training for the occupation they are helping.
8. If an occupation is not included as a distinct detailed occupation in the structure, it is classified in an appropriate “All Other,” or residual, occupation. “All Other” occupations are placed in the structure when it is determined that the detailed occupations comprising a broad occupation group do not account for all of the workers in the group. These occupations appear as the last occupation in the group with a code ending in “9” and are identified in their title by having “All Other” appear at the end.
9. The U.S. Bureau of Labor Statistics and the U.S. Census Bureau are charged with collecting and reporting data on total U.S. employment across the full spectrum of SOC major groups. Thus, for a detailed occupation to be included in the SOC, either the Bureau of Labor Statistics or the Census Bureau must be able to collect and report data on that occupation.

Coding Guidelines:

1. A worker should be assigned to an SOC occupation code based on work performed.
2. When workers in a single job could be coded in more than one occupation, they should be coded in the occupation that requires the highest level of skill. If there is no measurable difference in skill requirements, workers should be coded in the occupation in which they spend the most time. Workers whose job is to teach at different levels (e.g., elementary, middle, or secondary) should be coded in the occupation corresponding to the highest educational level they teach.
3. Data collection and reporting agencies should assign workers to the most detailed occupation possible. Different agencies may use different levels of aggregation, depending on their ability to collect data.
4. Workers who perform activities not described in any distinct detailed occupation in the SOC structure should be coded in an appropriate “All Other” or residual occupation. These residual occupational categories appear as the last occupation in a group with a code ending in “9” and are identified by having the words “All Other” appear at the end of the title.
5. Workers in Major Groups 33-0000 through 53-0000 who spend 80 percent or more of their time performing supervisory activities are coded in the appropriate first-line supervisor category in the SOC. In these same Major Groups (33-0000 through 53-0000), persons with supervisory duties who spend less than 80 percent of their time supervising are coded with the workers they supervise.
6. Licensed and non-licensed workers performing the same work should be coded together in the same detailed occupation, except where specified otherwise in the SOC definition.

tional data. The 1977 SOC system was revised for 1980, but neither of these systems was universally adopted. Many agencies continued to collect occupational data by use of classification systems that differed from the 1980 SOC system.

In response to a need for a common occupational classification system, the Office of Management and Budget (OMB) chartered the Standard Occupational Classification Revision Policy Committee (SOCRPC)¹ in 1994 and tasked it with devising a uniform classification system. The OMB asked the Bureau of Labor Statistics (BLS) to chair the SOCRPC and coordinate the work of the Committee. The SOCRPC and the OMB developed and published the 2000 *Standard Occupational Classification Manual* and established the Standard Occupational Classification Policy Committee (SOCPC) to monitor the implementation of the new SOC system and carry out periodic revisions. Chester Levine, Laurie Salmon, and Daniel Weinberg described the history and characteristics of the 2000 SOC system and documented the 2000 revision process in a May 1999 *Monthly Labor Review* article.²

To accurately describe the labor force, classification systems must adapt to change in a timely and systematic manner. Determining how often to revise the SOC system in order to capture and report detailed employment, wage, and other data required balancing the need for an up-to-date taxonomy against the ability to track occupational changes over time and the desire to minimize disruption to survey collection processes and data series. In light of these factors, the revision of the 2000 SOC system was targeted for the year 2010.

The revision process for 2010

In October of 2005, the OMB reconvened the inter-agency SOCPC, chaired by BLS, to initiate the formal 2010 SOC revision process. The Employment and Training Administration joined BLS to represent the Department of Labor, accompanied by representatives from agencies of four other executive departments where occupational data are produced: Commerce, Defense, Education, and Health and Human Services. Representatives from the Equal Employment Opportunity Commission, the National Science Foundation, and the Office of Personnel Management rounded out the interagency policy committee. On numerous occasions, the SOCPC reached out to State employment security agencies and other Federal departments and agencies, including the Federal Aviation Administra-

tion, the Department of Energy, and the National Institute of Standards and Technology, to address their specific comments and concerns and to solicit their subject-matter expertise.

Proposals for revisions were solicited from the public through the *Federal Register*. After reviewing and evaluating these proposals, the SOCPC made recommendations for revisions to the OMB. In consultation with the SOCPC, the OMB made the ultimate decisions on changes.

The 2010 SOC system follows the same basic hierarchical structure as the 2000 SOC system, with all occupations performed for pay or profit organized by numeric code. Within this structure, a six-digit code designates each occupation's placement by major group, minor group, broad occupation, and detailed occupation. Detailed occupations group together workers with similar job duties and, in some cases, similar skills, education, or training. The hyphen between each code's second and third digits is for presentation clarity only. Major group codes end with 0000, minor group codes usually end with 000 but occasionally with 00 only, broad occupations end with one zero, and detailed occupations end with a number other than zero.

The first Federal Register notice. The OMB and the SOCPC first requested public comment on the SOC revision for 2010 in a May 16, 2006, *Federal Register* notice.³ The public was asked to comment on five major areas of the revision:

- The classification principles used for the 2000 SOC system
- Corrections to the 2000 SOC manual
- The structure of the 2000 SOC major groups
- Changes to the existing detailed occupations
- Recommendations for new detailed occupations

Following the high-level aggregations of occupations described in the 2000 *Standard Occupational Classification Manual*, the SOCPC created six workgroups to examine the occupational major groups in the 2000 SOC system, as shown below:

<i>Workgroup name</i>	<i>2000 SOC major groups included</i>
Management, professional, and related occupations.....	11–29
Service occupations	31–39
Sales and office occupations.....	41–43
Natural resources, construction, and maintenance occupations.....	45–49
Production, transportation, and material moving occupations	51–53
Military specific occupations	55

The SOC coordinating team at BLS assigned a unique docket number to each comment received, sorted the comments by topic, and provided them to the appropriate workgroup. Suggestions relating to the classification principles, relating to the structure of the major groups, or affecting multiple workgroups were sent directly to the SOCP. Materials were disseminated to workgroup members via e-mail and included copies of pertinent documentation, including the original suggestion and any additional research results relating to the suggestion. In addition to considering public comments, the workgroup members reviewed all occupations in the major groups within their assigned sections to edit for clarity, changing terminology, and technological updates.

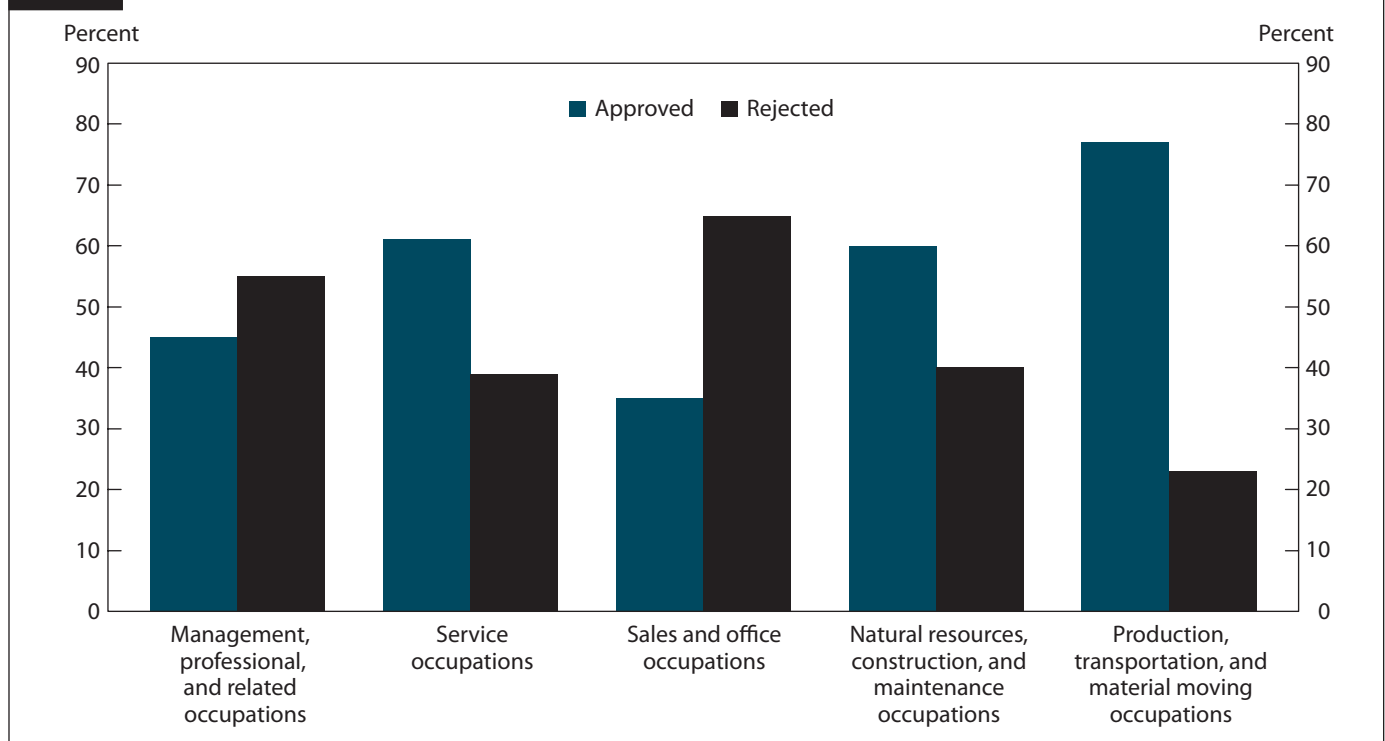
Increased use of e-mail and conference calls to conduct the 2010 SOC revision, as compared with conducting the 2000 revision, served not only to expedite consideration of the vast amount of materials received from the public, but also to widen the range of participants in the workgroups. When two or more dockets recommended adding the same occupation, the suggestion was counted only once. Conversely, when a single request recommended adding two or more new occupations, each suggestion was considered separately and is counted three times in chart 1, which shows the variation in the percent of suggestions

accepted or rejected, by selected workgroup.

Guided by the classification principles, the SOCP reviewed workgroup recommendations, reached decisions by consensus, and then provided these decisions to the OMB. As will be discussed later, the magnitude of the revisions ranged from substantial modifications to the occupational structure of the 2010 SOC system to relatively simple editorial clarifications not expected to affect data collection. The new classification system reflects many revised occupational titles, as well as structural changes resulting from the placement of individual occupations. All changes relating to the SOC occupational titles, codes, classification principles, and coding guidelines were published in a second *Federal Register* notice, described in the next subsection.

The second Federal Register notice. Two years after its first *Federal Register* notice on the 2010 SOC system, the OMB published a second notice in the May 22, 2008, *Federal Register*. In addition to general comments on the SOCP's recommendations, the OMB and the SOCP requested public comment on the following: (1) the classification principles and coding guidelines, (2) changes to titles and codes of occupations, (3) changes to the hierarchical structure, and (4) the titles, placement, and codes of new

Chart 1. Percent of suggestions approved and rejected for the 2010 SOC system, by selected workgroup



occupations the SOCP recommended adding to the revised 2010 SOC manual. The second notice included draft versions of the classification principles and coding guidelines of the 2010 SOC system.

More than 1,200 comments were received in response to the second *Federal Register* notice. Guided by the classification principles, the SOCP considered the comments and made its final recommendations to the OMB. As with the comments received in response to the first *Federal Register* notice, the SOC coordinating team logged each of the comments received individually, assigning a unique docket number. Comments were then sorted by topic so that similar suggestions could be considered concurrently. Although the majority of the comments received requested only one change, some requested multiple changes, which were each considered separately.

Table 1 groups the comments received in response to the second *Federal Register* notice by topic. Eighty-seven percent of comments pertained to one of four topics: community health workers, clinical nurse specialists, medical staff service professionals, and metrology.

One issue generating great interest, as measured by the count of comments received, was the recommendation to add clinical nurse specialists as its own detailed occupation, with hundreds of organizations and individuals submitting similar requests. Yet, after reviewing the supporting documentation and applying the classification principles, the SOCP did not accept this recommendation and explained its decision in the third *Federal Register* notice as follows: “Even though education for Clinical Nurse Specialists is different from that of Registered Nurses, the tasks of Clinical Nurse Specialists are not sufficiently unique from those of Registered Nurses who ‘assess patient health problems

and needs, develop and implement nursing care plans, and maintain medical records.”⁴

A separate comment suggested that the SOCP create a new category for the combined occupation of “nurse practitioners and clinical nurse specialists,” and yet another comment requested including clinical nurse specialists in a new detailed occupation called “advance practice nurses without prescriptive authority.” Neither of these recommendations was accepted, because of classification principle 1, which states that each occupation is assigned to only one occupational category at the lowest level of classification. Combining clinical nurse specialists with nurse practitioners would violate classification principle 2 as well, because workers in these occupations do not perform the same tasks.⁵ In addition, principle 9 states that data on the occupation must be collectable by the Census Bureau or BLS, and there was concern about whether agencies could easily distinguish between clinical nurse specialists with and without prescriptive authority.⁶

The OMB and the SOCP published their specific responses to all dockets on a new section of the SOC page on the BLS Web site. In response to the multiple dockets on clinical nurse specialists, classification principles 1 and 2 were cited. Clinical nurse specialists are distinguished from registered nurses on the basis of their educational background, and the SOC classification is task based.⁷

The following sections provide additional information on the third *Federal Register* notice, the process used by the SOCP to evaluate comments, and the SOCP’s responses to comments received.

The final Federal Register notice. In the third *Federal Register* notice, published on January 21, 2009—the final notice that concerns the 2010 revision of the SOC system—the OMB presented its decisions on the 2010 SOC organizational structure, classification principles, and coding guidelines. During the 2000 revision effort, the SOCRPC and the OMB published summaries of significant changes and the public’s responses to the changes. The 2010 revision effort improved public access to the results of its decision making process by posting official responses to all dockets rather than summaries.⁸

The 2010 SOC system retains certain key characteristics of the 2000 SOC system. Both systems are composed of four hierarchical levels (major groups, minor groups, broad occupations, and detailed occupations) and uphold the principles of exclusivity and exhaustivity. The exclusivity of the SOC occupations is explained in the first classification principle, “Each occupation is assigned to only one occupational category at the lowest level of the classification.” The

Topic	Number	Percent of total
Community health workers.....	378	31.4
Clinical nurse specialists	284	23.6
Medical staff services professionals.....	206	17.1
Metrology.....	175	14.5
Acupuncturists	35	2.9
Dental hygienists.....	29	2.4
Radiologic technologists.....	19	1.6
Ophthalmic related.....	17	1.4
Cancer registrars.....	6	.5
Classification principles.....	2	.2
Other.....	54	4.5
Total.....	1,205	100.0

principle of exhaustivity is demonstrated by the inclusion of “residual occupations” (occupations ending in “all other,” such as business operations specialists, all other) which ensures that all jobs can be captured by the SOC structure.⁹

The 2010 SOC revision process culminated in a hierarchical structure containing 840 detailed occupations, 461 broad occupations, 97 minor groups, and 23 major groups. Compared with the 2000 SOC system, the 2010 SOC system realized a net gain of 19 detailed occupations, 12 broad occupations, and 1 minor group. Table 2 compares the hierarchical structures of the 1980, 2000, and 2010 SOC systems.¹⁰

The underlying organizational concept of the 2010 SOC system, that workers are classified on the basis of work performed, is the same as that of the 2000 SOC system. However, three new principles were adopted, and noteworthy changes occurred to classification principle 2. These changes do not indicate a shift in the underlying organizational principles of the SOC system, but instead reflect a formalization of existing de facto coding and classification practices. The first of the new principles, classification principle 3, dictates that workers engaged primarily in planning and directing, regardless of whether or not they supervise other workers, be classified in management occupations. The second of the new principles, classification principle 5, clarifies that workers in major group 31-0000, healthcare support occupations, are usually supervised by workers in major group 29-0000, healthcare practitioners and technical occupations. And lastly, classification principle 9 states that, “for a detailed occupation to be included in the SOC, either the Bureau of Labor Statistics or the Census Bureau must be able to collect and report data on that occupation.”¹¹

For several reasons, classification principle 2 was modified to remove “credentials” from the criteria listed for classifying occupations. Many different types of credentials apply to occupations: State occupational licensing, Federal occupational licensing, and private sector occupational certifications, as well as certifications of particular skill sets

that may apply to multiple occupations. Credentialing requirements can vary not only from State to State, but also by locality, industry, establishment size, or firm. Classifying or defining an occupation by credentialing requirements is complicated by the lack of a current data collection mechanism to obtain comprehensive information on occupational credentialing. In many cases, new technology and business practices cause credentials to change more rapidly than other variables, and these changes could not be reflected in a classification that is to remain stable over a 5- to 10-year period.¹²

The SOCPA relied upon the classification principles and coding guidelines to evaluate proposals received in response to the *Federal Register* notices. Where applicable, relevant classification principles were identified in the SOCPA’s responses. For example, in response to the recommendation to add professional organizers as a new detailed occupation, the Committee did not accept this recommendation because of classification principle 1, which states that occupations are assigned to only one occupational category. The title of professional organizers “is so broad it could fit into multiple SOC occupations, depending on the work performed.”¹³ Whereas some of these workers help businesses relocate facilities or preserve electronic information, others focus on residential closet design or personal coaching.

One of the commonly cited concerns when considering whether to accept a recommendation for a new detailed occupation was collectability, as defined in classification principle 9. Collectability was a concern with regard to adding records and information managers because “the number of workers performing records and information management tasks as their primary activity is not substantial enough to support a new detailed occupation.”¹⁴ As for optical engineers, the SOCPA recognized this group of workers as an emerging occupation but decided it is not yet feasible for occupational employment surveys to reliably collect data on this occupation.¹⁵ Collectability was also cited as a determining factor in agreeing to add new detailed occupations, as with genetic counselors. The committee accepted adding this occupation because it determined that the work that genetic counselors perform is sufficiently different from the work of other occupations. Although employment in this occupation is low, genetic counselors “are concentrated in certain industries, reducing concerns regarding collectability.”¹⁶

Changes to detailed occupations

Each change to a detailed occupation fell into one of four categories: editing, content, title, and code changes.¹⁷

Category	1980 SOC	2000 SOC	2010 SOC
Major groups.....	22	23	23
Minor groups	60	96	97
Broad occupations	226	449	461
Detailed occupations.....	666	821	840

¹ The 1980 SOC system used a four-level hierarchical structure. The 1980 category titles of division, major group, minor group, and unit group correspond with the 2000 and 2010 categories of major group, minor group, broad occupation, and detailed occupation, respectively.

Nine out of ten occupations in the 2010 SOC manual experienced no change or editorial changes only. (See chart 2.) Occupations with changes in content had combined employment of about 12.4 million jobs according to May 2009 Occupational Employment Statistics data, or about 9.5 percent of the total 2009 OES employment of 130.6 million jobs.

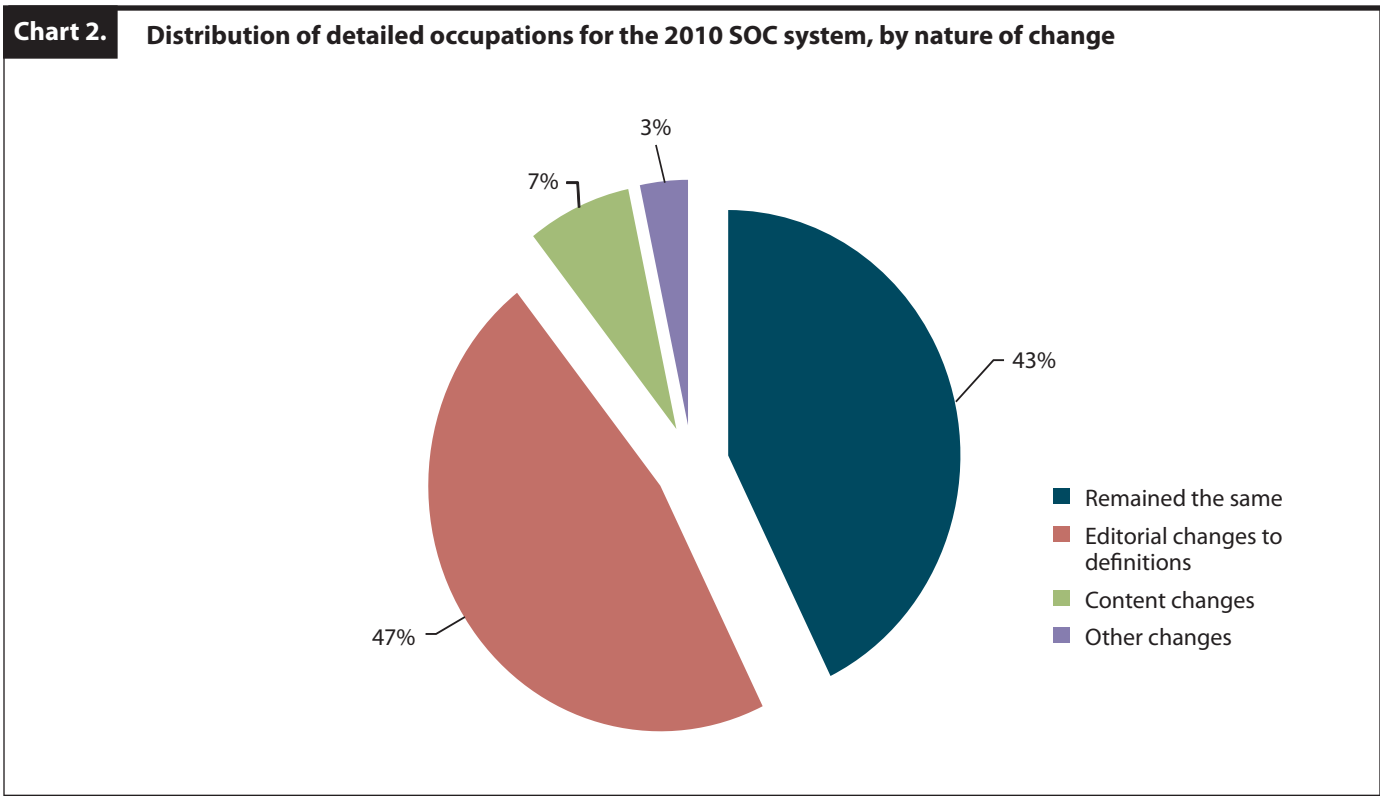
Although any change could potentially affect occupational coding, for the purposes of the SOCPC, “content changes” referred only to occupations that split or collapsed. An occupational split occurred when one 2000 SOC occupation was divided into two or more 2010 SOC occupations. An occupational collapse occurred when two or more 2000 SOC occupations were merged into one 2010 SOC occupation. (See the section on content changes, beginning after the next subsection.) It is important to note that the SOCPC determined that occupational splits and collapses did not stem from changes to the 2000 SOC principles because the principles were edited for clarification only. Therefore, structural changes were driven by actual changes in the nature or organization of work being performed in the economy.¹⁸

Editing changes. Some editing changes were as simple as correcting punctuation or substituting a more descrip-

tive term, as in the case of athletic trainers (29-9091), which changed from “evaluate, advise, and treat *athletes* to assist recovery from injury, avoid injury, or maintain peak physical fitness” to “evaluate and advise *individuals* to assist recovery from or avoid athletic-related injuries or illnesses, or maintain peak physical fitness.” The definition changed to acknowledge that any participant in athletic activities might seek the assistance of an athletic trainer, independent of his or her level of athletic skill, whether professional or amateur. In another example of a relatively modest editing change, the definition of residential advisors (39-9041) was modified to include group homes.

Although these two editing changes were relatively minor, others were quite extensive. The definition for massage therapists (31-9011) was completely rewritten, and the definition for mining and geological engineers, including mining safety engineers (17-2151) was expanded to include the duties of mining safety engineers. As indicated by the title, mining safety engineers were always included in this occupation; however, the 2000 SOC definition did not describe the work that they perform.

Content changes. Of the 840 occupations in the 2010 SOC manual, 61 experienced content changes (as a result of merging or splitting occupations). For example,



the 2010 detailed occupation of photographic process workers and processing machine operators (51-9151) resulted from combining two 2000 SOC occupations, photographic process workers (51-9131) and photographic processing machine operators (51-9132). Likewise, the 2010 detailed occupation of farmers, ranchers, and other agricultural managers (11-9013) resulted from combining farm, ranch, and other agricultural managers (11-9011) with farmers and ranchers (11-9012).

Less linear relationships exist in other groupings that were reworked for the 2010 SOC system, such as the printing workers minor group (51-5110), in which five 2000 SOC occupations were combined into three 2010 SOC occupations: prepress technicians and workers (51-5111), printing press operators (51-5112), and print binding and finishing workers (51-5113).

The 61 content changes encompass the 24 new detailed occupations and codes broken out of the 2000 SOC system. These include two new renewable energy occupations, solar photovoltaic installers (47-2231) and wind turbine service technicians (49-9081). Of the 24 new occupations, 9 were related to healthcare and 6 to information technology. Widespread changes in IT necessitated a thorough review of the associated occupations, resulting in a number of newly defined detailed occupations in the computer occupations minor group (15-1100). The number of detailed computer occupations increased from 2 in the 1980 SOC system to 10 in the 2000 SOC system and 13 in the 2010 SOC system.

Content changes also occurred when a subset of workers within a detailed occupation was moved to a different detailed occupation, as with law clerks (23-2092). The 2000 SOC occupation included two types of law clerks: those who have passed the bar and assist judges, and those without formal law degrees who assist lawyers and perform work similar to that of paralegals. Under the 2010 SOC system, law clerks assisting judges are classified as judicial law clerks (23-1012) whereas those assisting lawyers are classified as paralegals and legal assistants (23-2011).

Title changes. Title changes were made to clarify occupational coverage. For example, the 2000 SOC occupational title of engineering managers (11-9041) became architectural and engineering managers; loan counselors (13-2071) became credit counselors; and farmworkers, farm and ranch animals (45-2093) became farmworkers, farm, ranch, and aquacultural animals. The revised titles more accurately describe the workers included in the occupation.

Other title changes reflected general usage. After re-

view and consideration by the SOCPC, some of these were implemented. For example, the American Occupational Therapy Association recommended changing the title of occupational *therapist* assistants (31-1122) to occupational *therapy* assistant, because the title occupational *therapy* assistant is found in literature in the field, in the occupational therapy educational system, in State practice and licensure laws, and in the insurance industry.

At times a definition change was the impetus for an occupational title change. For instance, the revised title of meeting, convention, and event planners (13-1121) accounts for the definition change to include event planners, who were previously included in the residual occupation of business operations specialists, all other (13-1199).

Code changes. In the 2000 SOC system, farm labor contractors were included within the broad occupation of first-line supervisors of farming, fishing, and forestry workers (45-1010) in the major group of farming, fishing, and forestry occupations (45-0000), but the work performed, as described in the 2000 definition—“recruit, hire, furnish, and supervise seasonal or temporary agricultural laborers”—more closely aligns with the work performed by other occupations within human resources. Accordingly, farm labor contractors were moved to the business and financial operations occupations (13-0000) major group and their SOC code was modified to reflect their revised placement in the SOC structure. The occupational content of the 2010 SOC occupation of farm labor contractors (13-1074) remained the same.

Similarly, the 2000 SOC occupation of flight attendants (53-2031) was moved into the major group of transportation and material moving occupations (53-0000) from the major group of personal care and service occupations (39-0000). In this case, the SOCPC agreed that the work that flight attendants perform is more closely related to the work that other workers in air transportation perform.

New and improved features

“Direct match” titles. Because workers within an occupation may have many different job titles, many data users have sought out an accepted list of associated job titles. To satisfy this demand, the SOCPC took on the task of creating such a file. The intent of defining and providing “direct match” titles is to give examples of titles that can be used in only one occupation. For example, the job title “painter” could belong in the SOC occupation of fine artists, including painters, sculptors, and illustrators (27-1013); in painters, construction and maintenance (47-2141); or in

painters, transportation equipment (51-9122). Therefore, the title “painter” would not qualify as a direct-match title. In contrast, a title such as “criminal law professor” can be classified only under law teachers, postsecondary (25-1112), and would qualify as a direct match. To initiate the process of developing the file of direct-match titles, the SOCP considered recommendations from the public and from agencies’ internal title files.

The SOCP frequently found that the work performed by a proposed occupation was already covered in the description of an existing SOC occupation. When applicable, requests for new occupations that the SOCP did not accept were considered for the direct-match title file. For example, the title “hybrid car mechanic” was matched to automotive service technicians and mechanics (49-3023), “biodiesel engine specialists” to bus and truck mechanics and diesel engine specialists (49-3031), and “solar thermal installers” to plumbers, pipefitters, and steamfitters (47-2152). The SOC system does not distinguish among workers performing similar duties in different industries. Solar photovoltaic electricians perform tasks that closely resemble the tasks of other electricians; consequently, they are included in the occupation of electricians (47-2111).¹⁹ The complete database of direct-match titles is available for download from the SOC page on the BLS Web site.²⁰

Illustrative examples. To improve the widely used illustrative examples published in the 2000 SOC manual, the SOCP decided to select them from the file of direct-match titles described earlier. This updated approach eliminated incorrect, outdated, or uncommon illustrative examples from the 2000 SOC manual. The example “flying instructor” incorrectly appeared under self-enrichment education teachers (25-3021) in the 2000 SOC manual. In fact, this title should have been associated with either airline pilots, copilots, and flight engineers (53-2011) or commercial pilots (53-2012), whose definitions state “includes aircraft instructors with similar certification.” Additionally, because the title of flying instructor is associated with more than one occupation, it would not be considered a direct match in the 2010 SOC system. “Telegraph operator,” an outdated example used for communications equipment operators, all other (43-2099) in the 2000 SOC manual, was eliminated. The uncommon example used in the 2000 SOC manual for counselors, all other (21-1019) of “mental hygienist” was replaced with three new examples, “anger control counselor,” “grief counselor,” and “sexual assault counselor.”

The most common reason for eliminating an illustrative example was that, under the 2010 SOC system, it could

be coded into multiple SOC occupations, depending on the work performed, and thus would not meet the criteria necessary for inclusion in the direct-match title file. For instance, in the 2000 SOC manual, “camera operator” was an illustrative example for the occupation of photographers (27-4021). However, camera operator is also in the title of the subsequent SOC occupation: camera operators, television, video, and motion picture (27-4031). Although a camera operator could in fact be a photographer, not all camera operators are photographers. In another case, “attendance officer” was removed from probation officers and correctional treatment specialists (21-1092) because of overlap with attendance officers working in schools, whose duties include calling parents when students fail to come to school.

Implementation and future revisions

Federal statistical agencies have begun using the 2010 SOC system for occupational data they publish for reference dates on or after January 1, 2010. However, it is important to note that, for some programs, full implementation of the 2010 SOC system will occur in stages. For example, in some programs multiple years of data are necessary to produce estimates at the full level of occupational detail.²¹

Classification systems must evolve in order to facilitate the collection of meaningful data and information. The SOCP will continue to serve as a standing committee, after publication of the 2010 *Standard Occupational Classification Manual*, to perform maintenance functions such as placing new occupations within the existing structure and updating title files, including the newly created direct-match title file. This will allow the 2010 SOC system to accommodate new and emerging occupations on an ongoing basis. Periodic updates to the title file between major SOC revisions also will improve consistency in coding across agencies.²²

The next revision of the Standard Occupational Classification system is scheduled to begin in 2013 and result in a 2018 SOC system. The recommendation to follow this timeline was driven, in part, by the scheduled revisions to the North American Industry Classification System (NAICS), which will occur for years ending in 2 and 7. The SOCP recognized the many advantages to coordinating the implementation of the SOC revisions with NAICS revisions. Timing the SOC revision to occur the year following a NAICS revision will minimize disruption to data providers, producers, and users by promoting simultaneous adoption of revised occupational and industry classification systems for those data series which use both. As indi-

cated in the final *Federal Register* notice, the OMB intends to consider revisions of the SOC for 2018 and every 10 years thereafter, a reflection of the desire of the SOCRPC

to retain time-series continuity while also updating the classification often enough to realistically represent the current occupational structure in the U.S. economy. □

Notes

¹ The SOCRPC included representatives from the Census Bureau, the Bureau of Labor Statistics, the Defense Manpower Data Center, the Employment and Training Administration, the National Occupational Information Coordinating Committee, the National Science Foundation, the Office of Management and Budget, and the Office of Personnel Management. Though not official members of the SOCRPC, representatives from the Department of Agriculture, the Department of Education, the Department of Health and Human Services, the Department of Transportation, the Department of Veterans Affairs, the Employment Standards Administration, the Equal Employment Opportunity Commission, the Food and Drug Administration, and a number of State employment security agencies participated in the development of the 2000 SOC system.

² See Chester Levine, Laurie Salmon, and Daniel Weinberg, "Revising the Standard Occupational Classification system," *Monthly Labor Review*, May 1999, pp. 36–45.

³ All comments received are available to the public by visiting BLS. Please call BLS at (202) 691-6500 to make an appointment if you wish to view the comments received in response to the *Federal Register* notices.

⁴ *Federal Register*, Vol. 74, No. 12 (Office of Management and Budget, Jan. 21, 2009), p. 3923.

⁵ See "Response to Comment on 2010 SOC: Docket Number 08-0239" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0239.htm (visited June 3, 2010).

⁶ See "Response to Comment on 2010 SOC: Docket Number 08-0315" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0315.htm (visited June 3, 2010).

⁷ See "Response to Comment on 2010 SOC: Multiple Dockets on Clinical Nurse Specialists" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_multiple_docket_8.htm (visited June 3, 2010).

⁸ Only some of these responses were included in the body of the *Federal Register* notice, but all responses were made available to the public on the Internet at www.bls.gov/soc/2010_responses (visited Aug. 11, 2010).

⁹ See Alissa Emmel and Theresa Cosca, *Occupational Classification Systems: Analyzing the 2010 Standard Occupational Classification (SOC) Revision* (Federal Committee on Statistical Methodology, 2009), on the Internet at www.fcs.gov/09papers/Emmel_IV-B.pdf (visited June 3, 2010).

¹⁰ For crosswalks between the detailed occupations in the 2000 and 2010 SOC systems, see www.bls.gov/soc/home.htm#materials (visited Aug. 11, 2010).

¹¹ *Standard Occupational Classification Manual, 2010* (Office of Management and Budget, 2010), p. xv.

¹² *Federal Register*, Vol. 71, No. 94 (Office of Management and Budget, May 16, 2006), p. 28537.

¹³ See "Response to Comment on 2010 SOC: Docket Number 08-0314" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0314.htm (visited June 3, 2010).

¹⁴ See "Response to Comment on 2010 SOC: Docket Number 08-0938" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0938.htm (visited June 3, 2010).

¹⁵ See "Response to Comment on 2010 SOC: Docket Number 08-0898" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0898.htm (visited June 3, 2010).

¹⁶ See "Response to Comment on 2010 SOC: Docket Number 08-0292" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0292.htm (visited June 3, 2010).

¹⁷ For a table presenting type of change by detailed 2010 SOC occupation, see www.bls.gov/soc/home.htm#materials.

¹⁸ See "Response to Comment on 2010 SOC: Docket Number 08-0012" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0012.htm (visited June 3, 2010).

¹⁹ See "Response to Comment on 2010 SOC: Docket Number 08-0492, 08-0762, and 08-1157" (Standard Occupational Classification Policy Committee, Mar. 12, 2009), on the Internet at www.bls.gov/soc/2010_responses/response_08-0492_08-0762_08-1157.htm (visited June 3, 2010).

²⁰ See www.bls.gov/soc/home.htm#materials to download this file and other related materials.

²¹ See "2010 SOC Implementation Schedule for BLS Programs" (Bureau of Labor Statistics, Mar. 2, 2010), on the Internet at www.bls.gov/soc/socimp.htm (visited June 3, 2010).

²² For information on suggesting job titles for the direct-match title file, see the SOC section of the BLS Web site, on the Internet at www.bls.gov/soc (visited Aug. 12, 2010).