

The Three Jobs of the Future

THE USUAL discussion about the future of the American economy focuses on topics like the competitiveness of General Motors, or of the American automobile industry, or, more broadly, of American manufacturing, or, more broadly still, of the American economy. But, as has been observed, these categories are becoming irrelevant. They assume the continued existence of an American economy in which jobs associated with a particular firm, industry, or sector are somehow connected within the borders of the nation, so that American workers face a common fate; and a common enemy as well: The battlefields of world trade pit our corporations and our workers unambiguously against theirs.

No longer. In the emerging international economy, few American companies and American industries compete against foreign companies and industries—if by *American* we mean where the work is done and the value is added. Becoming more typical is the global web, perhaps headquartered in and receiving much of its financial capital from the United States, but with research, design, and production facilities spread over Japan, Europe, and North America; additional production facilities in Southeast Asia and Latin America; marketing and distribution centers on every continent; and lenders and investors in Taiwan, Japan, and West Germany as well as the United States. This ecumenical company competes with similarly ecumenical companies headquartered in other nations. Battle lines no longer correspond with national borders.

So, when an "American" company like General Motors shows healthy profits, this is good news for its strategic brokers in Detroit and its American investors. It is also good news for other GM executives worldwide and for GM's global employees, subcontractors, and investors. But it is not necessarily good news for a lot of routine assembly-line workers in Detroit, because there are not likely to be many of them left in Detroit, or anywhere else in America. Nor is it necessarily good news for the few Americans who are still working on assembly lines in the United States, who increasingly receive their paychecks from corporations based in Tokyo or Bonn.

The point is that Americans are becoming part of an international labor market, encompassing Asia, Africa, Latin America, Western Europe, and, increasingly, Eastern Europe and the Soviet Union. The competitiveness of Americans in this global market is coming to depend, not on the fortunes of any American corporation or on American industry, but on the functions that Americans perform—the value they add—within the global economy. Other nations are undergoing precisely the same transformation, some more slowly than the United States, but all participating in essentially the same transnational trend. Barriers to cross-border flows of knowledge, money, and tangible products are crumbling; groups of people in every nation are joining global webs. In a very few years, there will be virtually no way to distinguish one national economy from another except by the exchange rates of their currencies—and even this distinction may be on the wane.

Americans thus confront global competition ever more directly, unmediated by national institutions. As we discard vestigial notions of the competitiveness of American corporations, American industry, and the American economy, and recast them in terms of the competitiveness of the American work force, it becomes apparent that successes or failures will not be shared equally by all our citizens.

Some Americans, whose contributions to the global economy are more highly valued in world markets, will succeed, while others, whose contributions are deemed far less valuable, fail. GM's American executives may become more competitive even as GM's American production workers become less so, because the func-

tions performed by the former group are more highly valued in the world market than those of the latter. So when we speak of the "competitiveness" of Americans in general, we are talking only about how much the world is prepared to spend, *on average*, for services performed by Americans. Some Americans may command much higher rewards; others, far lower. No longer are Americans rising or falling together, as if in one large national boat. We are, increasingly, in different, smaller boats.

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IN ORDER to see in greater detail what is happening to American jobs and to understand why the economic fates of Americans are beginning to diverge, it is first necessary to view the work that Americans do in terms of categories that reflect their real competitive positions in the global economy.

Official data about American jobs are organized by categories that are not very helpful in this regard. The U.S. Bureau of the Census began inquiring about American jobs in 1820, and developed a systematic way of categorizing them in 1870. Beginning in 1943, the Census came up with a way of dividing these categories into different levels of "social-economic status," depending upon, among other things, the prestige and income associated with each job. In order to determine the appropriate groupings, the Census first divided all American jobs into either business class or working class—the same two overarching categories the Lynns had devised for their study of Middletown—and then divided each of these, in turn, into subcategories.¹ In 1950, the Census added the category of "service workers" and called the resulting scheme America's "Major Occupational Groups," which it has remained ever since. All subsequent surveys have been based on this same set of categories. Thus, even by 1990, in the eyes of the Census, you were either in a "managerial and professional specialty," in a "technical, sales, and administrative support" role, in

¹ See Alba M. Edwards, *U.S. Census of Population, 1940: Comparative Occupation Statistics, 1870-1940* (Washington, D.C.: U.S. Government Printing Office, 1943).

a "service occupation," an "operator, fabricator, and laborer," or in a "transportation and material moving" occupation.

This set of classifications made sense when the economy was focused on high-volume, standardized production, in which almost every job fit into, or around, the core American corporation, and when status and income depended on one's ranking in the standard corporate bureaucracy. But these categories have little bearing upon the competitive positions of Americans worldwide, now that America's core corporations are transforming into finely spun global webs. Someone whose job falls officially into a "technical" or "sales" subcategory may, in fact, be among the best-paid and most influential people in such a web. To understand the real competitive positions of Americans in the global economy, it is necessary to devise new categories.²

Essentially, three broad categories of work are emerging, corresponding to the three different competitive positions in which Americans find themselves. The same three categories are taking shape in other nations. Call them *routine production services*, *in-person services*, and *symbolic-analytic services*.

Routine production services entail the kinds of repetitive tasks performed by the old foot soldiers of American capitalism in the high-volume enterprise. They are done over and over—one step in a sequence of steps for producing finished products tradeable in world commerce. Although often thought of as traditional blue-collar jobs, they also include routine supervisory jobs performed by low- and mid-level managers—foremen, line managers, clerical supervisors, and section chiefs—involving repetitive checks on subordinates' work and the enforcement of standard operating procedures.

Routine production services are found in many places within

²Because much of the information about the American work force must be gleaned from the old categories, however, the only way to discover who fits into which new category is to decompose the government's data into the smallest subcategories in which they are collected, then reorder the subcategories according to which new functional group they appear to belong in. For a similar methodology, see Steven A. Sass, "The U.S. Professional Sector: 1950 to 1988," *New England Economic Review*, January–February 1990, pp. 37–55.

a modern economy apart from older, heavy industries (which, like elderly citizens, have been given the more delicate, and less terminal, appellation: "mature"). They are found even amid the glitter and glitz of high technology. Few tasks are more tedious and repetitive, for example, than stuffing computer circuit boards or devising routine coding for computer software programs.

Indeed, contrary to prophets of the "information age" who buoyantly predicted an abundance of high-paying jobs even for people with the most basic of skills, the sobering truth is that many information-processing jobs fit easily into this category. The foot soldiers of the information economy are hordes of data processors stationed in "back offices" at computer terminals linked to worldwide information banks. They routinely enter data into computers or take it out again—records of credit card purchases and payments, credit reports, checks that have cleared, customer accounts, customer correspondence, payroll, hospital billings, patient records; medical claims, court decisions, subscriber lists, personnel, library catalogues, and so forth. The "information revolution" may have rendered some of us more productive, but it has also produced huge piles of raw data which must be processed in much the same monotonous way that assembly-line workers and, before them, textile workers processed piles of other raw materials.

Routine producers typically work in the company of many other people who do the same thing, usually within large enclosed spaces. They are guided on the job by standard procedures and codified rules, and even their overseers are overseen, in turn, by people who routinely monitor—often with the aid of computers—how much they do and how accurately they do it. Their wages are based either on the amount of time they put in or on the amount of work they do.

Routine producers usually must be able to read and to perform simple computations. But their cardinal virtues are reliability, loyalty, and the capacity to take direction. Thus does a standard American education, based on the traditional premises of American education, normally suffice.

By 1990, routine production work comprised about one-quarter of the jobs performed by Americans, and the number was declining. Those who dealt with metal were mostly white and male; those who dealt with fabrics, circuit boards, or information

were mostly black or Hispanic, and female; their supervisors, white males.³

In-person services, the second kind of work that Americans do, also entail simple and repetitive tasks. And like routine production services, the pay of in-person servers is a function of hours worked or amount of work performed; they are closely supervised (as are their supervisors), and they need not have acquired much education (at most, a high school diploma, or its equivalent, and some vocational training).

The big difference between in-person servers and routine producers is that *these* services must be provided person-to-person, and thus are not sold worldwide. (In-person servers might, of course, work for global corporations. Two examples: In 1988, Britain's Blue Arrow PLC acquired Manpower Inc., which provides custodial services throughout the United States. Meanwhile, Denmark's ISS-AS already employed over 16,000 Americans to clean office buildings in most major American cities.) In-person servers are in direct contact with the ultimate beneficiaries of their work; their immediate objects are specific customers rather than streams of metal, fabric, or data. In-person servers work alone or in small teams. Included in this category are retail sales workers, waiters and waitresses, hotel workers, janitors, cashiers, hospital attendants and orderlies, nursing-home aides, child-care workers, house cleaners, home health-care aides, taxi drivers, secretaries, hairdressers, auto mechanics, sellers of residential real estate, flight attendants, physical therapists, and—among the fastest-growing of all—security guards.

In-person servers are supposed to be as punctual, reliable, and tractable as routine production workers. But many in-person servers share one additional requirement: They must also have a pleasant demeanor. They must smile and exude confidence and good cheer, even when they feel morose. They must be courteous and helpful, even to the most obnoxious of patrons. Above all, they must make others feel happy and at ease. It should come as no

³For an illuminating discussion of routine jobs in a high-technology industry, see D. O'Connor, "Women Workers in the Changing International Division of Labor in Microelectronics," in L. Benerici and C. Stimpson (eds.), *Women, Households, and the Economy* (New Brunswick, N.J.: Rutgers University Press, 1987).

surprise that, traditionally, most in-person servers have been women. The cultural stereotype of women as nurturers—as mommies—has opened countless in-person service jobs to them.⁴

By 1990, in-person services accounted for about 30 percent of the jobs performed by Americans, and their numbers were growing rapidly. For example, Beverly Enterprises, a single nursing-home chain operating throughout the United States, employed about the same number of Americans as the entire Chrysler Corporation (115,174 and 116,250, respectively)—although most Americans were far more knowledgeable about the latter, including the opinions of its chairman. In the United States during the 1980s, well over 3 million *new* in-person service jobs were created in fast-food outlets, bars, and restaurants. This was more than the *total* number of routine production jobs still existing in America by the end of the decade in the automobile, steelmaking, and textile industries combined.⁵

Symbolic-analytic services, the third job category, include all the problem-solving, problem-identifying, and strategic-brokering activities we have examined in previous chapters. Like routine production services (but *unlike* in-person services), symbolic-analytic services can be traded worldwide and thus must compete with foreign providers even in the American market. But they do not enter world commerce as standardized things. Traded instead are the manipulations of symbols—data, words, oral and visual representations.

Included in this category are the problem-solving, -identifying, and brokering of many people who call themselves research scientists, design engineers, software engineers, civil engineers, biotechnology engineers, sound engineers, public relations executives, investment bankers, lawyers, real estate developers, and even a few creative accountants. Also included is much of the work done by management consultants, financial consultants, tax consultants, energy consultants, agricultural consultants, armaments consultants, architectural consultants, management information specialists, organization development specialists, strategic

⁴On this point, see Arlie Russell Hochschild, *The Managed Heart: The Commercialization of Human Feeling* (Berkeley: University of California Press, 1983).

⁵U.S. Department of Commerce, Bureau of Labor Statistics, various issues.

planners, corporate headhunters, and systems analysts. Also: advertising executives and marketing strategists, art directors, architects, cinematographers, film editors, production designers, publishers, writers and editors, journalists, musicians, television and film producers, and even university professors.

Symbolic analysts solve, identify, and broker problems by manipulating symbols. They simplify reality into abstract images that can be rearranged, juggled, experimented with, communicated to other specialists, and then, eventually, transformed back into reality. The manipulations are done with analytic tools, sharpened by experience. The tools may be mathematical algorithms, legal arguments, financial gimmicks, scientific principles, psychological insights about how to persuade or to amuse, systems of induction or deduction, or any other set of techniques for doing conceptual puzzles.

Some of these manipulations reveal how to more efficiently deploy resources or shift financial assets, or otherwise save time and energy. Other manipulations yield new inventions—technological marvels, innovative legal arguments, new advertising ploys for convincing people that certain amusements have become life necessities. Still other manipulations—of sounds, words, pictures—serve to entertain their recipients, or cause them to reflect more deeply on their lives or on the human condition. Others grab money from people too slow or naïve to protect themselves by manipulating in response.

Like routine producers, symbolic analysts rarely come into direct contact with the ultimate beneficiaries of their work. But other aspects of their work life are quite different from that experienced by routine producers. Symbolic analysts often have partners or associates rather than bosses or supervisors. Their incomes may vary from time to time, but are not directly related to how much time they put in or the quantity of work they put out. Income depends, rather, on the quality, originality, cleverness, and, occasionally, speed with which they solve, identify, or broker new problems. Their careers are not linear or hierarchical; they rarely proceed along well-defined paths to progressively higher levels of responsibility and income. In fact, symbolic analysts may take on vast responsibilities and command inordinate wealth at rather young ages. Correspondingly, they may lose authority and income

if they are no longer able to innovate by building on their cumulative experience, even if they are quite senior.

Symbolic analysts often work alone or in small teams, which may be connected to larger organizations, including worldwide webs. Teamwork is often critical. Since neither problems nor solutions can be defined in advance, frequent and informal conversations help ensure that insights and discoveries are put to their best uses and subjected to quick, critical evaluation.⁶

When not conversing with their teammates, symbolic analysts sit before computer terminals—examining words and numbers, moving them, altering them, trying out new words and numbers, formulating and testing hypotheses, designing or strategizing. They also spend long hours in meetings or on the telephone, and even longer hours in jet planes and hotels—advising, making presentations, giving briefings, doing deals. Periodically, they issue reports, plans, designs, drafts, memoranda, layouts, renderings, scripts, or projections—which, in turn, precipitate more meetings to clarify what has been proposed and to get agreement on how it will be implemented, by whom, and for how much money. Final production is often the easiest part. The bulk of the time and cost (and, thus, real value) comes in conceptualizing the problem, devising a solution, and planning its execution.

Most symbolic analysts have graduated from four-year colleges or universities; many have graduate degrees as well. The vast majority are white males, but the proportion of white females is growing, and there is a small, but slowly increasing, number of blacks and Hispanics among them. All told, symbolic analysis currently accounts for no more than 20 percent of American jobs. The proportion of American workers who fit this category has increased substantially since the 1950s (by my calculation, no more than 8 percent of American workers could be classified as symbolic

⁶The physical environments in which symbolic analysts work are substantially different from those in which routine producers or in-person servers work. Symbolic analysts usually labor within spaces that are quiet and tastefully decorated. Soft lights, wall-to-wall carpeting, beige and puce colors are preferred. Such calm surroundings typically are encased within tall steel-and-glass buildings or within long, low, postmodernist structures carved into hillsides and encircled by expanses of well-manicured lawn.

analysts at midcentury), but the pace slowed considerably in the 1980s—even though certain symbolic-analytic jobs, like law and investment banking, mushroomed. (I will return to this point later.)⁷

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THESE three functional categories cover more than three out of four American jobs. Among the remainder are farmers, miners, and other extractors of natural resources, who together comprise less than 5 percent of American workers. The rest are mainly government employees (including public school teachers), employees in regulated industries (like utility workers), and government-financed workers (American engineers working on defense weapons systems and physicians working off Medicaid and Medicare), almost all of whom are also sheltered from global competition.

Some traditional job categories—managerial, secretarial, sales, and so on—overlap with more than one of these functional categories. The traditional categories, it should be emphasized, date from an era in which most jobs were as standardized as the products they helped create. Such categories are no longer very helpful for determining what a person actually does on the job and how much that person is likely to earn for doing it. Only some of the people who are classified as “secretaries,” for example, perform strictly routine production work, such as entering and retrieving data from computers. Other “secretaries” provide in-person services, like making appointments and fetching coffee. A third group of “secretaries” perform symbolic-analytic work closely allied to what their bosses do. To classify them all as “secretaries” glosses over their very different functions in the economy. Similarly, “sales” jobs can fall within any one of the three functional

⁷Sass’s definition of “professional worker” overlaps significantly with my definition of symbolic analyst (although, as I will explain, not all symbolic analysts are professionals, and not all professionals are symbolic analysts). Sass finds that by 1988 professional workers comprised 20 percent of the American labor force. See Sass, *op. cit.*

groups: some salespeople simply fill quotas and orders; others spend much of their time performing in-person services, like maintaining machinery; and some are sophisticated problem-identifiers no different from high-priced management consultants. “Computer programmers” (one of the more recent additions to the standard list of occupations) are as varied: They might be doing routine coding, in-person troubleshooting for particular clients, or translating complex functional specifications into software.

That a job category is officially classified “professional” or “managerial” likewise has little bearing upon the function its occupant actually performs in the world economy. Not all professionals, that is, are symbolic analysts. Some lawyers spend their entire working lives doing things that normal people would find unbearably monotonous—cranking out the same old wills, contracts, and divorces, over and over, with only the names changed. Some accountants do routine audits without the active involvement of their cerebral cortices. Some managers take no more responsibility than noting who shows up for work in the morning, making sure they stay put, and locking the place up at night. (I have even heard tell of university professors who deliver the same lectures for thirty years, long after their brains have atrophied, but I do not believe such stories.) None of these professionals is a symbolic analyst.⁸

Nor are all symbolic analysts professionals. In the older, high-volume economy, a “professional” was one who had mastered a particular domain of knowledge. The knowledge existed in advance, ready to be mastered. It had been recorded in dusty tomes or codified in precise rules and formulae. Once the novice had dutifully absorbed the knowledge and had passed an examination attesting to its absorption, professional status was automatically conferred—usually through a ceremony of appropriately medieval pageantry and costume. The professional was then au-

⁸In the remainder of this book, when discussing symbolic analysts, I shall, on occasion, illustrate my point by referring to lawyers, management consultants, software engineers, and other professionals, but the reader should understand that this is a shorthand method of describing only the symbolic and analytic work undertaken by such professionals.

thorized to place a few extra letters after his or her name, mount a diploma on the office wall, join the professional association and attend its yearly tax-deductible meeting in Palm Springs, and pursue clients with a minimum of overt avarice.

But in the new economy—replete with unidentified problems, unknown solutions, and untried means of putting them together—mastery of old domains of knowledge isn't nearly enough to guarantee a good income. Nor, importantly, is it even necessary. Symbolic analysts often can draw upon established bodies of knowledge with the flick of a computer key. Facts, codes, formulae, and rules are easily accessible. What is much more valuable is the capacity to effectively and creatively *use* the knowledge. Possessing a professional credential is no guarantee of such capacity. Indeed, a professional education which has emphasized the rote acquisition of such knowledge over original thought may retard such capacity in later life.

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How, THEN, do symbolic analysts describe what they do? With difficulty. Because a symbolic analyst's status, influence, and income have little to do with formal rank or title, the job may seem mysterious to people working outside the enterprise web, who are unfamiliar with the symbolic analyst's actual function within it. And because symbolic analysis involves processes of thought and communication, rather than tangible production, the content of the job may be difficult to convey simply. In answering the question "What did you do today, Mommy (or Daddy)?" it is not always instructive, or particularly edifying, to say that one spent three hours on the telephone, four hours in meetings, and the remainder of the time gazing at a computer screen trying to work out a puzzle.

Some symbolic analysts have taken refuge in job titles that communicate no more clearly than this, but at least sound as if they confer independent authority nonetheless. The old hierarchies are breaking down, but new linguistic idioms have arisen to perpetuate the time-honored custom of title-as-status.

Herewith a sample. Add any term from the first column to any from the second, and then add both terms to any from the third

column, and you will have a job that is likely (but not necessarily) to be inhabited by a symbolic analyst.

Communications	Management	Engineer
Systems	Planning	Director
Financial	Process	Designer
Creative	Development	Coordinator
Project	Strategy	Consultant
Business	Policy	Manager
Resource	Applications	Adviser
Product	Research	Planner

The "flat" organization of high-value enterprise notwithstanding, there are subtle distinctions of symbolic-analytic rank. Real status is inversely related to length of job title. Two terms signify a degree of authority. (The first or second column's appellation is dropped, leaving a simpler and more elegant combination, such as "Project Engineer" or "Creative Director.") Upon the most valued of symbolic analysts, who have moved beyond mere technical proficiency to exert substantial influence on their peers within the web, is bestowed the highest honor—a title comprising a term from the last column preceded by a dignified adjective like Senior, Managing, Chief, or Principal. One becomes a "Senior Producer" or a "Principal Designer" not because of time loyally served or routines impeccably followed, but because of special deftness in solving, identifying, or brokering new problems.

Years ago, fortunate and ambitious young people ascended career ladders with comfortable predictability. If they entered a core corporation, they began as, say, a second assistant vice president for marketing. After five years or so they rose to the rank of first assistant vice president, and thence onward and upward. Had they joined a law firm, consulting group, or investment bank, they would have started as an associate, after five to eight years ascended to junior partner, and thence to senior partner, managing partner, and finally heaven.

None of these predictable steps necessitated original thought. Indeed, a particularly creative or critical imagination might even be hazardous to career development, especially if it elicited ques-

tions of a subversive sort, like "Aren't we working on the wrong problem?" or "Why are we doing this?" or, most dangerous of all, "Why does this organization exist?" The safest career path was the surest career path, and the surest path was sufficiently well worn by previous travelers so that it could not be missed.

Of course, there still exist organizational backwaters in which career advancement is sequential and predictable. But fewer fortunate and ambitious young people dive into them, or even enter upon careers marked by well-worn paths. They dare not. In the emerging global economy, even the most impressive of positions in the most prestigious of organizations is vulnerable to worldwide competition if it entails easily replicated routines. The only true competitive advantage lies in skill in solving, identifying, and brokering new problems.