Improving White Collar Productivity in a Shrinking Work Force

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The United States' economy continues to lag in comparison to that of many other developed countries. This is a situation to which American managers are not accustomed and for which they have not been prepared. Growth rates in the U.S. gross national product (GNP), for example, have been discouragingly low. Although the growth rate has been increasing over the past two decades, it still consistently lags behind the GNP growth rates of other industrialized countries. Figure 1 illustrates this problem.

Added to this discouraging growth rate is the fact that businesses by the thousands are failing, and many others are struggling to stay afloat. The total number of new bankruptcy petitions filed by American businesses has steadily increased from 360,329 in 1981 to 642,993 in 1989 (Statistical Abstract, 1991, p. 538). The largest U.S. corporations are not immune to this trend either; many have been experiencing unprecedented losses. The number one-ranked Fortune 500 company, General Motors, suffered a loss of $1.99 billion in 1990. Profits at Ford and Chrysler plunged 70 percent and 81 percent, respectively, during the same time period (Tetzelli, 1991, p. 282). This trend continued in 1991, when these three automotive giants suffered combined losses of about $8 billion (Treece, 1992, p. 35).

Part of this decline can be attributed to the recent recession, but the trend began long before the signs of recession first surfaced. One of the major causes of this economic downswing can be identified by comparing the nature of business activities in the U.S. with that of other countries experiencing rapid economic growth, most notably Japan. In the years since the end of the second world war, Japan has become an economic giant whose strength continues to grow. To sustain its high growth, its business leaders have developed methods of increasing productivity that can be maintained without sacrificing
quality. Although the need for American businesses to increase both quality and productivity in manufacturing has been frequently addressed by the media, what has been continually overlooked is the declining productivity of American white-collar workers.

Productivity is measured by dividing outputs by inputs, where outputs are usually expressed in terms of finished units or the dollar value of finished units and inputs are measured in terms of dollars (materials and/or labor) or hours (human and/or machine) used in production. Measuring the productivity of blue-collar workers is relatively simple since their inputs and outputs are much more tangible and easily determinable than those of their white-collar counterparts. When determining the productivity of white-collar workers, what should be used as units of input and output? This problem makes measuring their productivity a difficult task. Because white-collar workers are usually the highest paid employees on most payrolls and because the growth in white-collar employment exceeds that of blue-collar employment, maintaining or improv-
ing white-collar productivity should be a high priority. Due to the difficulty of measurement, however, pursuit of this goal is often neglected. In order to regain their status as world economic leaders, American managers must be concerned with improving the productivity of their white-collar workforce.

This article will describe the current state of American white-collar productivity and where it seems to be heading. Then it will explain why changes must be made in order for America to remain competitive and offer suggestions for the implementation of these changes. Finally, the article will identify a longer term reason for increasing white-collar productivity—the lack of qualified people that will be available to fill white collar positions in the coming decades as a result of the “baby bust.”

A SHIFT TOWARD THE OFFICE

With the advancement of the computer age, America’s workforce composition has changed. In 1940, there were 16.4 million blue-collar workers and only 14.6 million white-collar workers employed in the United States (Statistical Abstract, 1951, pp. 183-185). Today this ratio is dramatically changed. Lester C. Thurow, Dean of the College of Business at the Massachusetts Institute of Technology, has estimated that in 1984 there were 57 million white-collar workers and only 29 million blue-collar workers, or nearly a 2-to-1 ratio of white-collar to blue-collar workers (1985, p. 14).

A CAUTION REGARDING DEFINITIONS

When attempting to classify individuals and their jobs into white-collar and blue-collar groups, a complicated problem becomes apparent: there is no single standard for defining these terms. Some occupations, such as the Chief Executive Officer of a corporation, are easily classified as white-collar. Likewise, a worker on a traditional automobile assembly line can be clearly seen as blue-collar. However, when such assembly line work is combined with other responsibilities, such as quality control, classification becomes more difficult. Automobile mechanics offer a similar conundrum. The tasks they perform are basically monotonous and do not require a great deal of creativity, so they do not seem to fit the white-collar profile. On the other hand, auto mechanics do not really “manufacture” anything, so they seem out of place in the blue-collar category, too. Auto mechanics and food service workers are part of the service sector. This sector of the economy, with a compound growth rate of 2.12
percent per year over the past 49 years, is clearly one of the fastest-growing occu-
cupational categories. This can be seen in Table 2:

Table 2
Employment by Occupational Type, 1940-1989 (in thousands)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Clearly White-Collar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional/Technical</td>
<td>3,345</td>
<td>4,490</td>
<td>7,475</td>
<td>11,140</td>
<td>15,613</td>
<td>19,195</td>
</tr>
<tr>
<td>Managers/Officials</td>
<td>3,749</td>
<td>6,429</td>
<td>7,067</td>
<td>8,289</td>
<td>10,919</td>
<td>14,848</td>
</tr>
<tr>
<td><strong>Probably White-Collar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerical</td>
<td>N/A</td>
<td>7,632</td>
<td>9,783</td>
<td>13,714</td>
<td>18,105</td>
<td>18,416</td>
</tr>
<tr>
<td>Sales</td>
<td>N/A</td>
<td>3,822</td>
<td>4,401</td>
<td>4,854</td>
<td>6,172</td>
<td>14,065</td>
</tr>
<tr>
<td><strong>Questionable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>5,570</td>
<td>6,535</td>
<td>8,349</td>
<td>9,712</td>
<td>12,958</td>
<td>15,556</td>
</tr>
<tr>
<td><strong>Clearly Blue-Collar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craftsmen/Foremen</td>
<td>5,056</td>
<td>7,650</td>
<td>8,560</td>
<td>10,158</td>
<td>12,529</td>
<td>13,818</td>
</tr>
<tr>
<td>Operatives</td>
<td>8,252</td>
<td>12,146</td>
<td>11,986</td>
<td>13,909</td>
<td>13,814</td>
<td>13,134</td>
</tr>
<tr>
<td>Nonfarm Labor</td>
<td>3,064</td>
<td>3,520</td>
<td>3,665</td>
<td>3,724</td>
<td>4,456</td>
<td>4,888</td>
</tr>
</tbody>
</table>


How should "services" be classified within the traditional white-collar/blue-collar categories? There are almost as many different solutions to this problem as there are people to propose them. Some service jobs seem to fit into the white-collar sector, while others would more accurately be classified as blue-collar, and still others are hybrids with some characteristics of each. Table 2 shows that in 1989 there were 66.5 million white-collar workers, 31.8 million blue-collar workers, and 15.6 million service workers employed in the U.S. If the service category is included within the white-collar classification, then in 1989 there were 82.1 million white-collar workers and only 31.8 million blue-collar workers. However, if the service category is included within the blue-collar classification, then in 1989 there were 47.4 million blue-collar workers and 66.5 million white-collar employees. As this example illustrates, the same statistics can be made to look quite different, depending upon the classification system that is employed.

Further complicating the problem is the issue of "enriched jobs" which is defined as redesigning a job in order to increase its motivating potential. Job design programs attempt to increase the variety, significance, identity, au-
tonomy, and feedback in order to motivate employees. This can involve the addition of some responsibility and decision-making authority for employees who were previously considered to be blue-collar (Fisher, 1990, pp. 386-388). Does the blue-collar classification fit for these workers, or does their added authority cause them to be grouped with white-collar employees? Some suggest a new classification of "gray-collar." Because the various sectors are so difficult to classify accurately, the best solution is to make sure that, when comparing white- and blue-collar data, the same approach to classification has been used for each. Otherwise, the result will be an apples to oranges comparison: For the purposes of this article, services will be treated as a separate job classification category in order to avoid misleading conclusions.

**HOW HAVE MANAGERS REACTED TO THE COMPUTER AGE?**

There are two major reasons for the changing ratio of blue-collar to white-collar workers. First, the computer age has changed the nature of information and communication. Because computers have the capability of generating vast amounts of information, more people are often needed to identify the relevant information and disseminate it to the people who need it. Second, the number of blue-collar workers required to make a product has dropped dramatically, due to advancements in production technology and job design which have contributed to much improved blue-collar productivity.

It seems paradoxical that technological developments have resulted in a decline in white-collar productivity while increasing blue-collar productivity, yet that is precisely what has happened. As Professor Thurow explains: From 1978 to 1984, real output rose 14 percent in the United States. Employers trimmed their blue-collar payrolls by more than 2 million workers, or 6.6 percent. As a result, blue-collar productivity, or output per hour of work, rose more than 20 percent — a good performance.

But this gain was almost completely wiped out by a decline in white-collar productivity. White-collar employment rose by more than 10 million, or 21.5 percent, and thus productivity actually fell — by 7.5 percent. This decline destroyed much of the gain in blue-collar productivity and yielded an increase in American industrial productivity of less than 1 percent per year. That is far below the 3 to 5 percent levels achieved by our European and Pacific competitors (Thurow, 1985, p. 14).

Although American managers and executives were able to incorporate the new technology into their manufacturing operations effectively and efficiently,
they seemingly have been unable to apply similar methods in the other areas of their businesses to improve efficiency at the white-collar level. The prevailing approach to processing more information has been that more people are needed to handle this abundance of information. While this may actually be true in some cases, many companies could handle the changes more efficiently by restructuring existing jobs to take advantage of the new technology without adding unnecessary layers of management. Michael Hammer, president of Hammer and Company, an information technology consulting firm, suggests that many investments in information technology have yielded disappointing results because firms are simply using the new technology to mechanize existing business practices, rather than changing those practices to create more modern systems that can fully utilize computer technology. He urges managers to "reengineer" their businesses by using the current information technology to redesign their business processes completely. He states, "At the heart of reengineering is the notion of discontinuous thinking—of recognizing and breaking away from the outdated rules and fundamental assumptions that underlie operations. Unless we change these rules, we are merely rearranging the deck chairs on the Titanic" (Hammer, 1990, pp. 105-107). As managers attempt to duplicate the Japanese feat of increased productivity in their factories, are they taking time to evaluate their own white-collar efficiency? In far too many cases, the answer to this question is a resounding "no." In a study of executive productivity, The American Management Association asked white-collar workers to respond to questions regarding their own productivity. One questions was, "Has your organization made a special effort to evaluate executive productivity over the last three years?" Of the 1,265 respondents, only 36 percent answered "yes" while 54 percent answered "no." Ten percent of the respondents were uncertain (Jacobs, 1974, p. 18). Although American managers seem eager to gauge the productivity of blue-collar employees, they appear to be somewhat reluctant to check up on themselves.

This is partially understandable, for increasing their own productivity might mean they would have more work to do or that they would have to perform seemingly less attractive, more routine tasks. In some cases, they might even discover that the organization would be better off without them. Those white-collar workers who feel this way, however, should be reminded of the dramatic downturn in white-collar productivity, a trend which, if it continues, could spell the end of their companies altogether. Given the choice of tightening their belts or closing their doors, most executives would probably choose the former.
 Downsizing the white-collar staff is not the only solution, however, nor even the best one to the productivity problem. Richard W. Larson and David J. Zimney, management consultants for IBM, caution against arbitrary streamlining:

> We see many companies eliminating professionals and managers to reshape or streamline their business[es]. A few are doing it right, but most are simply reacting . . . Such downsizing seldom eliminates work at all. If it does, it is usually creative work, not routine. Instead, most downsizing unintentionally results in more routine work being done by the remaining professionals and creates hiding places for poor performers who now are "too busy" with routine work to take on the challenge of creative work. (1990, pp. 127-12)

Simply cutting out layers of management or other white-collar workers seems to be the prevailing approach to cutting costs and increasing efficiency. Unless work processes are restructured to accommodate this smaller staff, the results of the downsizing are likely to be disappointing.

**HOW DO WE RESTRUCTURE?**

Doing away with unnecessary tasks is a good first step. Many managers have conducted studies of the flow of information (raw data, memos, verbal instructions and ideas, etc.) within the organizational structure by looking at each white-collar worker's job responsibilities both as an individual and as part of a team. In this manner, managers or management consultants have been able to redesign departments or entire organizations so that all essential tasks are completed with a minimal amount of time, effort, and paperwork.

In the early 1980's, for example, Ford Motor Company managers were looking for ways to cut costs. A way was found in the accounts payable department. Management had always assumed that its accounts payable staff of five hundred was of reasonable size until someone discovered that Mazda had only five people in its comparable department. Even when the numbers were adjusted to take into account the size differences of the two companies, the figures were still troubling. The cause of this unnecessarily large accounts payable staff turned out to be the paperwork required to place an order. When a purchasing agent placed an order, a purchase order was sent to the vendor, and a copy was sent to the accounts payable department. When material control eventually received the goods, a copy of the receiving document was sent to accounts payable. In the meantime, the vendor had sent an invoice to accounts.
payable. When all of this paperwork was received, the accounts payable staff had to match the receiving document to the invoice and the purchase order before a payment could be made. Most of the department's time was spent trying to fix mismatches, when the various documents were inconsistent (Hammer, 1990, p. 105).

In an attempt to solve this paperwork crisis, Ford introduced “invoiceless processing.” All information needed by various departments is now entered into an on-line database. No internal paperwork is necessary. When goods arrive, the accounts payable staff simply checks the database to make sure the goods were actually ordered. Then payment can be made. By making this change, Ford has been able to decrease its accounts payable staff by 75 percent. Further, material control and financial information is now much easier to use and is more accurate (Hammer, 1990, pp. 105-106).

Paper, ironically, is the biggest detriment to white-collar productivity. Andy Jolley and Alan Patrick, management consultants with Coopers & Lybrand Deloitte, facetiously suggest that productivity might best be achieved by connecting printers directly to shredders. In this way, the middle person would be eliminated (1990, p. 102). By eliminating unnecessary paperwork and learning to prioritize and streamline the preparation of routine work, management’s time can be reallocated to more important and creative work.

A second way to increase white-collar productivity would be to decrease “white-collar rework.” In the factory, rework means fixing a defective product, whereas in the office it involves explaining ideas twice, handling complaints, correcting records containing errors, and similar activities (Jolley, 1990, p. 102). If ways can be found to decrease these activities (without generating more paper!), the cause of productivity would be well served.

A third alternative solution for increasing productivity would be to decrease “set-up” time. In the factory, the down time required to set up for the next production run reduces productivity. The longer the downtime and more frequent the set-ups, the more productivity is adversely affected since no output is being produced. The office operates similarly. According to Jolley, it takes about twenty-five minutes of uninterrupted work to reach a concentration level sufficient for mentally difficult work. What is the most common interruption experienced by office workers? The telephone! A mere two calls an hour would prevent an employee from ever reaching the necessary level of concentration (1990, p. 102).

Henry Mintzberg, a professor of management at McGill University, conducted a study of management styles that confirmed this problem. He found
that managerial tasks have the following qualities: fragmentation, variety, and brevity. Fragmentation (interruption) is the important issue here. Often white-collar workers are so concerned about keeping up with changes in the organization on a minute-to-minute basis that they are willing to sacrifice the time they need to do more intellectual, meaningful work (Mintzberg, 1973, pp. 31-35). Recognizing this proclivity, wise managers will set aside time during the day when people who require concentration may work without being disturbed.

Every company and internal department is different. Each manager must identify which methods for restructuring work and reallocating time are most appropriate. Furthermore, since most work units in an organization are interdependent, it is necessary to understand the inter-relationships in communication and information flows so that the right people are informed in a timely manner. Since it is often difficult for an employee or even an entire department to recognize what is best for the organization as a whole, it is often advisable to bring in an outsider for this task—someone who understands the industry, but who has no preconceived impressions of how this particular organization operates. Such an outside consultant may be better able to study the organization’s problems, draw objective conclusions from the observations, and suggest creative solutions. Dr. Peter G. Sassone of the Georgia Institute of Technology, for example, observed 184 managers over a period of five years. He determined that those managers spent only 27 percent of their time attending to management-level responsibilities such as decision-making and staff supervision (Pasternak, 1991, pp. 22-23). The rest of their time was spent in non-managerial capacities such as professional and technical support activities, and also in such clerical activities as filing, typing, and making copies. Based on these findings, Sassone suggested a typical office could restructure to take better advantage of each employee’s intellectual specialization and do an office re-engineering analysis to determine the optimal number and type of staff (Pasternak, 1991, pp. 22-23).

Which method of restructuring (or combination of methods) managers use is relatively unimportant. What matters is the level of success that is experienced. In order to reverse the decline in white-collar productivity and improve competitive advantage for American businesses, U.S. managers must be creative. What has worked yesterday is no longer appropriate in today’s high technology environment. Instead, managers need to develop systems that will work in the even more complex world of tomorrow.
THE BABY BUST PROBLEM

Increasing white-collar productivity is not just an idea that will help enhance U.S. businesses in the short run. In the future, American offices will have to be highly efficient and productive because there will not be enough qualified white-collar workers to waste in inefficient capacities. The baby boomers are now well established in the workforce. They will begin retiring in about fifteen years, although the main impact will not be felt until around the year 2020. Replacing them will prove to be quite a challenge, however, because there simply will not be enough people available to take their places. The baby bust generation is entering the job market now, and there are not enough of them to go around.

The group that is generally referred to as the baby boom generation includes those people born between the end of World War II and 1965. The population growth during this time was dramatic, with fertility rates 28 percent higher than those during the next generation (Cornell, 1987, p. 28). The baby bust generation began around 1965 and extended until 1980. During this period, fertility rates dropped substantially. According to Cornell (1987), the drop was due to increasing use of the Pill, legalized abortion, and shifts away from traditional family structures. In 1975 the birthrate fell to 14.6 newborns per 1,000 Americans which was the lowest in U.S. history (p. 28). This can be seen in Table 1:

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<tbody>
<tr>
<td>Total Number of Births (millions)</td>
<td>3.6</td>
<td>4.3</td>
<td>3.7</td>
<td>3.6</td>
<td>4.0</td>
<td>3.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Rate per 1,000 Population</td>
<td>24.1</td>
<td>23.7</td>
<td>18.4</td>
<td>15.9</td>
<td>16.2</td>
<td>12.6</td>
<td>12.3</td>
</tr>
</tbody>
</table>


As a result of lower birthrates in recent decades, coupled with medical advances which extend life expectancy, the average age of the U.S. population is increasing. This aging of the American populace has received its share of publicity, primarily focusing on the problem of providing Social Security and Medicare to baby boomers when they begin to retire during the first quarter of the 21st century. Funding such government programs for the large number of future retirees is not the only dilemma facing America, however. Executives must ask themselves is: “Who will replace all of these retiring workers?”
The number of people available to fill white-collar jobs is decreasing, and it will continue to decrease into the early part of the 21st century, as shown in Table 1. Although these job-hunters should have an easier time finding jobs than did their parents (members of the baby boom generation), their initial progress up the corporate ladder will be hindered by the presence of the large group of baby boomers ahead of them. However, as the older generation retires, the “baby busters” will be able to move relatively quickly up the corporate ranks.

The most intense competition for white-collar graduates is expected to be in technical occupations, such as electrical engineering and computer science (Williams, 1985, p. 122). The fight for graduates will not be limited to these areas, however, as the decrease in college students can be seen across campuses. The number of college graduates is expected to decrease throughout the first half of the 1990’s and possibly past the turn of the century. This number is projected to drop from a high of about 970,000 in 1984 to 870,000 in 1994. This trend is illustrated in Figure 2.

Figure 2: Decrease in Number of College Graduates
(Williams, 1985, p. 124).

Data compiled by the editors of *The Chronicle of Higher Education* support this trend. They project that between 1988 and 1997, the number of degrees conferred at all levels will decrease from 1.39 million to 1.31 million, a compound annual growth rate of -.59 percent during this time (Almanac of Higher Education, 1991, p. 200).
Besides making new recruits harder to find, the drop in the number of college graduates has other implications for American businesses. It means that the average age of any given company’s employees will be increasing. This could make improving productivity more difficult. As Michael S. Teitelbaum and Jay M. Winter (1986) point out: “an older labor force could be more resistant to change than a younger one. An older worker might be less likely to undergo an educational or apprenticeship process again and conceivably be more set in his or her ways” (p. 106). This factor should induce business to make needed productivity changes now while the labor force is young and relatively more adaptable.

CONCLUDING THOUGHTS

Knowing what changes lie in store for them down the road, how can rational managers and executives simply ignore the problem of their own sagging productivity? It is in the best interests of all involved—blue-collar employees, white-collar employees, other stakeholders in companies, and Americans in general—to implement strategies now that will begin to reverse this discouraging trend in white-collar productivity. In factory settings many different raw materials and component parts are necessary to make a product. Replacements for defective inputs are secured relatively easily. But, as Jolley notes, “in offices, people are the key resources. As the demographic timebomb ticks away, and staff become increasingly scarce, motivating and training them will be ever more crucial” (1990, p. 102). If American businesses are to survive and succeed in a global environment, they must meet this problem head-on and deal with it effectively while there is still time to do so.

References


