



# THE END OF OVERHEAD

*Enterprises strive to eliminate expertise-oriented overhead and improve the productivity of knowledge workers.*

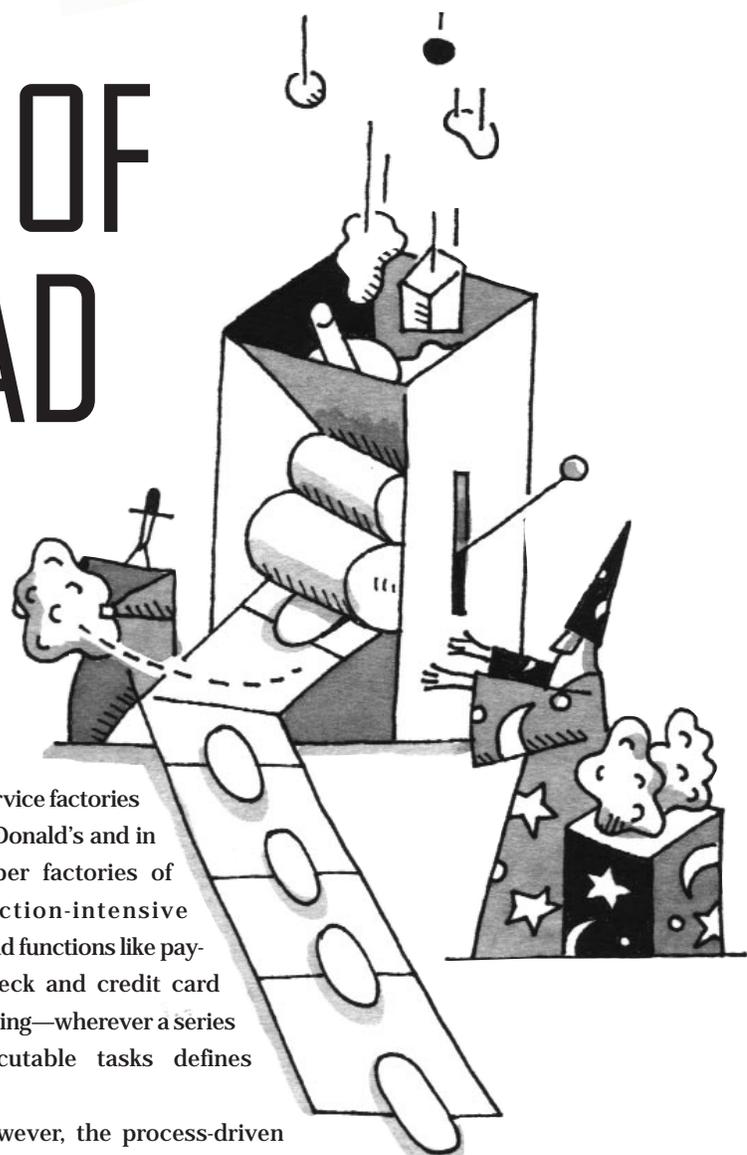
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**S**INCE ADAM SMITH introduced the concept of the division of labor, businesses have improved productivity by organizing work around increasingly efficient processes. They drive productivity improvements by re-engineering, changing process technologies, automating processes and focusing management's attention on productivity (while maintaining quality and service levels or increasing them). The process-driven approach has proved effective not only in factories, but al-

so in service factories like McDonald's and in the paper factories of transaction-intensive overhead functions like payroll, check and credit card processing—wherever a series of executable tasks defines work.

However, the process-driven approach has not resulted in sustained improvements in sales or in expertise-oriented staff functions — like marketing, legal, credit, treasury, en-

gineering or customer service — where work requires more decision-making than task execution. Despite



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periodic downsizings and megamergers justified by their cost-reduction potential, overhead in major corporations is not decreasing. And the inevitable consequence of improving the productivity of workers in the factories while staff productivity remains unchanged is that the proportion of staff is increasing in most companies. This relative increase in overhead is exacerbated by other more direct factors such as the increasing regulations of today's complex society, the demands of globalization and, as Peter Drucker has observed, the fact that "knowledge workers are abysmally unproductive."

We believe that organizations should set the objectives of eliminating their expertise-oriented overhead staffs and significantly reducing costs, while improving both the quality of decisions and service to customers. Like goals of "zero waste" and "six sigma quality," the "eliminate expertise-oriented overhead" objective can motivate significant and rapid improvements in productivity, quality and service — even if the objective is never reached. The key is to take a different approach from the process engineering that has worked so well in the factories. And the improvements can be achieved even if the causes of increased expertise-oriented overhead remain.

#### A NEW DIVISION OF LABOR

The new approach is based on a different kind of division of labor—based not upon the traditional division by operation in a process, but rather upon a division by the depth of

expertise required. The concept of a division of mental labor is not new: Charles Babbage, the 19th-century British economist who is generally considered the father of computers, illustrated the idea using the French government's unique approach in the late 18th century to the production of the first extensive set of logarithmic tables (for the numbers from 1 to 200,000). Without modern tools, this was a daunting task. For example, in the early 17th century, the mathematician Henry Briggs worked for two years to simply change the base (from Napier's base to base 10) of the logarithms for the numbers 1 to 1,000.

According to Babbage, the French created the massive tables with unprecedented speed and accuracy by organizing the work into three levels of expertise:

- **Mathematicians:** five or six of the most eminent mathematicians in France worked together to develop formulas that could be used to calculate logarithms using only simple addition and subtraction.
- **Managers:** seven or eight people with sufficient mathematical expertise to understand and apply the work of the mathematicians translated the formulas into numerical templates that, when filled out, would generate tables of logarithms. They then planned and supervised the activities of the people who performed the basic arithmetic operations, verifying accuracy using formulas (that is, without duplicating the arithmetic calculations).
- **Semi-skilled workers:** 60 to 80 people, skilled only in addition and sub-

traction, performed the calculations to fill in the templates.

In addition to the greater efficiency, the French approach turned out to be more accurate than having mathematicians do the calculations — experts tend to make mistakes on unchallenging, routine matters.

Owens-Corning has employed an expertise-based division of labor to reduce substantially the costs associated with tens of thousands of personal injury claims. After observing huge variations in the cost of "similar" cases, the company, with the help of outside experts, developed standard methods for major components of the litigation. These included answering complaints, taking and using plaintiff depositions, making and tracking summary judgment motions and managing communications. All in-house and field counsel (generalists, not personal injury experts) used these methods on standard cases — while exceptions were managed through work orders explicitly defining the role of an outside expert. This expertise-based division of labor resulted in both savings of more than \$10 million annually and better results in the courtroom.

Information technology makes the concept of a division of mental labor even more powerful by equipping line workers or even customers with the expertise to make routine decisions. We are all familiar with successful examples of this approach: American Express provides credit scoring directly to customer service agents; Federal Express and United Parcel Service make package tracking

available to customers; Dell Computer shares its configurator with key clients via the Internet; leading package goods companies like Procter & Gamble, Tropicana and Kellogg equip their sales forces with tools to evaluate promotion effectiveness while in negotiations with customers.

The first step in the mental division of labor is to create a standard approach to the relatively routine 20 percent of situations that represent 80 percent of the expert staff's workload. By providing information and tools that use the standard approach to line workers or customers who are not expert in the function, the overhead staff members who had participated in the decisions can be eliminated. The advantages in cost and service are obvious: fewer workers are required, response times are reduced, and customers or front-line employees are happier because they make the decisions themselves. In our work with clients, two concerns are usually expressed: will the quality of decisions be reduced, and can control be maintained?

Our experience is that, in fact, standard approaches to routine decisions improve quality, even for complex issues like pricing, where most companies depend on expert judgment. For example, one leading building-products manufacturer that had made decisions about the pricing of commercial bids by a time-consuming consultation process involving centralized pricing experts and the field sales force shifted to an analytically based pricing structure (and supporting tools) that could be imple-

mented by the sales force for about 80 percent of the bids. Price realization increased by more than one percentage point in the first year and even more in years two and three. Control was assured by changing the incentives of the field sales force from volume-based to profit-based; this was coupled with training and selective auditing of decisions. The improvement in quality resulted from extensive analytical effort, which developed a set of rules that proved even more powerful than the judgment of an expert, and from systematically using more and better data in making the pricing decisions.

An even more dramatic improvement occurred in the electrical products industry. A decade ago, a contractor who wanted a bid for a panelboard or switchboard (which are usually partially customized) had to wait a week or two for the distribu-

tor to contact a manufacturer who in turn created a customized quotation. General Electric's ED&C division created and gave to its distributors easy-to-use pricing software for the simple panelboards and switchboards that represent the majority of the market. Using the G.E. software, distributors discovered a sizable market segment that valued immediate response, and G.E. improved both its price realization and its market share. One of G.E.'s competitors started to develop the pricing software two years before G.E., but because this company tried to develop comprehensive rules that would apply to all panelboards and switchboards (not just the routine), it still had no product two years after G.E.'s deployment.

The second part of the mental division of labor is to outsource the most complex (often most critical) decisions to the real experts. Internal



overhead staff, though often highly competent, can never maintain truly leading expertise for two reasons. First, leading expertise has to be continually renewed through application to the most demanding problems, and few, if any, corporations face a steady enough diet of sufficiently challenging problems in any staff function. Second, and more important, competition forces outside experts to hone their expertise continually: no company's internal measurement and reward system is as powerful as the natural force of competition. Hence, this second part of the division of mental labor is a shift from a staff activity in one corporation to the core line of business of another concern.

Outsourcing the most complex decisions significantly increases both the quality of decisions and service levels. If properly managed, actual costs usually decrease slightly. Owens-Corning reduced overall costs

while employing outside "field" experts to handle nonstandard cases. Allegiance Healthcare and Prudential Insurance have also learned to narrowly focus outside experts on the most difficult issues and to minimize the inefficiencies in teaching the expert about the company by making information about prior and ongoing cases available across company lines.

Another powerful example of outsourcing expertise is LSN, the Legal Services Network: a consortium of senior attorneys (many of whom are academics) with deep expertise in narrow areas of legal doctrine. Law firms and corporate law departments increasingly turn to these experts for help with complex issues. While far more expensive on a per-hour basis than the new associate who has traditionally conducted research for litigation, these seasoned experts take less time to deliver a better set of understandings.

The final group in the mental division of labor (analogous to the "managers" who supervised the development of the French logarithm tables) is responsible for: selecting the standard approaches, coordinating delivery to the line or customers and managing outsourcing, supervising and insuring quality. Initially, this group must make decisions that require medium levels of expertise; over time, as the 80/20 rule is applied repeatedly and standard approaches are developed to address a broader variety of decisions, this group increasingly focuses on management and assurance of the effective application of expertise — a focus that requires background and understanding of the business at least as much as of the field of expertise.

The implications of the mental division of labor will be as profound for the knowledge age as the process-based division of labor was for the industrial age. Companies will both eliminate expertise-driven overhead and better manage the productivity of knowledge workers. Line workers benefit from increased scope and a greater ability to serve customers. Customers gain speed, flexibility and lower cost—whether they make decisions on their own or in concert with well-equipped and knowledgeable line workers. Finally, the apparent losers—today's expertise-based overhead—can win either by shifting to the line in their current business or by joining a business that provides truly leading edge expertise. **SB**



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