

The Worker-Centric Warehouse: A Manifesto

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1 Introduction

From both a practical and a theoretical perspective, the goal of warehouse design has long been to meet operational requirements of quality, throughput, and service at minimum cost to the firm. The goal is understandable: distribution centers affect the “bottom line” in the wrong direction, so minimizing building and operating costs maximizes benefit to the firm ... or does it?

It is widely believed that the United States, if not the entire industrialized world, will soon face a shortage of skilled workers. Declining birth rates and the retirement of the Baby Boomer generation reportedly will leave companies competing for a smaller pool of qualified labor (Wolfe, 2007). At a recent summit of material handling and logistics executives, attracting and keeping quality labor was identified as a top concern (Ogle and Montreuil, 2008). In such an environment, the minimum-cost warehouse seems less appealing, both to the worker and to the firm. A distribution center unable to attract and retain qualified workers will be forced to deal with high worker turnover and its associated problems, and perhaps even with unfilled positions. What can be done?

One approach is simply to increase the pay of potential workers. This seems reasonable enough, but increasing the cost of labor has an obvious, negative effect on profits. Moreover, increasing wages in one industry tends, in a competition for labor, to increase wages in other industries, which fails to resolve the original problem of attracting and retaining qualified workers.

We believe a better approach is to rethink the nature of the work itself and ask, “Can we do better? Can we make distribution work more attractive to the labor

force?” What would it take, from a design and management perspective, to make workers truly want and enjoy jobs in distribution?

Questions such as these have led to an initiative we call *Worker-Centric Warehousing*, which puts the worker at the center of the design and asks, “What should the warehouse look like?” The goal is not to throw cost and productivity out the window, but rather to discover, and in some cases simply to communicate what is already known about, attributes of the distribution workplace that are most satisfying and appealing to workers. The long-term vision is to transform warehouses in the distribution industry into great places to work.¹

To realize this vision, we must change the mentality of distribution executives, warehouse designers, and warehouse managers to make the concerns and well-being of workers a primary consideration. We are not contending that workers have been summarily ignored in the past, but rather that worker concerns have been left almost entirely to managers and (in some cases) labor unions, who must make the best of facilities, operational processes, and material handling technologies that were *designed* with the almost singular goal of meeting operational requirements at minimum cost.

2 Strategy

How then to change the mentality of participants from multiple industries involved in the task of designing and managing distribution centers? We propose a three-point strategy:

1. Construct and communicate a consistent, coherent message of the need for worker-centric design.
2. Establish best practices to which companies can aspire and competitions or certifications that provide the motivation to do so.
3. Establish worker-centric thinking in business and engineering education.

A compelling message

A major challenge for this initiative is communicating exactly what is worker-centric design and why firms should be interested in it. Which is to say, we have a problem of *definition and communication*.

¹The phrase “great places to work” is an intentional allusion to the Great Place to Work Institute, which conducts the annual 100 Best Places to Work survey for Fortune magazine.

Task 1 *Create a clear, concise statement of the worker-centric design concept.*

Because worker-centric design involves several disparate disciplines, it is imperative that we develop a definition of the concept that is both precise and readily understood by a wide range of practitioners and academics. Our experience suggests that this is easier said than done, due primarily to the multi-disciplinary nature of the problem. We have found it effective to communicate the concept in the form of a simple question:

If you were to design a warehouse in which your own children had to work, what would it look like?

Despite its simplicity, this question confers a wide scope of issues, from the physical environment of the warehouse, to the work experience inside, to the culture created by management and co-workers. We should also add that such a design goal is not antithetical to the traditional idea of maximizing productivity. Every parent, we contend, wishes his or her child to be productive and successful. There is no virtue in losing money.

Task 2 *Communicate the message of worker-centric design to industries involved in the design and operation of warehouses.*

After developing a clear and concise statement of the concept, there is a need to communicate it to the several industries that can effect positive change. A comprehensive marketing campaign would include a significant, informative website, seminars at industry events and tradeshow, articles in the trade press, academic articles, and so on.

We also believe a summit, similar in spirit to the Material Handling & Logistics Summit held in 2007, would be beneficial for the worker-centric warehousing initiative. Attendees should include end-users, consultants, design/build firms, material handling integrators, academics, and human resource experts. Such an event could be heavily promoted, with invitations extended only to “honored representatives” from each industry group. Press releases, proceedings, and other post-summit output would help generate interest in the concept.

Best practices

The second strategy, which should begin immediately, is to assemble a set of best practices which distribution centers could aspire to adopt.

Task 3 *Conduct a comprehensive study of “the state of the distribution worker.”*

As described in Canterbury (2009), little is known about how distribution workers perceive their work experiences. Distribution workplaces vary by place, of course, but we believe there is a large enough set of common activities and environmental attributes to make general statements possible. Because the design goal of making distribution centers worker-centric is itself new, research must be done to determine which attributes of a work experience are most important to workers and how those attributes can best be fostered at the design stage. Such a study should consider the possibility that worker preferences could vary by geographical region, among other variables. For example, we know of a warehouse near Miami which claims no need for air conditioning because nearly the entire workforce is from the Caribbean islands.

Task 4 *Build on established green and sustainable design practices to incorporate human concerns into the design of distribution facilities.*

Recently, there has been considerable interest in environmentally sustainable design, which has resulted in “green buildings” that reclaim waste water, use wind and solar power, provide natural lighting for workers, and so on.² Although they benefit from many of these design features, workers are not central to the goals of sustainable design. However, it is easy to imagine extending the goals of sustainable design to consider — as a primary goal — the well-being of workers. The ideal outcome would be as great a concern for “human buildings” in the future as there is for “green buildings” today.

Task 5 *Establish a certification system that encourages and rewards worker-centric design.*

Developing a comprehensive set of best practices in worker-centric design will do no good if warehouse designers and managers have no incentive to implement them, but the same could have been said for environmental design 30 years ago. The success of the Leadership in Energy and Environmental Design (LEED) program is a case study for how to implement change in the design and operation of facilities. Central to the LEED “movement” is a ratings system, which awards Certified, Silver, Gold, and Platinum certifications to buildings. We envision a similar system for “worker-centricity,” which would set out specific requirements for distribution centers to achieve. An accepted, industry-wide ratings system would motivate designers and managers to develop and maintain increasingly high standards of worker-friendly practices.

²Examples include the Herman Miller factory in Holland, Michigan and the Kettle Foods factory in Beloit, Wisconsin.

Task 6 *Apply existing knowledge of job design, job rotation, and job enhancement to the warehouse environment to develop a set of published best practices for the industry.*

Much of what needs to be done to make warehouses more worker-centric has been known to industrial management for decades. What has been lacking is broad, specific application of these principles to the distribution center environment. Part of assembling a set of best practices for worker-centric warehousing should be, for example, a thorough review of existing knowledge in classic subjects of industrial engineering, such as job design, job rotation, and job enhancement. Similar knowledge certainly exists in the fields of architecture, interior design, and human factors, among others.

Changing education

Effecting large-scale change to an entire industry likely will take at least a generation, so we must think of educating those who will design and manage the warehouses of tomorrow. Hence the need to incorporate worker-centric thinking into business and engineering education.

Task 7 *Build new relationships among the disciplines concerned with the design of industrial facilities and the workers who inhabit them.*

The nature of worker-centric warehousing *requires* disparate disciplines to work together—architecture, construction, industrial engineering, human resources, management, interior design, etc. In the academic world, where much of the research supporting worker-centric design will happen, multi-disciplinary research is notoriously difficult to execute.

We recommend two ways to move forward: For academic development, a center should be established to coordinate the work from multiple disciplines. Such centers are common in leading universities. On the industry side, a consortium might be established by an organization such as the Warehouse Education and Research Council (WERC).

Task 8 *Introduce worker-centric design into appropriate business and engineering curricula.*

In industrial engineering programs at least, the profit and management perspective on problem solving is dominant. Objectives in operational research almost always are to minimize cost or maximize throughput, and, due to the need for simplifying assumptions, workers are almost always treated as “constant rate production machines.” This thinking must be reformed. Other disciplines do a better job

of addressing the human perspective, no doubt, but we believe it is fair to say that worker concerns are not at the forefront of teaching and research in warehouse design and operations. The College-Industry Council on Material Handling Education (CICMHE) is the best conduit through which new perspectives might be introduced to academia.

3 Resources

Realizing the vision of worker-centric warehouses will require leadership and money.

Task 9 *Establish a knowledge center for worker-centric design.*

Initially, such a center would likely be in a university, where access to researchers in multiple disciplines is available. In time, a university center might secure funding from government sources to help with development. Eventually, an impartial certifying organization should be established to direct the initiative and rate warehouses according to established standards. More research is needed on this topic; it would be helpful to know how the the U. S. Green Building Council, which runs the LEED program, came about.

Before an academic or industry center can be considered, one or more individuals must be identified who have a passion for the topic. Such a person would provide leadership and coordination to the many parties necessary for the initiative to succeed. The ideal candidate would easily move between academic and industry organizations.

Task 10 *Establish funding sources for research, development, and marketing.*

Developing and promoting an initiative such as this will require money. Many potential sources should be considered, including the retail and distribution industries, labor groups and unions, the material handling industry, private donors, and even government. We believe initial funds should go toward a study of the state of distribution workers (Task 3) and securing the services of an individual to drive the development (Task 9).

References

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