Jobs and the Environment

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Jobs versus the environment is a familiar refrain, but it is wrong. Just a decade ago, laid off steel mill workers gathered along the banks of the Allegheny River just outside of Pittsburgh and threw their hardhats into the river shouting, "Let the EPA clean up this mess!"--providing a poignant, if tragic, illustration of the long-held notion that economic and environmental objectives are contradictory. Yet, the potential now exists to integrate economic and environmental transforation and achieve environmental improvement and economic growth at the same time.

For the first time in decades, the connection between economic development and the environment is coming clearly into focus. Since the 1970s, the relationship between environmental quality and economic growth was expressed in terms of a sound environment being a prerequisite for the location of advanced business enterprises. In this regard, environmental quality was a "quality of life" factor that determined a region's ability to support high-value economic activity. However, this perspective failed to identify the specific linkage between environmental conditions and the competitive advantage of firms and regions.

Recent research by Harvard's Michael Porter and researchers and scholars at Harvard, MIT, Carnegie Mellon and elsewhere has sought to directly relate environmental policy to industrial transformation. Porter has argued that strict environmental standards act as a catalyst for innovation and competition, as firms develop technologies and process transformations in response to government standards. In a report to the Environmental Protection Agency and the U.S. Department of Commerce, Adam Jaffe and Robert Stavins found much less evidence of a relationship between strict environmental regulations, environmental innovation at the firm level, and economic growth. While a considerable step beyond the quality of life/business location perspective, this perspective continues to treat environmental policy as being exogenous to corporate strategy and the structure of local economies.

The challenge is to move beyond these ideas and to more fully determine and illustrate the interconnectedness between environmental and economic transformation in way that provides a compelling model for firms, regions and nations to follow. The way to get there is to leverage relationship between three key business trends--the quality movement (zero defects), more collaborative supplier networks (zero inventory) and pollution prevention (zero emissions).

The path to sustainable economic development must be built around the twin pillars of

economic and ecological revitalization--the two cannot be separated. The factory of the future must produce high-quality, "green products." It will do so by harnessing the knowledge and ideas instead the physical labor of workers. Production itself will increasingly take place in a clean laboratory-like environment. In fact, the economy of the future will be defined by parallel between "zero-defect" product quality and "zero discharge" environmental quality. The region of the future must provide the resources, infrastructure and policy framework in which such activities can flourish. It must be a source of continuous improvement and continuous learning. For this ecological revitalization is imperative.

Ecological transformation is tied to an underlying economic revolution occurring at the point of production. The emergence of a new system of "high-performance" economic organization--which harnesses the knowledge and intelligence of workers as a source of economic value and productivity growth--creates the opportunity for unifying economic and environmental transformation. High-performance economic organization is based upon the re-organization of production to emphasize continuous innovation and quality. Quality products depend upon quality inputs. Production itself increasingly takes place in "clean" factories. The path from a zero defect to a zero discharge economy is both necessary and potentially very short.

High-performance economic organization creates powerful new opportunities for stimulating toxic reduction and life-cycle approaches to products. The intense supplier networks that mark high-performance production create the potential to improve the environmental performance of small and medium size firms. Such an outcome would be a significant improvement over current regulations under which some firms simply strive to "move pollution" down the value-chain to less capable and less detectable suppliers. High-performance production is particularly amenable to prevention-based environmental strategies. The combined impact of integrating consideration of all process and material factors into production strategies and of the global orientation of high-performance firms creates opportunities for accelerating life-cycle design approaches. Sony Corporation, for example, has integrated material reduction factors into its supplier specifications, as both a cost containment mechanism and in anticipation of global regulatory trends. The global reach of high-performance firms, and their awareness of developments such as the German provisions for total product responsibility of personal computers and automobiles, makes them a natural catalyst for increasing business recognition and capacity for life-cycle design and material reduction. Similar parallel tracks to energy intensity and other forms of "green technology" reduction may also exist.

High-performance economic organization also requires the restoration and remaking of the industrial landscape. Such restructuring could provide long missing momentum for comprehensive site restoration. The mass production economy was distinguished by large scale, mostly autonomous plants. The remains of these facilities dot our industrial landscape and are themselves a major source of ecological contamination. High-performance economic organization is marked by networks of "hub" facilities and clusters of small and medium-size

manufacturers. In contrast to past economic trends which were inherently either decentralizing (the focus on industrial parks to serve light manufacturing) or downtown-focused (for service and high-tech industries), this reliance on a constellation of production creates a centrifugal development force and necessitates that aggressive strategies be implemented to return contaminated sites to use. This factor makes ecological restoration a precondition of further industrial transformation.

Sustainable economic development must begin from the realization that our economic and ecological futures are inexorably linked. The ability to pursue a strategy aimed at transforming the manufacturing base and broader business climate is dependent upon the capacity to fully restore the environment. Our nation will be unable to build a modern 21st century economy without successfully completing its ecological restoration. Its ability to gain competitive advantage in world markets depends upon harnessing environmental technology and opportunities for economic ends.

For firms, regions and the nation as a whole, the crucial issue is to develop new visions and strategies which effectively integrate economic and ecological revitalization. Despite decades of misguided tension between economic and environmental interests, the opportunity now exists to develop a growth model which can create jobs and help restore the environment.

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