

The Role of the Airport in the Post Industrial Economy©



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Prepared by

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Introduction

Our economies are in the midst of a major transition. While formerly much of economic activity was dependent on resource industries (such as forest products and mining) and manufacturing (such as steel and autos), in the future these industries will play a much smaller relative role in terms of supporting employment and generating economic output. These industries will, of course, continue to be important industries, but they will no longer dominate our economies. Most importantly, due to productivity improvements and other factors, the resource and manufacturing industries will employ fewer and fewer workers each year.

industries have, and must develop the policies and attitudes needed to support and nurture them. This paper argues that affordable and accessible air transportation is an absolute requirement for attracting HCI industries.

Structural Change

Almost every day, we read in the newspaper about the great economic upheaval we are in. While there are stories about the effects of cyclical recessions, other stories deal with what economists call *structural changes* in the economy. Structural changes are those which alter the underlying foundations of how we earn our living and purchase the goods and services we need.

To illustrate this, consider the example of a blacksmith shop 150 years ago. At that time a given blacksmith shop might close due to vagaries in the business cycle. Every year a few shops close due to slow business, but eventually they would be replaced by other new shops. Now consider blacksmith shops 100 years ago. Then they were closing due to a structural reason: the horse was being replaced by the automobile. Jobs in the blacksmith industry were being lost permanently. At the same time, jobs in the automobile industry were being created. The structure of the economy was changing, as blacksmith jobs were being swapped for auto manufacturing jobs. If a blacksmith lived close to one of the new auto factories, the impact of this change would have been minor. On the other hand, if the poor blacksmith did not live close to a location chosen by the new industry, or if she or he lacked the skills need for the new industry, then economic and personal misery would have been the result.

Today, the world economy is in the throes of a major structural change. The author Alvin Tofler refers to it as a *powershift*, while other authors call it a *paradigm shift*. Manufacturing jobs have been moving from North America to places such as Hong Kong and Mexico. As living standards (and wage rates) rise in Hong Kong, these jobs are moving once again to parts of South East Asia. Managerial and workforce ranks at the Fortune 500 companies are thinning. Giants such as IBM and General Motors employ significantly fewer people now than they did a decade ago. These are not temporary job losses - they are permanent, structural losses. In their place, new industries are arising: computer software, medical industries, genetic engineering, as well as growth of jobs in the services sector. Thirty years ago, dining out was not commonplace and one rarely ate a meal while shopping. Today, families routinely use restaurants, pizza delivery and food fairs in shopping malls. The structure of how we earn our money, and what we spend it on is changing in a fundamental way.

The Industrial Economy

Resource economies are especially vulnerable. Industries such as coal and forestry produce standard products, where low price reigns supreme over product differentiation and other types of added value. These products are sold into world markets, making the local economy subject to developments beyond its control. Resource industries have also been relatively free of international trade barriers.

Manufacturing economies are vulnerable for different reasons. While products are traded at higher prices and have significant value added, manufacturing locations need not be fixed. If wage or productivity differences are large enough, manufacturing will shift location. Even the heavily manufacturing based economy of Hong Kong is experiencing a shift of its manufacturing base to Southern China, Vietnam, etc., as lower wages drive manufacturing location decisions. Even major manufacturing investments, such as steel mills and auto plants are not immune the globalisation of production.

Resource industries are experiencing permanent decreases in jobs, rather than growth, for two *structural* reasons. The first is productivity, and it applies to manufacturing as well. As the coal industry moved to high mechanisation, unit trains and modern port facilities, the amount of labour required per ton of coal exported has declined. In the Forestry industry, today less than half the labour is needed to produce the same amount of lumber as was shipped in 1980. Auto plants introducing robotics and flexible manufacturing elements are also experiencing productivity growth. These productivity developments have been necessary to keep cost down in order to sell our products in world markets. However, the shedding of labour creates a structural problem - the employees who used to participate in these industries must be shifted into other industries offering similar standards of living and quality of life.

The second reason that resource industries, at least the non-renewable resource industries, have gloomy employment prospects is due to depletion of resources and removal of stocks for environmental protection reasons. As mines and forests are depleted, local jobs are lost or transferred elsewhere. In the past, resource industries have relied on opening new mines or forest tracts to maintain production and employment. This is becoming more and more difficult, as the remaining stocks are in more inaccessible (and costly) locations, are being protected for the enjoyment of future generations, and are

side of the cycle. Here the opportunities are in areas such as genetic engineering of tree stocks to produce more rapid growth rates, and higher yields. Much of this aspect of the industry is human capital intensive.

The Post-Industrial Economy

As resource and manufacturing industries become less and less of an employment base for the economy, we enter the *Post-Industrial Economy*. Because these industries are dwindling in relative terms, we will enter some type of post-industrial economy, even if we do nothing. What is at stake is the kind of post-industrial economy we have. There are choices. We can choose (usually by default) to suffer lower standards of living and reduced employment. A second choice is to target industries which no one else wants. By changing environmental regulations a community could successfully attract job creating industries which foul the land we live on, the air we breathe and the water we drink and enjoy. Most communities do not want these industries, so attracting them would be easy. Opening up our communities as disposal sites for hazardous wastes would undoubtedly bring in jobs and monetary wealth, but most of us reject this alternative.

A third alternative is to actively seek industries which a) provide equal or rising financial standards of living, b) which protect or even compliment the environmental quality of life we prize, and c) which challenge our skills and provide attractive prospects for future enjoyment of work for ourselves and our children.

What are such industries? High-tech industries are the current fashion, although this is a term which I prefer not to use. Some people interpret high tech to mean modern day equivalents of rocket science - fancy lab equipment and scientists which look like characters in a Gary Larsen comic. In fact, high tech can encompass some very basic industries. Today, with the high automation of the integrated forest products mill, 2-by-4's are high tech -- the product is the same, but the process used to create it would seem like wizardry only a decade or so ago.

We prefer to refer to the type of industry we wish to attract as Human Capital Intensive. A partial list of such industries might include high value added manufacturing, such as high end electronics or equipment; knowledge industries such as higher education, consulting, etc.; creative industries such as computer aided design, performing arts, etc.; and high quality services industries such as computer software creation, finance, insurance, accounting, logistics, sales offices and headquarters, medical

washer on the same bolt for years on end. While any human activity has its environmental consequences, these industries tend to have smaller impacts than the resource and heavy manufacturing industries which they, in part, replace, or at least supplement.

Attracting Human Capital Intensive Industries

Unfortunately, most of the rest of the world wants these high wage, high quality of life, environmentally friendly jobs. Our wishing for them, will not make them happen. A community will have to work to create the type of environment (in all senses of the word) which these clean industries require.

While there is fierce competition for those industries, there is an opportunity to attract a sustainable base of these jobs. In general, these desirable post-industrial jobs cannot be located anywhere. There are certain requirements that they have, and focusing our attention on providing these requirements deserves our attention. One issue is that these HCI's require a location with a skilled, highly educated workforce. They also require close proximity to major research centres. A second criteria is that the location offers a high quality of life for workers. Third, these industries require reasonable tax rates. Most of us recognise the need to pay taxes to support the quality of life we have, but care must be taken that these taxes are not structured in a way which discourage work and investment.

The role of Air Transport in the Post-Industrial Economy

A fourth areas which is essential to attract the HCI is air transportation. All of the desirable high tech, knowledge based industries are highly dependent on human capital. Human capital industries have the characteristic that connections between people are of critical importance. These industries require world class and inexpensive telecommunications. They also require frequent air travel for sales, for training, for expansion of knowledge via attendance at research symposia and conventions, for solving problems with customers scattered throughout the globe, etc. With the so-called high tech manufacturing industries, air travel is also important. Labour cost is often less of a factor in these industries than customisation and proper design. These factors necessarily require greater person-to-person communication, and air travel is an important element here. Further, the movement of the goods produced by these industries is more and more by aeroplane. As industries such as electronics and fashion apparel are globalized, the only transportation choice is by sea carrier or by air. The reliability

for maintaining family contacts. Convenient, affordable air transport is essential to maintaining family ties for births of grandchildren, weddings, etc. Perhaps the great untold story of airline deregulation has been the social impact it has had in keep families in contact, even when spread out across a continent or overseas.

The air transport sector itself provides the kind of high quality, high wage post-industrial employment which is the ultimate goal.

Efficient transportation links can be an important factor in supporting a high wage economy. We all want to earn high wages, yet we recognise that these can make us uncompetitive. How do we overcome the disadvantage of paying our workers high wages? The answer lies in leveraging productivity gains in other parts of the production chain. Consider this example. Suppose that by having access to an efficient, reliable transportation network, a firm can achieve a cost reduction of 5%. This would be through a combination of reduced transport costs and reduced inventory costs (as reliable speedy transportation allows firms to provide the same level of customer service with lower inventory levels). This 5% saving in *total* costs can be used to offset a 12.5% higher wage cost. Where does the 12.5% come from? Labour typically accounts for roughly 40% of costs in our economy. For a good which costs \$100 to produce, a \$5 saving in transport and warehousing costs can increase payments to labour from \$40 to \$45 -- a 12.5% increase in labour costs. Paradoxically, as labour has become a smaller portion of the manufacturing dollar, it can allow productivity gains in other parts of the production process to be leveraged into higher percentage gains for workers.

Conclusion

Like it or not, our economy is in the midst of a structural change to a post-industrial basis. Gone are the days of high employment rates at high wages in resource and manufacturing industries. The type of economy we now evolve into is a matter of choice. Undoubtedly we prefer to move to an economy based on high-tech, knowledge dependent and environmentally friendly industries. There is great competition to attract these industries, and to be successful we must offer the ingredients which nurture these kinds of jobs. We have argued that one of the key characteristics of successful locations in attracting these desirable human capital intensive industries is accessible and affordable air transportation. Air transport is a catalyst for development of the post-industrial economy, as well as an attractive industry in its own right.

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