Leapfrogging an IT Sector

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INTRODUCTION

Accompanying the global spread of the post-industrial society (Bell, 1973) are nations who see economic opportunity deriving from the development of an information economy to support it (Porat, 1977). But while advanced industrialized nations moved gradually from industrial to post-industrial work over a period of decades, newly industrializing countries are "leapfrogging" directly from agrarian to information-intensive work in a matter of years. Given this rapid labor force transformation, a critical consideration in the development of a global information sector is the development and management of information technology (IT) workers.

Ireland is an appropriate country for examination of this leapfrog phenomenon because it was one of the earliest examples of this phenomenon, having developed its information sector rapidly and successfully through inward investment by multinational firms during the 1970s to the 1990s. Thus, this case offers the point of view of both an advanced industrialized or "first wave" country and of a "second wave" country that is taking an alternate path into the information economy by rapidly moving directly from an agrarian or partially-developed industrial economy into an information economy. Since Ireland was one of the earliest examples of "leapfrogging", the Irish case has lessons applicable to other contexts (Trauth, 2000).

BACKGROUND

Ireland's rapid transformation from a poor, agrarian society to a robust information society fueled by its information economy was the result of policy initiatives, cultural compatibility with IT work and adaptive responses to opportunities and crises. Ireland's policy of economic development through inward investment was a direct reversal of the preceding policy of cultural and political sovereignty achieved largely through economic isolationism. But a combination of high emigration and high unemployment signaled the need for change (Trauth, 2001).

The multinational firms brought direct benefits through the jobs that kept people in Ireland and away from unemployment, and indirect benefit through the foreign investment that would provide both jobs and a new business climate. These outside influences were expected to help Ireland more quickly develop an indigenous entrepreneurial capacity. The long-term benefits would be the spillover effects from the development of technical and business expertise.

Ireland provided attractive economic incentives in the forms of tax relief and grants for equipping their factories, and training the work forces. These were the necessary conditions for establishing the multinational IT sector in Ireland. But the sufficient conditions were a societal infrastructure supportive of IT work and a qualified labor force to do it. Today, Ireland's software industry has emerged as a strong contender for multinational sites, along with Israel, India (Heeks, 1996) and Eastern Europe (Heavin, Fitzgerald, & Trauth, 2003). Ireland's software sector employs 30,000 people in both indigenous and multinational operations and creates revenues in excess of Euro 10 billion (Flood et al., 2002).

The Irish case offers two important sets of human resource issues. The first set relates to ensuring a supply of appropriately qualified IT workers. The second set relates to managing IT workers in a cross-cultural environment. To the extent that Ireland's experiences are typical of other second wave countries, the lessons learned apply to indigenous and multinational managers as well as government policy makers in other counties.

ENSURING A SUPPLY OF QUALIFIED IT WORKERS

(Re)Designing Societal Structures to Support IT Work

Among the societal infrastructures that were adapted to support the emerging IT sector, the most important was the educational infrastructure (Clancy, 1988). Irish policy makers recognized that the well-educated Irish population was a powerful resource that could be leveraged to support the emerging information sector. But there were two serious issues to overcome. The first was establishing equality of access to education. This was accomplished in 1968 when secondary education became state-

funded. The other issue was enabling potential IT workers to acquire the specialized skills and knowledge for work in this sector. In the 1960's, the traditional university was not oriented toward vocational education much less vocational education of a technical nature. Consequently, in the 1970's and 1980's, two new universities were established and the existing universities were adapted to incorporate business and IT skills into their curricula. Technical colleges were also established. Evening, adult-oriented programs were established for workers to develop their skills and employment prospects. Finally, the government-sponsored IT training programs for those with university degrees or who had been made redundant in other fields (Trauth, 1993).

It was also necessary to maintain alignment between the particular skill sets being developed in the schools and training programs, and the available types of jobs. An unintended consequence of Ireland's educational success was that Irish IT workers became a desired human resource in other countries. In response, industrial policy assessments recommended a closer match between the educational plans of the universities and the employment opportunities available in the country (Industrial Policy Review Group, 1992).

Addressing Barriers to a Wider Participation in IT work

There were barriers to full participation in Ireland's IT sector with respect to age, gender and social class. The perception of IT as a young person's field was reinforced by the extremely young population of the country. This age divide was exacerbated by the prior educational policy limiting access to secondary and, therefore, higher education. Thus, in the early 1990's, those over the age of thirty-five, those who had not had access to free secondary education, were fewer in number in the IT labor force.

Another type of barrier relates to gender. While women found the IT sector better for women than traditional industries, banking and the civil service, there was still a tension between opportunity and restriction. IT was a new industry without established patterns of gendered work. However, there was also an acknowledged stereotype of IT work as a male activity and recognition by both men and women that women were not full participants in the IT sector. The reasons have been typically linked to a culture of large families in which child rearing was a woman's responsibility (Kvasny & Trauth, 2002; Trauth, 1995).

The final type of barrier relates to social class. Despite Ireland's historic disdain for rigid social class categories, there is evidence of social class barriers in the information sector. The absence of free secondary education was a barrier to poor and working class individuals.

Further, in family settings without a history of or value placed upon education, there can be pressure on young people to enter the work force as soon as possible in order to add to the family income. Other evidence of attitudinal barriers, coming from members of the middle class, was the importance of having the "correct" accent and address in order to secure employment in indigenous IT firms.

Managing IT Workers in a Cross-Cultural Work Environment

The second set of issues relates to managing IT workers in a cross-cultural work environment in which the "first wave" nation's culture is embedded in the corporate culture of the multinational firm (Trauth, 1996). A firm's corporate culture " its values, management style, method of operations and work environment" reflects the national culture in which it developed. Thus, the multinational IT workplace was a cross-cultural mix of American and Irish cultures, the IT culture, and the particular corporate culture of the firm. While the Irish workers welcomed the American management style and corporate culture, there was also tension over how far – and in what direction – the cultural influence should go. Not surprisingly, the American managers favored the American culture, believing that the multinational firms ought to have a significant cultural impact. On the other hand, Irish human resource managers argued for tailoring the corporate culture to the particular national context. The viewpoint was that while the multinationals were bringing certain values and attitudes to the workplace, there was also a significant contribution to be made by the Irish culture. But along with resistance to the multinational influence was the recognition that importing another work culture was part of the plan. By bringing in multinational firms Ireland would be able to import a well-established work ethic that would have taken considerably longer to develop if done indigenously.

FUTURE TRENDS

Managing IT workers in a cross-cultural environment requires the acknowledgment that two different national cultures are involved when a multinational IT firm sets up operations in a country. Both of these cultures have positive contributions to offer the workplace. Multinational managers should strive to understand work patterns and attitudes of the host country culture that, while different, may nevertheless be productive. They should also understand that introducing a corporate culture means introducing a different national culture. At the same time, the host country must recognize that when the

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