

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 countries.

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

intent is to import expertise in order to quickly introduce an IT sector, one side effect will be the changes in national culture.

This has been referred to in the literature as *situating culture* (Weisinger & Salipante, 2000; Weisinger & Trauth, 2002, 2003). According to this theoretical framework, culture is a socially negotiated, dynamic, practical, and locally situated process. Hence, it is a view of culture as “doing” (which places emphasis on the actual behaviors of people) rather than “thinking” (which places emphasis on shared cognitive schemas). This view sees the interaction among the group members’ different cultures as being situated in a particular context. Thus, by situating culture in a particular context, a manager may be better able to comprehend the emergence of unique local cultural processes that reflect distinct socially negotiated realities and workplace practices.

By recognizing that there is more than one way to achieve a management goal, multinational managers can develop procedures and management approaches that exploit the best features of the host country. In the presence of two distinct cultures, it is also necessary to acknowledge that cultural influence goes in both directions. It is natural that the home culture of the multinational IT firm will influence the society it enters. But it is also natural that the workers will influence the corporate culture to make it compatible with their own. By building a permeable wall, by the open exchange of values and norms, both cultures can be enriched.

For example, American managers in Ireland learned that a human relations problem could be diffused by utilizing an Irish cultural institution: the pub. By meeting in a setting that, according to cultural norms, conveys equal standing, a manager could more easily work out the problem with the employee. Clearly, this management approach fits well with Irish culture but may not suit another cultural context. Likewise, what works best in Japan or in America may not be what works best in Ireland. Another example is the approach taken to knowledge management. Knowledge management refers to the capturing and recording of the tacit organizational knowledge that has built up over time and that resides within the employees of a firm. One of the main objectives of engaging in knowledge management is to improve the flow of organizational knowledge to facilitate organizational learning of new employees and cross-training. In Ireland, managers can address some aspects of this goal by leveraging certain cultural characteristics instead of investing in expensive equipment. The cultural characteristic of interest in others and sociability leads naturally to employees knowing more about their colleague’s work than might be the case in another culture that places less emphasis on sociability (Trauth, 2000). Hence, cross-training is a natural outcome of this interaction. Simply, by recognizing that this is occurring, management can reap knowledge transfer benefits.

CONCLUSION

The case of Ireland represents an early example of the issues associated with what is currently recognized as a trend toward global outsourcing. Because it was a leader in positioning itself as a destination for global outsourcing, Ireland’s experiences offer insights for both nations and multinational companies interested in outsourcing. One insight is that a qualified labor force must be available. Because of the specialized skills required for employment in the information sector, education is the key to attracting outsourcing. But in order to ensure that all citizens are able to participate in this employment sector, there must be equal educational opportunity. In Ireland, and elsewhere, members of certain groups experience barriers that inhibit full and equal participation in the information economy. In order to ensure that the society can sustain its IT sector, the educational infrastructure needs to be aligned with the skills and knowledge required for IT work, and the educational plans of the universities should be coordinated with the employment objectives of the firms. Finally, management consideration needs to be given to the mix of cultures that is present when a multinational firm from one country sets up operations in another. In this new cultural context, both cultures come together to produce a new, *situated* culture. The public policy, human resource and management issues that are raised in this case reveal some of the issues that must be addressed as more and more countries “leapfrog” an IT sector in order to reap the benefits of global outsourcing. These issues must be considered from two perspectives: that of the firms engaged in outsourcing, and that of countries inviting firms to its shores.

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KEY TERMS

Cross Cultural IT Management: Managing the IT function and its personnel in a globally distributed setting.

Global Outsourcing: The trend towards directing outsourcing—contracting with other firms to perform non-critical functions for a business—toward countries with low workforce costs.

Information Economy: That portion of the national economy that is based upon information processing and related activities (Porat, 1977).

Information Sector: A component of the information economy. The *primary information sector* includes those who develop hardware, software and information systems. The *secondary information sector* includes those engaged in information processing activities in the course of doing work related to some other primary activity such as insurance claims processing.

Information Society: A societal transformation in which information is the key resource.

Information Technology (IT) Worker: One who works in the primary or secondary information sector.

Post-industrial Society: A society in which knowledge replaces capital as the key economic resource and the predominant type of work is in the service sector (Bell, 1973).