Implementing An Integrated Software Product at Northern Steel

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EXECUTIVE SUMMARY

This case describes the implementation of the payroll and human resources modules of an integrated software product in a large manufacturing organization. The firm is located in a large metropolitan city and system implementation took place following a major organizational restructuring (from a public to a private enterprise) and downsizing (from 10,000 to 2,000 employees) effort. The extensive maintenance required by the existing legacy systems and the high cost of modifying them to address the year 2000 problem motivated the company to acquire an integrated software product from a vendor, and adapt it to the organization. Implementing the software took longer than scheduled and was 35% over budget. Some of the problems encountered include conflicts between the accounting and human resources departments, technical difficulties in building interfaces to existing systems, inadequate staffing of the project team, the IT director who left during the project, and a poorly functioning steering committee.

BACKGROUND

The Steel Industry

In 1997, the North American steel industry consisted of 96 companies (Standard & Poor’s, 1997). Reflecting the particularities of the steel making process (see Exhibit 1), this industry is principally made up of two types of producers: integrated mills and minimills. Integrated producers such as USX, Bethlehem, and Dofasco make use of expensive plants and equipment to produce from two to four million tons of various steel products per year. In contrast, minimills such as Nucor, Birmingham Steel, and Co-Steel Lasco produce 400,000 to over two millions tons per year by melting recycled ferrous scrap in electric arc furnaces to make a limited number of commodity carbon steel products. Originally small-scale plants serving local markets for structural steel products, North American minimills have become major players in the 1990s and compete with integrated producers in most product areas (Standard & Poor’s, 1997).
A wide gap in labor productivity remains between minimills and integrated producers. For example, in 1996 Nucor’s 6,600 workers produced 8.4 million tons of raw steel, or 1,273 tons per employee. LTV, the United States’ third-largest integrated steel maker, produced 8.8 million tons of raw steel with a workforce of 14,000; this equaled 629 tons per worker.

Minimills have a labor cost advantage because they typically employ nonunion labor, whose compensation is often directly linked to production and profits. Integrated companies employ union labor which is more expensive over the course of the business cycle.

To survive in the long term, integrated producers need a technological breakthrough that will make them more competitive with minimills by reducing their labor and capital costs. Despite aggressive cost reduction and more flexible labor practices, integrated steel making remains more capital- and labor-intensive than minimill steel making. (Standard & Poor’s, 1997).

The trends experienced by all players of the industry throughout the 1990s include the globalization of major customers (e.g., automotive, appliances), continued pressure from offshore excess capacity (e.g., Russia, Asia), continued pressure for environmental improvement, rapid and accelerating technological change, and the challenges of alternate materials in traditional markets (e.g., autos, bridge construction). Many firms have responded to these pressures by reinventing steel making through corporate repositioning (e.g., increased customer focus, cost reduction, organizational restructuring), by making large investments in technology and employee skills, and through increased collaborative research efforts (e.g., thin strip casting, process modeling, electronic sensors). (Bain, 1992)

**Northern Steel**

Established in the northeast as a public company over 30 years ago, Northern Steel was a money losing operation throughout the latter part of the 1980s and in the early 1990s. Employing a workforce of over 10,000 employees, it was sold to an international conglomerate and became a private enterprise in 1994. The new ownership immediately started a process of downsizing the company to improve productivity and increase its market share. Over the next couple of years, numerous facilities and divisions were either sold or closed, and the size of the workforce was reduced to around 2,000. By 1997, a much leaner and customer-oriented Northern Steel had only six facilities that manufactured and distributed around 1.5 million tons of steel products in North America (including sheets, slabs, weld pipes, billets, bars, rods, wires, and pellets). In 1997, Northern Steel’s annual revenues were $900M, and more importantly, it had become profitable once again. However, the organizational culture developed over the past decades as a heavily unionized public company proved more difficult to change. The apathy of a slow moving bureaucracy and a nine to five mentality could still be seen rearing its head relatively frequently despite the privatization and the downsizing, and the strong pressures they entailed to improve productivity and to cut costs in all areas.

**SETTING THE STAGE**

**IT at Northern Steel**

Since the early 1970s Northern Steel had computerized its main transaction systems including its payroll and general ledger with most programs written in COBOL. With the introduction of microcomputing in the 1980s, many user departments started developing their own applications. Some of these were quite substantial. For example, one accounts payable application which handled over $50M had been developed by a user in the accounting department.

During the mainframe years, the IT department had a budget of around $3M and had a staff of 30. By early 1990s, problems in finding and hiring personnel having the requisite skills to maintain the legacy systems, and the constant difficulties experienced in servicing the old mainframe,
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