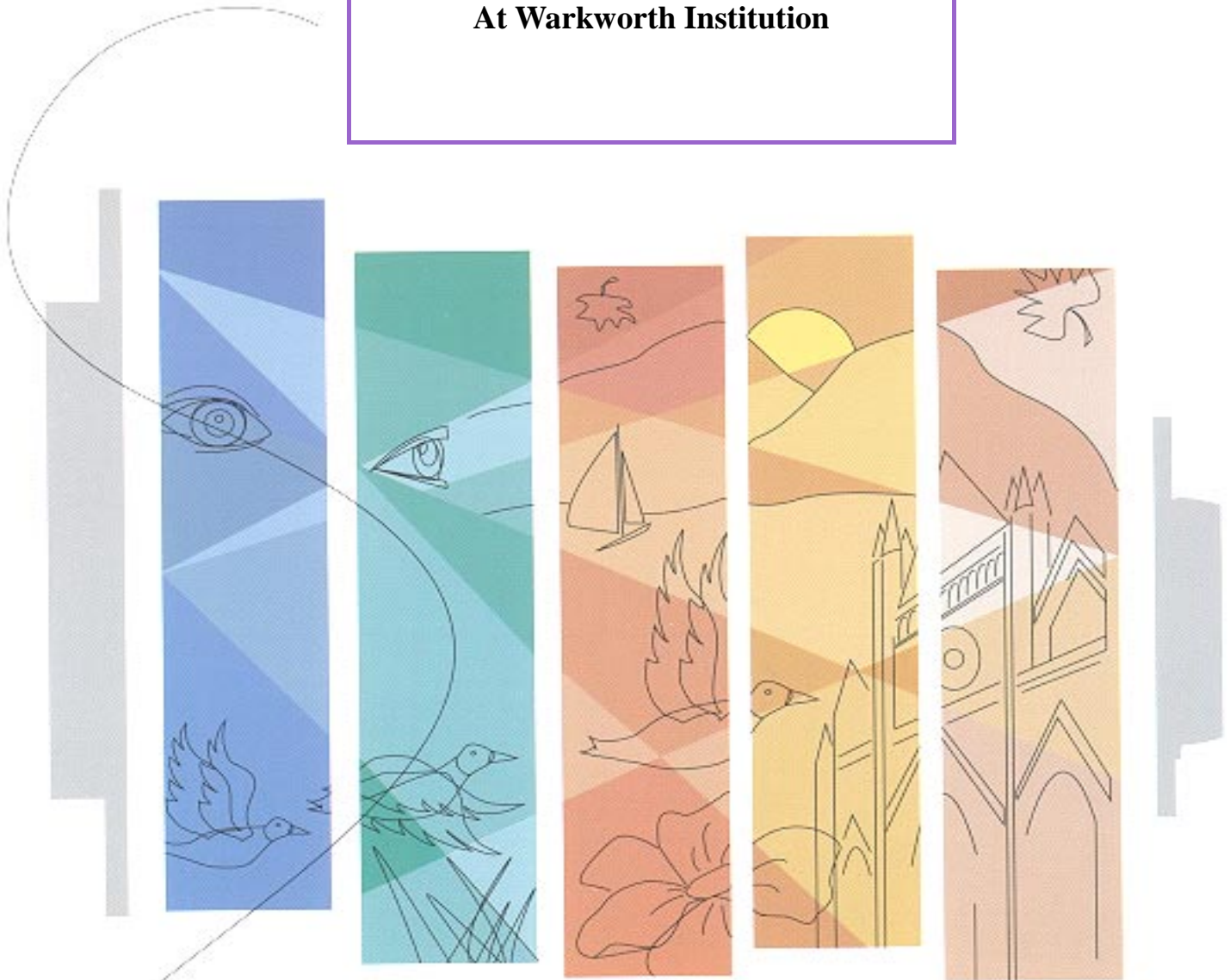




Research Branch  
Direction de la recherche

Corporate Development  
Développement organisationnel

**Insights into Innovative Correctional Industry – A Case Study of CORCAN At Warkworth Institution**



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Prepared by:

Maury Getkate

Getkate & Associates  
for the Research and Statistics Branch  
Correctional Service of Canada

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## **Executive Summary**

CORCAN operations at Warkworth Institution is an example of a leading prison industry in Canada. A case study was conducted to gain insights into the distinguishing characteristics of this specific CORCAN site. An exploration of the Warkworth situation reveals that the manner in which CORCAN is integrated into the institution, the broad changes brought about by demands for product quality, and the nature of employee involvement are distinguishing features of its organizational development. The case study is discussed from the perspectives of boundary spanning, a sociotechnical view of work, and the characteristics of employee involvement. Implications for both research and operations are briefly discussed.

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## **Case Description**

### **A. Institutional Context**

Productive correctional industry has long been associated with the medium security Warkworth Institution. The CORCAN operation at Warkworth manufactures a variety of components for modular office furniture, and produced in excess of three million dollars worth of product in the 1992-93 fiscal year. Production facilities include a cabinet shop, paint shop, sheet metal shop, welding shop, and an upholstery shop. Approximately 65 inmates work in the facility - about ten percent of the prison population. CORCAN employs 15 staff in the operation. Warkworth is the most profitable of all federal correctional industries in Canada.

Inmates in the CORCAN program put in a full day of work and are only paid for the hours employed. They receive training in one of five trades areas depending on the shop they have chosen to work in, and they keep track of apprenticeship hours which may be applied against trades apprenticeship requirements. The shops are well equipped with modern machinery which is comparable to, if not better, than that typically found in the private sector.

An incentive program was implemented by CORCAN at selected institutions, including Warkworth, to encourage inmate productivity. Under the incentive plan, inmates can earn approximately three times more than they would in other activities within the institution. Predictably, CORCAN has become the activity of inmate choice at Warkworth for monetary reasons. The high inmate demand to be employed in CORCAN has resulted in a waiting period of approximately 12-18 months. Over the last year, for example, about 90% of the inmates working in CORCAN remained on the job, leaving few openings for new hires. While the average institutional stay at Warkworth is about four years, the average inmate tenure at CORCAN is also close to four years.

This low rate of turnover has created unique problems. Approximately 28% of those employed in CORCAN, for example, are serving life sentences. This required introducing a policy limiting inmates serving life sentences to five years of CORCAN employment, so as to allow more inmates to gain work experience and receive training. Similarly, ten positions within the program have recently been reserved for inmates identified as high risk/high need, as defined by serving their sentence to Warrant Expiry, who were within six months of release. This provided the inmates with a work routine that reflected societal norms, as well as provide additional financial resources upon release.

While the productivity of the CORCAN operation, and the associated incentives plan, make this a noteworthy case, CORCAN does not operate in

isolation from the correctional institution which surrounds it. Efforts by the CORCAN Operations Manager, Paul Urmson, over the last few years has been directed to fostering stronger ties between CORCAN and other aspects of the Institution. The openness to strengthen these linkages has been aided by three factors. First, the emphasis of the CSC Correctional Strategies emphasizes the added value provided by programs, including work in correctional industry.<sup>1</sup> Second, institutions are unique in ways often attributable to the Warden who administers the prison. The receptiveness of both Wardens George Downing and Mike Provan to ideas encouraged the Operation Manager to introduce proposals for consideration. Third, CORCAN was mandated as a Special Operating Agency (SOA) to provide both correctional programming and commercial products. Initiatives that link CORCAN to the institution are therefore within the Operations Manager's responsibility. The combination of these factors provided a supportive context to CORCAN becoming more integrated into correctional processes and management at Warkworth.

A prime example of this approach was the initiative to have two CORCAN instructors trained to deliver a cognitive-behaviourally based skill development program - Cognitive Living Skills. The trained instructors rotate from their CORCAN positions to participate in the Living Skills program, with one of these positions funded on a continuing basis by CORCAN. Functioning as a Living Skills Coach has provided CORCAN staff with the opportunity to gain experience, insight, and an appreciation of correctional programming within the institution. In addition, it has allowed other correction staff to appreciate that CORCAN's involvement in the correctional process is more than simply providing inmates with work.

A second example of the involvement of CORCAN in the correctional process was the linkages developed between CORCAN operations and the Case Management process. Instructors spend considerable time interacting with inmates on a day-to-day basis, and come to know them well over time. The Case Manager, however, may not be fully aware of each inmate's performance at work. In an effort to provide Case managers with feedback on the work performance of offenders, CORCAN staff designed an Inmate Activities Form which includes ratings of work performance such as punctuality, work attitudes and behaviours, and ability to work without supervision and get along with others. Each instructor completes a report on each inmate working in his shop once a month. Copies are issued to the inmate and the Case Manager, with copies kept for CORCAN records. This provides the Case Manager with an ongoing record of the inmates work performance, and strengthens the ties between the CORCAN program and the Case Management process.

A third means of deepening CORCAN's involvement with the rest of the Institution was to expand the roles and experiences of the Operations Manager.

Several examples illustrate this approach. Upon coming to CORCAN operations at the Institution, for example, the Operations Manager volunteered to become a duty officer at the prison. This provided him with an opportunity to become more involved in institutional management. Similar efforts in other management areas resulted in active participation in assorted committees and meetings. By the fall of 1993 the CORCAN Operations Manager was involved in several activities, including morning briefings, Institutional Management Committee, Facilities Planning Committee, and Case Management Linkages Committee, to name a few. In addition, the Operations Manager acted as a Unit Manager for eight weeks in the spring of 1993, thereby gaining valuable firsthand experience and insights into correctional programming and management.

## **B. The Demand for Quality**

The mandate of the CORCAN program is to help offenders "develop good work habits and skills through the production of saleable goods in a structured work environment comparable to the private sector."<sup>2</sup> The private sector, however, is a dynamic environment subject to many demands. The worldwide demand for quality has had a profound impact on the private sector, as evidenced, for example, by the widespread adoption of quality management systems by major corporations.

The demand for quality has had a strong impact on CORCAN operations at Warkworth. In the fall of 1990 the Department of Supply and Services indicated that suppliers of office furniture must in future be certified to one of two quality standards, ISO 9002 or OASIS, in order to continue to supply furniture to the federal government. The ISO 9002 International Standard for Quality Assurance specifies standards in relation to the manufacturing process. In contrast, the Office Automation Systems and Information Services standard (OASIS) sets quality standards for office products. Office furniture is a major portion of the commercial products marketed by CORCAN. As a leading correctional industry producer, the Warkworth facility had to implement a quality control system to meet established standards and maintain levels of production. Consequently, the work environment at Warkworth was faced with quality demands resembling that found in the private sector.

In response, the inmates, staff, and management engaged in the demanding task of designing, documenting, and implementing a quality control system to meet ISO 9002 standards. There was some initial resistance by staff to the need to introduce a quality system, since the Warkworth manufacturing facility already had a good production reputation. This resistance faded, however, once the full implications of the quality demand was realized, and everyone became increasingly involved in the quality implementation process. Numerous meetings with staff and inmates, some including representatives

from CORCAN head office, were undertaken to understand and develop the quality process to meet ISO 9002 standards. Extensive documentation was developed in-house. Process sheets, for example, were developed which documented the procedure used at each stage of production. Furthermore, the process sheets were developed at the shopfloor level, and could only be changed with authorization of the shop supervisor<sup>3</sup>.

The ISO 9002 quality standards required major changes to the work process in addition to requiring exacting standards. A key change is that each inmate became directly responsible for the work they produced. Each inmate checks the accuracy of products manufactured, certifying that it meets quality standards by signing it off, before it is passed on to the next step of the production process. Inmates also stop production when tolerance levels are exceeded, and identify problems effecting the production process.

Quality accreditation was granted in May, 1991 and was celebrated with a lunch for all in the facility. Unfortunately, due to a mix-up in the application process, accreditation was granted for OASIS rather than ISO 9002 standards. In effect, Warkworth had inadvertently used an approach which focused on the quality of the manufacturing process to get product quality accreditation. The Warkworth operation has since been audited three times by the Canadian Government Standards Board and found acceptable. An application for ISO 9002 accreditation is currently underway and is expected shortly. Consequently, it is expected that Warkworth will have both ISO 9002 and OASIS certification in the near future.

### **C. Employee Involvement**

The changes in the work process due to the demand for quality have facilitated changes in the nature of work involvement by nearly everyone in the CORCAN operation at the Institution. This can be seen, for example, in the management style used by the Operations Manager. While the Operations Manager was already predisposed to a more participative management style, the changes brought about by the implementation of a quality control system helped make this style more effective.

The interaction between the Operations Manager and shop instructors and inmates is illustrative of this participative approach. Whereas previously instructors received instructions from the Operations Manager on how to meet production demands, they now predominantly make the necessary operational decisions themselves, since they are considered to be the most knowledgeable about the production process in their own shops. The Operations Manager often tours the shop to be accessible to instructors and inmates alike for consultation and advice on matters as they arise, to answer questions, or to hear suggestions and complaints. In addition, the Operations Manager keeps all employees fully informed. Communication usually occurs informally, and



both staff and inmates have full access to production and financial information as they wish. Consequently, the main managerial activity has become one of enabling others, rather than the more traditional form of managing.

The nature of the instructor's work involvement has also changed. Previously, instructors had direct control over the work performed by an inmate. With the introduction of a quality control system, the direct responsibility for the work now rests with the inmate. At first instructors were somewhat reluctant to relinquish control and responsibility for production to inmates, since inmates varied in the degree of job competence held. This was remedied by designing a skills development route for each shop so inmates could sequentially develop the competencies required for each work position.

Instructors are also more involved in the development of inmate work attitudes than they were previously. Developing positive work attitudes in inmates requires instructors to be fair, honest, and firm. Inmates are treated the same as staff, and each shop is considered more like a business unit. The combination of an inmate incentive plan and the quality process has placed an emphasis on production. In turn, there has been an increased emphasis on teamwork and positive work values. Negative attitudes and an unwillingness to be a team player can have a detrimental impact on quality and production, thereby effecting each member of a shop. The instructor's role, therefore, includes serving as a coach to the work team. Consequently, the instructor has become more involved in the development of inmates as team members. A reoccurring example is the way that production errors are handled by instructors. Production errors may be due to equipment, materials, or mistakes. Production errors, however, tend to be taken quite personally by inmates. Inmates often react to errors as events where 'blame' is going to be assigned. The instructor has to continually emphasize that the focus is on finding and solving the problem, rather than blaming someone. This helps inmates reframe errors as corrections to be made to the work for which they are responsible as a member of the shop, rather than events for which they are personally to blame.

Inmates have become more involved in work at Warkworth due to the changes which have occurred. The production emphasis provides a unifying goal for both staff and inmates. This has helped reduce the 'us-them' distinction that inmates often feel in other areas of the Institution. The work, with quality standards, production deadlines, incentives, and normal employee interactions, is also seen to closely mirror the reality of work in the private sector. So much so, that for many inmates at Warkworth work can become completely involving. As concisely stated by one inmate, "I'm not in jail when I'm at work."

## **Case Discussion**

The description of the organizational context, demands, and employee participation in the industrial operations at Warkworth provides ample information relating to a wide range of issues. In reviewing the case description, three interrelated perspectives emerged which provide insight into how correctional industry has evolved at Warkworth. In the sections that follow the strategy of boundary spanning, the sociotechnical view of work, and the characteristics of employee involvement are briefly presented.

## **A. Boundary Spanning**

The efforts of the Operations Manager to become more involved in various aspects of the Institution provides several insights into how the CORCAN operation adapted its relationship to the organizational context within which it operates. Correctional industry has been traditionally seen as fulfilling a specific function within the institutional hierarchy, namely, that of providing work experience and skills development for inmates. This view reflects traditional views of hierarchical organizations where the boundaries of each unit are relatively well defined, and the function of each unit is straightforward, standardized, and specialized.<sup>4</sup> However, as the nature of organizations becomes more complex, and units become more interdependent, there is an increasing need to become more integrated and coordinated, to span boundaries, in order to achieve organizational objectives. The move from boundary definition to boundary spanning, therefore, increasingly becomes the means of realizing organizational goals.<sup>5</sup>

The efforts made to have CORCAN increasingly involved in Warkworth Institution activities are an example of the boundary spanning approach. These efforts are reflective of the general move towards more integration in the Correctional Service itself. The Correctional Strategies, for example, supports an integrated approach of meeting offender needs. Similarly, CORCAN as an SOA recognizes the importance of integration, and is committed to the development of interlinkages between CORCAN and Correctional Services.<sup>6</sup>

The integration efforts undertaken by CORCAN at Warkworth are of two types. The first of these is centred on the interlinkage of process. Linking inmate work performance records to the Case Management process is a good example of spanning the boundaries between correctional industry and Case Management practice. Similarly, having instructors serve as Cognitive Skills Coaches is an example of expanding the participation of CORCAN in the correctional process. These process linkages established at Warkworth are illustrative of the potential prison industry has for becoming more involved in the correctional process.

This case study also highlights the role of a second type of organizational integration - that of position interlinkage. The Operations Manager at Warkworth made significant efforts to become more involved in Institutional management. As a result, he served in positions related to Institutional operations, in addition to his position as the head of CORCAN operations. In a sense, this form of integration might be seen as an effective strategy for managing the organizational intersection between CORCAN and the Institution. Such position interlinkage provides increased access to information, additional channels for communication, and assists both organizations in coordinating their actions.<sup>7</sup> In turn, of course, such position interlinkages can further facilitate correctional process integration efforts. In short, boundary spanning efforts which focused on both processes and positions in this situation appeared to be an effective strategy for organizational integration.

## **B. A Sociotechnical Perspective**

The implementation of a quality control system at Warkworth reveals striking similarities to the principles of sociotechnical theory in the organizational literature.<sup>8</sup> The central concept of sociotechnical theory is that any organization consists of both a technological system and a social system, and that both systems interact and influence each other. The technological system consists of machinery, tools, methods, production processes, and related technical matters. The social system encompasses such aspects as organizational structure, roles, employees and jobs. Each system has its own goals, yet both systems are intertwined. Any changes to one system are often related to changes in the other system.

A sociotechnical perspective of the correctional industry at Warkworth reveals the manner by which these two systems mirror the performance objectives of CORCAN - correctional and commercial. The social system is the domain that relates to the correctional objectives of meeting inmates needs for work experience and skills. Positive work attitudes and values, for example, are indicators of an effective social system. Similarly, the technological system is representative of the area concerning commercial production. Traditional measures of quality and production, of course, are indicative of the performance of the technological system. The challenge facing CORCAN to meet both correctional and commercial objectives at Warkworth bears a strong correspondence to the sociotechnical principle of balancing the dynamics of both systems to reach an overall optimization.

The driving force for change at Warkworth was the demand for quality. In response, extensive changes were made to the work process so that product quality could be monitored and maintained to high standards. The emphasis

on obtaining quality standards accreditation reflects a primary focus on one system, namely, the technological system.

What is of particular interest in this case is the relationship between changes which occurred in the technological system with those that developed in the social system. For the most part, positive results associated with establishing a quality control system had positive effects on the social systems, particularly in regards to employee involvement.<sup>9</sup> Inmates, for example, were given more responsibility and authority in their jobs. The increased emphasis on production also served as a common goal for both staff and inmates, and so had a unifying effect. Instructors were encouraged to be more responsible for the operations in their shop than previously. In addition, the changes to the work process encouraged the use of participative leadership styles by management.

While some of these changes might have been anticipated, some were not. Each shop is now more suggestive of a work team setting, with instructors expected to serve more as team leaders or coaches than they had previously. This has created some ambiguity for instructors as to the nature and extent of their role under the revised technological system. Clarifying the changed roles and expectations of instructors may require some careful attention to the social systems aspect of the CORCAN operation. A sociotechnical perspective, therefore, helps explain how the implementation of a quality control system had a positive effect on employees, while also highlighting the increasing need to attend to the social system directly.

## **C. Understanding Employee Involvement**

A reoccurring theme at Warkworth is the increase in involvement and participation by both staff and inmates. For the most part this has developed rather informally, rather than being attributable to any specific approach or method of increasing employee involvement. Determining how these changes have come about, however, requires defining the key characteristics of employee involvement. Research over the years in leading organizations which are participatively managed has revealed four characteristics of organizations which can be used to understand employee involvement.<sup>10</sup> These characteristics provide a framework by which to understand the changes in employee involvement that have occurred at Warkworth.

The first characteristic of employee involvement is power and decision making. There is often the impression that employee involvement means that decisions require the complete participation or consensus of all involved. In fact, decision-making styles may range on a continuum from top down autocratic approaches on through to complete delegation of the decision to employees. In addition, the level of decision-making may vary from day-to-day operation matters on up to high level strategic decisions.

The key change at Warkworth on this characteristic is the use and emphasis placed by the Operations Manager on a consultative approach to decision-making in day-to-day operations. In effect, the management by walking around practiced by the Operations Manager was oriented towards consultative decision-making. Employees can input their views on matters requiring a decision, and the decision is handled by the Operations Manager, or the employees, as seen appropriate. The result of this approach is the repeated involvement of staff and inmates in the necessary decisions of everyday work.

The second characteristic of employee involvement is information. Considerable information is necessary for employee involvement, since without it participation and involvement become severely constrained. For employee involvement to be effective, however, certain kinds of information have to flow downward in the organization.

Employees at Warkworth have open access to production and financial information. The size of the operation allows such information to be distributed primarily through informal means, and employees often receive such information directly from the Operations Manager. This information is especially relevant to inmates since it provides the necessary details to put the incentive plan in context. In addition, the open book approach to production and financial information has the benefit of enhancing inmates perceptions of

CORCAN credibility and honesty. Another kind of information, namely employee ideas and suggestions, also tends to be handled informally. In many ways, however, the downward and upward flow of information is primarily a result of the way the interactions between management, inmates, and staff have developed over the last few years, rather than due to specific attention being paid to the way information is distributed.

The third characteristic of employee involvement is rewards. Sharing the gains achieved by an organization is an important part of employee involvement. Basing rewards on organizational performance has the important effect of aligning employee interests with organizational goals, as well as rewarding employees for their involvement and participation.<sup>11</sup>

Without a doubt, the greatest motivator of work involvement at Warkworth has been the CORCAN incentive plan. Whereas other forms of involvement are essentially intangible, a profit sharing approach to distributing rewards is especially concrete and meaningful. The incentive plan emphasizes inmate involvement and participation in the beginning stages of their work experience. It was interesting to note that for some inmates the internal rewards of work also become an additional motivating influence. That is, external rewards initially encouraged work involvement, but over the course of time the intrinsic rewards of work, such as feelings of accomplishment and self-confidence, also increased as a result of work involvement.

The last characteristic of employee involvement is knowledge and skills. An increase in employee involvement usually requires an increase in training. Such training focuses on technical or business aspects of the job, or attends to the more people centred needs of the organization. The latter focus tends to include training in interpersonal skills, leadership skills, or team work and problem-solving.

The training at Warkworth has concentrated primarily on increasing staff and inmate knowledge about the quality control system that was being implemented. This focus reflects the distinctions made previously between technological systems and social systems. The increasing levels of employee involvement by both staff and inmates, however, can be expected to make the need for training in people skills more pronounced.

## **Implications**

A review of the Warkworth case study reveals several implications for both research and practice. A sampling of issues to consider are briefly presented in the following sections.

### **A. Research Implications**

Prison industry has not been known as a hotbed of correctional research. What research there is appears to focus on inmate outcomes, such as recidivism and employment, resulting from inmates having worked in correctional industry. This case study suggests there is considerable merit in also examining the experience of work, rather than just the results of having worked. The following proposals outline some possible new directions in prison industry research.

The importance of instructor characteristics to the instructor-inmate work relationship is accentuated in this case study. The increased emphasis on coaching inmates suggests that the leadership role adopted by an instructor can have a positive effect. Little is known, however, about the impact of leadership styles on inmates. Upon close examination, the coaching, advising and trusting leader styles used by some Warkworth instructors appears similar to what has been termed transformational leadership. In what may be the only leadership study done with inmates in prison industry, it was found that supervisors who adopted a transformational leadership style were associated with increased productivity and inmate respect in minimum, medium, and maximum security prisons.<sup>12</sup> Further research in this area could usefully extend these findings.

A second area that shows research promise is the measurement of concepts not traditionally explored in correctional industry research. In examining the nature of the response inmates had to the positive changes that occurred at Warkworth, there appeared to be a common theme. Specifically, terms such as fair, open, honest, and trust were mentioned more often than might be expected. These terms suggest additional concepts that might be investigated in prison industry settings. The concept of fairness might be examined from an organizational justice perspective.<sup>13</sup> Inmates' participation in decision-making, for example, may influence their perception of fairness and attribution of trust. These and similar issues involving credibility and integrity may provide rewarding new avenues for correctional industry research.

Lastly, the situation at Warkworth highlights the work group as a unit of analysis to consider in future research. Correctional research has tended to focus on the individual inmate as the unit of analysis. In contrast, the

individuals within each shop form a work group which appears to have a natural cohesiveness worthy of consideration in future research. The nature of the work process, the interdependence due to the quality control system, and the increase in a team-oriented approach all support the distinctiveness of each shop. Simply put, inmates usually experience work in a group, and the changes at Warkworth appear to have increased group influences. A group perspective in future research, such as teamwork or organizational climate for example, appears to be a promising line of inquiry.

## **B. Operational Implications**

The insights gathered from examining the nature of CORCAN operations at Warkworth suggest a wide variety of operational ideas for consideration, the extent of which can not all be discussed here. The following three suggestions, however, outline some areas where the insights gained from Warkworth are interpreted in operational terms.

The Warkworth case underscores the importance of leadership styles in conjunction with the move towards quality control systems. This case study, however, should definitely not be taken as a prescription for the use of a specific leadership style. Rather, the case suggests that the leadership style of managers and instructors becomes more important the more employee involved the correctional industry becomes. At an operational level, this implies that as changes of a similar nature occur in other prison industry settings, leadership skills will increasingly need to be addressed. This may require leadership training for staff, or possibly including leadership skills as a criteria in the selection of staff in the future.

The sociotechnical perspective of the Warkworth situation also reveals the increasing importance of the social system within an organization, especially in times of change. How the social system is doing, however, is usually not really known. That is, there are no indicators, other than informal perceptions, which can be used to understand or make adjustments to the social system. Some type of feedback mechanism, whether it be work attitude surveys, a suggestion system, or structured team meetings for example, would provide a gauge of how employees see their work within the organization. As a result, a combination of social and technological system indicators would present a more rounded picture of CORCAN operations. In addition, the collection of such information over time could be used as a baseline against which the impact of future changes could be assessed.

A third area of promise highlighted by the Warkworth case is the use of work teams in CORCAN operations. While there are many definitions and connotations as to what constitutes a work team, they typically involve groups in close interaction within a defined area who have interdependent tasks, and who are usually characterised by high levels of cohesiveness. This definition



closely fits the situation that has developed at Warkworth. Work teams have been shown to be one of the most effective means of increasing productivity and affecting work attitudes.<sup>14</sup> A work team approach, therefore, appears to be the next appropriate stage for correctional industries which have developed to a level comparable to that of Warkworth.

This suggestion does not imply, however, that self-managing work teams be implemented to the degree found in more advanced corporations in the private sector. Such an expectation would be rather unrealistic in correctional industry. Rather, work teams might be developed by further refining and strengthening the employee involvement characteristics already in place. Information feedback, for example, could be designed to specifically meet team needs for each shop. Similarly, inmate training could be organized so that it reflects both team and personal development goals. A work team approach, therefore, appears to provide a fitting framework on which to model future changes.

In summary, the importance of leadership skills, the need for social system indicators, and the potential of a work team approach arise as operational implications from the insights gained from the Warkworth situation. These suggestions, of course, are not applicable to all correctional industries in all institutions. Rather, the operational insights gained from patterns and processes observed at Warkworth should provide a deeper understanding of ventures in other prison industry settings.

## Endnotes

1. For example, see the Correctional Strategy Discussion Paper, 1992.
2. These expectations are outlined in the Correctional and Conditional Release Regulations 105 (a) and (b).
3. The perspective and approach taken to implementing the quality control program at Warkworth is detailed in a paper entitled Inmate and Staff Empowerment Through a Quality of Working Life Approach to Quality Control (1992) presented to the Correctional Education Association by the Operations Manager, Paul Urmson.
4. Lawler, Edward E. (1988). Substitutes for Hierarchy, in the journal Organizational Dynamics.
5. Boundary definition and boundary spanning as discussed here are essentially the same as the concepts of differentiation and integration first put forward by Lawrence and Lorsch (1967) in their book Organization and Environment: Managing Differentiation and Integration.
6. The theme of integration can be found in the CORCAN Special Operating Agency Charter Document, as well as the 1993/94-1995/96 CORCAN Business Plan.
7. Position interlinkages in this case can be considered a form of interfirm linkages. An academic review of organization-environment relations is found in Davis and Powell (1992), in Organization-Environment Relations in Marvin Dunnette and Leaetta Hough (Eds.), Handbook of Industrial and Organizational Psychology.
8. The classic presentation of sociotechnical theory is E. L. Trist (1981), The Evolution of Sociotechnical Systems: A Conceptual Framework and Action Research Program.
9. In a survey of Fortune 1000 corporations, Lawler, Mohrman and Ledford (1992) found that the implementation of quality practices appeared to be synergistic with the implementation of employee involvement. The survey results are presented in Employee Involvement and Total Quality Management: Practices and Results in Fortune 500 Companies.
10. The four characteristics of employee involvement are a pervasive theme of books by Edward Lawler. For example, see High Involvement Management

(1986) and The Ultimate Advantage: Creating the High-involvement Organization (1992).

11. The subject of reward systems is extensive. A comprehensive overview of the topic is provided by Lawler and Jenkins (1992) in Strategic Reward Systems, in Marvin Dunnette and Leaetta Hough (Eds.), Handbook of Industrial and Organizational Psychology.

12. PhD dissertation research as cited in Bass (1990), From Transactional to Transformational Leadership: Learning to Share the Vision, Organizational Dynamics.

13. Organizational justice is described in Tyler and Bies (1990) Beyond Formal Procedures: The Interpersonal Context of Procedural Justice. In J. S. Carroll (Ed.), Applied Social Psychology and Organizational Settings.

14. A comprehensive overview of self-directed work teams is provided by Goodman, Devada & Hughson (1988). Groups and Productivity: Analyzing the Effectiveness of Self-Managing Teams. In J. P. Campbell and R. J. Campbell (Eds.), Productivity in Organizations.