

STRATEGY FOR SURVIVAL

Issues & Recommendations Concerning  
the  
Implementation and Impact  
of  
CAD/CAM Technology in Canadian Industry

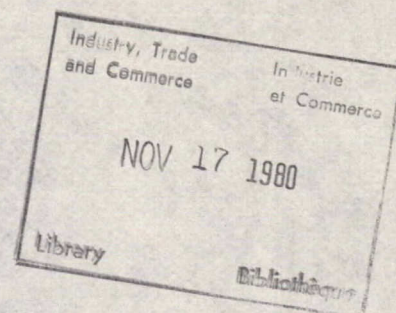
Executive Summary

Of a report by the  
CAD/CAM Technology Advancement Council\*  
to  
Canadian Industry, Educational Institutions & Government  
as a Contribution to Manufacturing Industry  
Productivity Improvement and Development

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In terms of long term growth and job creation, the manufacturing industries are one of the most important sectors of the total Canadian economy, yet manufacturing industry employment, as a percentage of the total labour force is on a declining trend. Productivity will be especially important to the Canadian manufacturing industries in the 1980's if traditional markets are to be retained and new ones gained in the face of lowered tariff protection and increasing external competition.

In this context, the rapidly emerging use of Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) technology is of special importance.

With the advent of CAD/CAM, it will become increasingly evident in the 1980's that the design of the factory is just as important as the design of the product. Developments will lead increasingly to the marriage of both Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) into highly integrated design and production systems.

In Canada, the Department of Industry, Trade and Commerce established a CAD/CAM Technology Advancement Council in 1978, with members from industry, universities, and government. Objectives of the council include increasing the awareness in industry, and elsewhere, of the importance of this technology, and dissemination of information to encourage and assist CAD/CAM development and application in Canadian industry. The council report, addressed to Canadian industry, educational institutions and government has been prepared to further these objectives, as a contribution to productivity improvement, and to the renewed development of a strong manufacturing industry.

The technical and economic factors associated with CAD/CAM systems will cause the technology to be adopted in industry at a rapid rate, particularly in Japan, Germany and the U.S.A. There is therefore a degree of urgency, for competitive reasons, to the recommendations contained in this report. It would appear urgent and essential that the federal government should form an inter-departmental task force at the management and technical level to, first, prepare a formal response to the recommendations of this report and, secondly, to undertake or initiate action as may be appropriate.

The primary recommendation of the report is concerned with the establishment of a Canadian centre for CAD/CAM. The centre's activities would include an information dissemination role, and the contracting out of coordinated research and development projects to other centres, institutions and companies.

The council report identifies many issues, discusses each in turn and makes specific recommendations. In summary, however, the council makes three main recommendations, one each to government, industry, and educational institutions.

A - To government, council recommends that a small inter-departmental task force be formed to prepare a formal response to the recommendations involving government contained throughout the report, and to initiate action where appropriate. There is a degree of urgency to this. Priority should be given to establishing the proposed Canadian Centre for CAD/CAM in an effective manner at the earliest date possible, and to those recommendations concerned with awareness, manpower, education and training.



B - Council recommends to industry that virtually every manufacturing company in Canada should designate at least one person in a technical management capacity within the organization to become aware of developments in CAD/CAM technology, if this is not already being done, and to plan the response of the firm to the threats and opportunities that this new technology involves. A second step should be to establish links & mechanisms through development centres and technical societies for the definition and undertaking of projects meeting common needs on a group basis at minimum cost.

C - To educational institutions, particularly, universities and community colleges, council recommends that they examine their course curricula to ensure that CAD/CAM technology, particularly its systems and application nature, is adequately represented. It is further recommended that educational institutions examine opportunities open to them for the education and training of personnel in industry in computer aided design and computer aided manufacturing, with emphasis being given to course material and programs for in-plant training.

The council report presents a state of the art review of CAD/CAM, plus a discussion of issues and recommendations for the development and utilization of this technology in Canada. Copies of either the full report or the condensed report are available on request from the secretariat of the CAD/CAM Technology Advancement Council, Technology Branch (61), Department of Industry, Trade & Commerce, 235 Queen St., Ottawa, Ontario, K1A 0H5. (613) 593-7861.





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