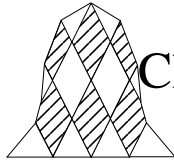


**Rising Tide,
Ebbing Fortune
- Technology and Change**

by

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Published by...



**Chrystobel
Engineering**

7 Wrixon Avenue Brighton Australia 3187
assimile Enquiries/Orders: +61-3-9578 502

ISBN 0 646 28746 X

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Layout by Chrystobel Engineering of Brighton Australia. Printed and Bound in Australia.

First Printed in Australia, 1996. Additional copies of this text may be obtained by directing purchase inquiries directly to Chrystobel Engineering.

Author

The author of this text is Dr. Dario Toncich. He was born in Melbourne Australia in 1960 and graduated, with honours, in Electrical Engineering, from the University of Melbourne in 1983. Since that time, he has held both industrial and research positions, and has been involved in numerous industrial research and development programs with leading advanced-technology companies.

As a result of his own research and development work in simulation, scheduling and control of manufacturing systems, Dario Toncich was awarded a Master of Engineering (by Research) from the Swinburne Institute of Technology and a PhD from the Swinburne University of Technology. In 1988, Dario Toncich was appointed as the foundation Research Manager of the Key Centre for Computer Integrated Manufacture and initiated and led a number of collaborative, research and development programs, some of whose outcomes were internationally commercialised by the collaborating companies.

In 1995, Dr. Toncich became Research Leader at the Industrial Research Institute Swinburne (IRIS) and currently heads more than a dozen collaborative industrial research and development programs in the scheduling, automation and control of manufacturing systems. He has previously authored two text books, related to the integration of industrial computer control equipment, and numerous international journal papers in his field. His views on industrial and business practices have been published in engineering and industry journals and editorialised in prominent business magazines.

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Foreword

Over the course of more than a decade, I was fortunate enough to visit, and work in collaboration with, a number of different companies, ranging from one-man organisations through to large multinational corporations. As a result of the positions that I held, I was able to acquire an interesting perspective, that it would not have been possible to acquire solely as a result of being an employee within, or a consultant to, those organisations. I also had the opportunity of gaining first-hand experience with some of the agents that purported to provide support for those companies, most notably the universities and research organisations, the consultants, the inventors, the retailers and numerous others.

Despite the diversity of the companies, with which I had dealings, and the diversity of the agents that supported them, one common theme became apparent - business and industry, in the developed world, had changed irreversibly as a result of the rising tide of developing countries that were succeeding in areas once thought to be unassailable, from a naive Western perspective. It was also particularly interesting to note that, despite the diversity amongst developed countries, the same themes and messages emanated from businessmen and academics in Australia, Britain, Canada, Germany and the United States.

A decade ago, the developed world comforted itself with the myth that it would sustain itself, through high-value-added knowledge and service-based products, while the developing world would be content to undertake unclean and undesirable manufacturing activities. However, we now know that developing countries have the same aspirations of providing high-value-added products as those countries in the developed world, and a much greater drive and propensity for achieving results - these attributes are born of economic necessity and a knowledge (acquired from viewing historical precedents in the developed world) that commitment to common goals can lead to considerable benefits for future generations

For a number of reasons, therefore, the rate of change from "developing country" to "developed country" is increasing and the competitive pressure on companies, within the developed world, is, correspondingly, greater than ever. Nowhere is this more evident than in small and medium sized enterprises, where a combination of circumstances, composed of technological, political and natural change, have seemingly

conspired to make success in business less probable, and the window of opportunity smaller than at any previous time in history.

In this book, we examine the basic threads that form a complex mesh in which business and industry, in the developed world, must function. The basic threads are historical, political and technological but there are numerous other threads. Leadership, aspiration, complacency and inefficiency are also threads, sometimes invisible and other times difficult to quantify, particularly when they pertain to organisations, such as industries, universities and government bureaucracies, that have evolved over centuries. These other threads have made the task of managing technology and change all the more difficult and the chances of success all the smaller. The purpose of this book is therefore to identify some of the basic threads that enmesh business and industry, in the developed world, and to relate them to the management of technology and change.

Of all the above-mentioned threads, the ones that may have contributed more to change than any other are those related to the evolving attitudinal values of the work-force in the developed world. At the commencement of the 20th Century, the world was divided into employers and employees, and most of the political and military struggles, during the course of the century, were related to achieving some ideological balance between their conflicting objectives. However, by the end of the 20th Century, it became apparent that the undercurrent of industrial and technological change ultimately imposed its own agenda upon the work-force.

By the end of the 20th Century, internationalisation and economic competition, between developed and developing countries, had effectively eliminated security of employment tenure, and the notion of a time-based working week. A large proportion of employees had in practice, if not in law, become individual companies, contracting their services to former employers. In the developed world, notions of common-purpose (exhibited in many developing countries) and company loyalty eroded because individuals became, in effect, companies in their own right. While many bemoaned the loss of traditional company loyalty, they gladly accepted the increased flexibility and potential efficiencies that the new agenda had delivered. However, the "*me-incorporated*" attitudes, that emerged in the developed world, also created numerous new managerial problems and overheads. For the most part, these new problems either remained unnoticed, or noticed and ignored, because of the entrenched systems and management structures that

existed in countries which had been developed, and prosperous, for significant periods of time (i.e., the "pre-war-developed" nations). In this book, we examine some of those problems and overheads and the way in which they impact upon competitiveness.

It is also important to note that this is, intentionally, a book in which arguments are expressed in a qualitative, rather than quantitative, manner. The objective is, wherever possible, to avoid debate on statistics that can often be complex, multidimensional and interpreted in any number of ways to suit an argument. It is therefore hoped that the reader will take the arguments, presented herein, as the opinions of an observer, sometimes biased and sometimes unbiased, often cynical, but always presented with the intent of painting a picture that many may recognise - particularly when the picture is a portrait of their environment, observed from a more-distant perspective.

Finally, readers should note that, in broad terms, this is really a book about the difficulties that have been introduced into business and industry, in the developed world, as a result of technology and change. However, it is not intended to be a negative text. By corollary, it is a tribute to those industries in the developed world (particularly the small to medium technology enterprises) that have managed to prosper and grow despite the rising tide of change that has engulfed them.