



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

21428

UNIVERSITY OF SÃO PAULO
Faculdade de Economia Administração e Contabilidade
Fundação Instituto de Administração

WORKSHOP ON MARKETING
OF HIGH TECHNOLOGY PRODUCTS AND SERVICES

FINAL REPORT

US/ICL/95/105
CONTRATO Nº 95/269

Eduardo Vasconcellos
coordinator

SPONSORS: UNIDO/ICS AND SEBRAE

December 1995
São Paulo, BRAZIL

ABSTRACT

This report refers to a Workshop on Marketing of High Technology Products and Services, organized in Sao Paulo by Fundacao Instituto de Administracao at the University of Sao Paulo, Brazil, from December 11 through 15 and sponsored by UNIDO/ICS. As agreed with UNIDO/ICS, the event was also sponsored by a Brazilian organization created with the purpose of supporting small/medium companies (SEBRAE), with a view to promoting similar initiatives in Brazil. The workshop tackled two groups of problems affecting high-tec business in developing countries. Firstly, the problem of selecting and adapting marketing tools for the special reality of small/medium high-tec companies in Latin America. Examples of the managerial instruments presented and discussed with the participants are: international trade techniques, market research, pricing, technological auditing, negotiation techniques, and ISO 9000 certification.

The second area of problems relate to the actions and policies that can be designed and implemented to support those companies without creating eternal dependency on government subsidies, generating artificial competitiveness which will not be feasible to be sustained in the long term. Some important actions which came out as suggestions to be implemented are: development of capabilities in the area of establishing and managing strategic alliances between small/medium high-tec companies, development of instruments to identify technological needs of high-tec small/medium companies, product and service innovation guidelines for high-tec companies in developing countries and the management of their linkage with research and development centers. Specific suggestions for UNIDO/ICS' role are also presented.

TABLE OF CONTENTS

ABSTRACT

I-INTRODUCTION

II-THE CHALLENGES

III-PROPOSED OBJECTIVES AND RESULTS

IV-PARTICIPANTS

V-PROJECT COORDINATION

VI WORKSHOP EVALUATION

VII-FINAL COMMENTS AND RECOMMENDATIONS

ANNEXES

-Financial Report

-Material distributed to participants

I-INTRODUCTION

This report relates to a Workshop on Marketing of High Technology Products and Services, held in Sao Paulo Brazil from December 11 through 15, organized by Fundacao Instituto de Administracao, by request of UNIDO/ICS and sponsored by UNIDO/ICS and SEBRAE. SEBRAE is a Brazilian non profit organization created with the purpose of strengthening the competitive capabilities of small/medium companies. Its involvement in this workshop, as agreed with UNIDO/ICS, had the objective of stimulate the promotion of future similar activities in Brazil

II-THE CHALLENGES

The globalization trend is increasing the level of competitive requirements for high-tec companies. This need is specially strong for small/medium high-tec companies in developing countries in Latin America. The lack of knowledge about marketing and technology management tools are considered a major hindrance for the sustainable competitiveness of their firms.

Although the success of a high-technology based company depends on the mastery of specific technologies, this is an insufficient condition. If those technologies do not satisfy changing market needs and if they are not more effective than other competing options, the company will fail. Besides, a technology will increase the competitiveness of a company only if associated to a product which is brought effectively to the market, utilizing adequate management techniques. For this reason, the entrepreneur should understand the marketing instruments and other key managerial tools that will make possible the integration between the company's capabilities and the market needs.

In Latin America, the marketing of high-tec products and services is specially critical due to several factors. Firstly because of the globalization trend, requiring higher levels of managerial abilities of developing countries to face the competition of products and services of developed countries. A second aspect is the lack of knowledge about the specific marketing instruments for high-tec products and services which have different characteristics. Business schools in Latin America are generally capable of teaching the standard marketing courses but not high-tec marketing. Large companies in Latin America are solving this problem by sending executives to take courses abroad or inviting expensive consultants to teach their executives. However, the small/medium companies do not have the resources to adopt the same solution. This workshop presented an opportunity to benefit a group of participants from those companies and at the same time it generated suggestions of actions and policies to extend such benefit to other companies in Latin America.

III-PROPOSED OBJECTIVES AND RESULTS

The objectives of this workshop were (1) to increase the capabilities of the participants in utilizing modern marketing techniques for high-technology products and services; (2) to generate suggestions of policies and actions to increase the competitiveness of high-tec companies in developing countries, and (3) to identify possible future roles of UNIDO/ICS in supporting high technology activities in Latin America. The third objective was also considered as part of ICS's demand survey.

The first objective was attained through the lectures and discussions of the following topics:

DAY 1: marketing management - a systems approach; special characteristics of the behavior of the consumer of high-tec products and services; market niches, mapping the environment, analysis of the competition, pricing, market research.

DAY 2: Development of new products and services; distribution channels, the relevance of quality management for small/medium high-tech companies; ISO 9000 certification and international trade management for small/medium high-tec companies;

DAY 3: Market Globalization, challenges and opportunities to high-technology small/medium companies; the information high-ways and the opportunities for small/medium high-technology companies; high-tec products and services in view of the opportunities and threats of Mercosul; new technologies and new markets for high-tec companies.

DAY 4: New models for the management of small/medium high-technology companies in Latin America, management of technology - a general overview; mapping external sources of technology; joint ventures and technological alliances: advantages and limitations from the small/medium high-tec company perspective; interface with universities and research institutes; buying technology x internal development x research contract; research consortium, funding sources for technology development.

DAY 5: The importance of negotiation; negotiation strategies and techniques applicable to high-tec products and services; behavioral aspects of negotiation; barriers and facilitators related to the creation of small/medium high-tec companies in developing countries; actions and policies to overcome those barriers.

A participative teaching method was utilized. The instructors spent no more than 35% of the time with formal lectures. The remaining time was devoted to debates, presentations by the participants about their real life cases and exercises to stimulate them to evaluate their own experiences and to apply the concepts to their own realities.

The second and third objectives was achieved through group interactions, using as a basis, papers prepared by participants of the workshop. Participants were asked to bring short

papers describing problems their companies were facing and suggestions of policies and actions to overcome them. A preliminary list of actions and policies was made based on these papers and distributed to the participants. The workshop coordinator, the UNIDO/ICS representative and two research assistants sat through the whole workshop making notes of problems and suggestions made by the participants during the debates. A more complete list was prepared and participants were divided in groups to identify priority levels. Two sessions of two hours each were added to the workshop schedule to accomplish this task. Results are shown in the Table below.

PROPOSALS TO INCREASE THE COMPETITIVE CAPABILITY OF SMALL HIGH TECHNOLOGY COMPANIES

1. Stimulate the strategic thinking, using the production chain approach
2. Human Resources development program on technical and managerial areas
3. Eliminate red tape in the process of creation of small/medium firms, taking into account the different sizes of the companies
4. Financial, technical, legal and managerial assistance to small/medium companies
5. Increase the actions of embassies, to help the companies' s international trade
6. Government actions to facilitate technology transfer
7. Create data banks on products, services and technologies to facilitate the exchanges between buyers and suppliers
8. Organize forums to facilitate the exchange of information between non competitors
9. Stimulate and support alliances between small/medium companies
10. Stimulate managers of small/medium companies to develop a long term perspective
11. Create associations of executives from small/medium companies to discuss technical, financial, production and commercial matters
12. Create government agencies in Mercosul to establish standards for software in government purchases
13. Create organizations to guarantee loans to small/medium companies
14. "Factura Conformada"
15. "Bolsa de Sub-contractación"
16. Industrial and technological policy to stimulate expenditures on R&D and integration between universities and small/medium companies
17. Provide subsidized capital and low interest rates for small/medium companies
18. Provide subsidized training programs for executives of small/medium companies
19. Utilization of INTERNET to inform about government purchases, courses and business opportunities

20. Increase marketing capabilities of small/medium companies, using information technology techniques
21. Create special credit lines for high risk capital, within the financial institutions
22. Increase stock market flexibility to adapt to the high-technology small/medium companies characteristics
23. Promote the country image through a marketing program to be jointly developed between government and industrial associations
24. Review the legislation that block the use of new technologies
25. Reduce the infrastructure costs of the country, including high taxes which reduce the export competitiveness of small/medium companies
26. Repeat the workshop

IV-PARTICIPANTS

The workshop was addressed to entrepreneurs, managers and owners of small/medium high-tec companies of Brazil, Chile, Argentina Uruguay and Paraguay. The last two countries did not have representatives in spite of all the efforts made to recruit participants from those countries. The commercial departments of the embassies of all countries were involved in the recruitment process.

V-PROJECT COORDINATION

On behalf of Fundacao Instituto de Administracao, the coordinator of this workshop was Prof. Eduardo Vasconcellos. He had the assistance of Lino Rodrigues, marketing professor and Silvio A. Santos, technology management professor. On behalf of UNIDO/ICS the coordinator was Emilio Vento.

VI- WORKSHOP EVALUATION

Participants evaluated the performance of the instructors according to 12 factors. Table 1 shows the results. Maximum level of agreement with each statement was 4. Most factors were evaluated above 3.5.

Table 2 shows the evaluation of the workshop as a whole, using 12 variables and a 1 to 4 scale. The last question asks for an overall evaluation, using a 1 to 10 scale. The overall grade was 9.0.

TABLE 1 - EVALUATION OF INSTRUCTORS

EVALUATION FACTORS	Lino Rodrigues	Silvio Santos	Odécio Branchini	Roberto Mónico	Eduardo Vasconcellos	Fernando Machado	Washington Mathias
01-Content according with workshop proposed objectives	3.60	3.33	2.60	3.46	3.93	3.66	3.81
02-Instructor's knowledge about the subject was very high	3.81	3.93	3.62	3.66	4.00	3.91	4.00
03-Instructors presented very relevant information about the subject	3.75	3.78	2.81	3.60	3.93	3.81	3.75
04-Adequate practical examples to illustrate the concepts	3.66	3.80	2.68	3.73	3.62	3.33	3.87
05-Presentations clear and objective	3.81	3.86	3.31	3.60	3.93	3.66	3.93
6-Adequate time distribution among the several topics	3.37	2.93	2.68	3.60	3.50	4.00	3.81
07-Use of modern and effective teaching techniques	3.62	3.57	3.00	2.93	3.87	3.50	3.93
08-Adequate involvement of participants in the discussions of the topics	3.81	3.73	3.12	3.21	3.68	3.41	3.50
09-Ability in the coordination of debates	3.75	3.66	3.14	3.35	3.68	3.83	3.68
10-Ability in clarifying questions	3.75	3.80	3.81	3.40	3.93	3.66	3.62
11-Adequate bibliographic references	3.35	2.84	1.81	2.14	3.93	3.58	2.23
12-Comprehensive synthesis at the end of the presentation	2.71	3.46	2.73	2.57	3.81	3.58	2.93
AVERAGE	3.58	3.56	2.94	3.27	3.82	3.66	3.59

1 = total disagreement 4 = total agreement

TABLE 2 - WORKSHOP EVALUATION

01-Coherency between workshop objectives and content	3.73
02-Quantity of new and relevant information	3.66
03-Adaptation of the workshop to the participants needs	3.40
04-Balance between theory and practice	3.26
05-Selection of topics	3.80
06-Order of the presentations	3.73
07-Participants profile	3.73
08-Amount of time devoted to each topic	3.20
09-Total number of hours of the workshop	3.33
10-Quality of the material in terms of content	3.73
11-Quality of the material terms of visual presentation	3.73
12-Exercises and practical applications	2.80
13-Audio-visual resources utilized by instructors	3.80
14-Amount of material distributed	3.73
15-Infrastructure and services available to participants	3.93
16-Balance between group participation and formal lectures	3.66
17-Contribution of the workshop to professional development of the participants	3.66
18-Amount of acquired knowledge applicable to the reality of the participants	3.46
19-Interpersonal relationships among the participants	3.86
20-Interest and motivation about the workshop	3.93
21- From 1 to 10 what grade you would give to the workshop as a whole ?	9.00

N = not applicable 1 = not adequate 2 = little adequate 3 = adequate 4 = totally adequate

VII-FINAL COMMENTS AND RECOMMENDATIONS FOR UNIDO/ICS

One important objective of the workshop was the generation of suggestions to increase the competitive capability of small/medium high-tec companies. Three suggestions are presented below:

a-Repeat the Workshop

b-Develop a Program on Strategic Alliances Between Small High-Tec Companies

c-Develop Tools for the Identification of Small/Medium Companies Technological Needs for Sustainable Competitiveness

A-REPEAT THE WORKSHOP

The workshop demonstrated clearly that the survival of small/medium high-tec companies depend strongly on the development of managerial capabilities adapted to their specific needs. High tec companies are generally created by entrepreneurs with strong technical background and low managerial capability. Therefore, repeating this workshop to other groups of participants is a first suggestion to be considered by UNIDO/ICS.

A variation of this suggestion is the development of a program to teach trainers in several regions of the world to make them able to repeat the program to other audiences. The future development of a book, videos and other teaching tools, containing the main concepts and practical applications can considerably improve the impact of the workshop.

B-DEVELOP A PROGRAM FOR THE DEVELOPMENT OF STRATEGIC ALLIANCES BETWEEN SMALL HIGH-TEC COMPANIES

RELEVANCE:

Strategic Alliances is a definite trend worldwide. Large companies are developing alliances with the purpose of reducing the cost and increasing the speed of innovation as well as sharing the risks involved in the process. Small companies should adopt this strategy with more intensity because they are small/medium and have less resources. However, this does not happen because the techniques to identify opportunities, negotiate, implement and effectively manage those alliances are not known by their managers.

OBJECTIVE

Increase the capabilities of small/medium high-tec companies in identifying, negotiating and managing strategic alliances for sustainable competitiveness

ACTIVITIES

The initial activity could be the organization of an Expert Group Meeting on Strategic Alliances Techniques for Small High-Tec Companies with the duration of 2 days. This event would have the purpose of designing the program and it should involve at least:

- 2 consultants in the area of strategic alliances
- 2 executives from small/medium/medium size high-tec companies with practical experience in negotiating and managing strategic alliances
- 2 representatives of international agencies that might be potential sponsors of the program

The output of the workshop will be the design of a 5 year **Program on Strategic Alliances for Small/Medium High-Tec Companies**, containing objectives, goals, activities, budget, possible funding sources, etc.. Such a program could develop activities such as:

-Data banks on high-tec companies in developing countries with information about: success and failure cases of alliances between small/medium high-tec companies, potential partners interested in strategic alliances, bibliographic references on strategic alliances and others

Development of skills for establishing, managing and assessing strategic business areas among high-tec small/medium companies

- Funding to partially support studies on this topic, including benchmarking studies
- Funding to organize panels within international management conferences on this topic
- Development of training materials on the management of high-tec strategic alliances
- After the first three years, distant teaching techniques (video, cd-rom, internet) can be utilized

FUNDING

UNIDO/ICS might wish to consider sponsoring the start up of the program. Each country or region like Mercosul, for example, should develop complementary sources of funding to co-sponsor the program.

C-DEVELOP TOOLS FOR THE IDENTIFICATION OF SMALL/MEDIUM HIGH TEC COMPANIES TECHNOLOGICAL NEEDS FOR SUSTAINABLE COMPETITIVENESS

RELEVANCE

Many efforts are being made to increase small/medium size high-tec companies' technological capabilities: research programs sponsored by the government, university-industry links, tax incentives and others. However, the success of these initiatives depend on

the identification critical the technological needs of the companies for their sustainable competitiveness, which is not a trivial matter. There are many efforts going on in several countries in this direction, but there is a lack of integration among these efforts and a lack of more effective methodologies to accomplish this task. The development of the companies own capabilities in this respect is mandatory.

OBJECTIVE

The objective of this project is to design and test a methodology to identify critical technological needs for the sustainable competitiveness of small/medium high-tec companies in developing countries

ACTIVITIES

- Expert Group Meeting on tools for technological needs identification at plant level. Experts could be invited to write papers about their experiences in this field. The expected result is the design of tools, combining the strengths of the various experiences presented.
- Test the methodology with a sample of small/medium high-tec companies
- Large scale application through capacity building program
- Monitoring and assessment of results, leading to continuous improvement of tools by different agents.

FUNDING

UNIDO/ICS might wish to consider sponsoring the first two activities. The others should be co-sponsored by other international organizations or the by the institutions in the countries involved, which will benefit from the program.

**WORKSHOP ON MARKETING OF HIGH TECHNOLOGY PRODUCTS
AND SERVICES FINANCIAL REPORT IN US\$**

	BUDGET		ACTUAL EXPENDITURES	
RESOURCE PERSON		14,224		13,390
coordination	3,550		3,093	
instructors	6,240		4,639	
coordination assistant	1,136		4,948	
secretary's office	3,298		710	
MATERIALS AND SUPPLIES		1,120		2,911
SERVICES AND COMMUNICATION		4,656		3,959
TRAVEL COSTS FOR PARTICIPANTS		8,200		5,988
ACCOMMODATION COSTS FOR PARTICIPANTS		17,800		13,163
DIRECT COSTS		46,000		39,411
OVERHEAD		2,000		1,713
TOTAL		48,000		41,124

