



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

Distr.
RESTRICTED

UNIDO/ICIS. 44
12 September 1977
English

07810



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

NATIONAL CONSULTATIONS
ON
TRANSFER OF TECHNOLOGY
Algiers, Algeria
22-30 October 1977

THE NONEL® PROJECT.

A case study
by
Bertil Hedberg*

* Licensing Director, Nitro Nobel AB, Stockholm, Sweden.

The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.
This document has been reproduced without formal editing.

CASE HISTORY

THE NONEL® PROJECT

MARKETING PLAN, March 3, 1973.

Description of the NONEL® System

The NONEL system is:

- non-electric
- safe
- time-saving
- easy to use

The NONEL system gives:

- connection simplicity
- precision delay
- versatility
- initiation at the bottom of the charge
- low number of misfires

The NONEL system has:

- no self-blasting effect
- no limitation in blasting machines

The NONEL system can be used:

- in the vicinity of electric power stations and power lines
- in connection with communication radios
- during thundery weather

The present study contains a plan for the marketing of the NONEL System.

The study is divided in two main parts:

- A. Summing-up
- B. A plan for the marketing of the product

The Study recommends a concentration on export marketing and thereby on certain special groups of customers requiring high quality - a demand that can be satisfied by the NONEL System.

The plan recommends work to start in four test areas where good profit can be expected;

- a nation-wide broad introduction in two countries - Switzerland and Zambia;
- direct export sales to individual projects;
- sales to Swedish customers experiencing difficulties with other available initiation systems;
- licensing to certain highly industrialized markets where licensing can be expected to open up a market that otherwise would have been closed and where a continuous product and marketing development may be expected.

These measures would give a quick answer whether launching on a broad basis would be profitable.

A. Summing-up

The following study shows that:

- most markets of big volumes, high prices and high demands for quality are controlled by already established companies having both explosives and detonators on their program;
- most high-price markets are tending to stagnation;
- France has experienced the strongest recession;
- certain markets in Africa and Asia are expanding slowly but show a low-price structure at present;
- the most suitable country for efficient market testing with deep penetration is Switzerland;
- NONEL can be launched as a unique product with expected good profit both in already established markets and in expanding low-price markets;

- ANODET is the only existing alternative in the world to NONEL when a non-electric initiation system with built-in delay elements is required;
- NONEL is superior to ANODET in most working sites. Production costs are the same for both products; and
- A successful launching of NONEL is based on a highly automated process of tube production and coiling.

GUIDING PRINCIPLES IN THE LICENSING OF NONEL

- to enter into a joint venture on a 50/50 basis with a locally established company;
- to grant the new company an exclusive manufacturing and selling licence for the home market and a non-exclusive selling licence for the rest of the world;
- to make an arrangement with the licensee that he should purchase tube from Gyttop, at least in the beginning, if such purchase proves economic and involves no legal problems; and
- for each economic or linguistic area try to establish cooperation in the first hand with companies being suppliers of both explosives and detonators and having a vast coverage and an overcapacity in the production of detonators.

B. Plan for the marketing of NONEL

1. Total sales per year of detonators on the world market are 1.300 million pcs, of which 750 million pcs are electric detonators.

Typical features: Strong consolidation on the home market (monopoly - free market) and export sales of marginal quantities.

2. Constructors of tunnels and underground installations in mines are the most important and homogenous category of clients. "In city blasting" contractors come next in turn.

	Cordtex fuse	Unqualified Products	Qualified electric detonators
Mines	15 mill.pcs	250 mill.pcs	50 mill.pcs
Underground installations and tunnels		130 "	50 "
In city blasting		50 "	25 "
Unspecified use	135 "	570 "	25 "
Total	150 "	1.000 "	150 "

- An interesting group of prospective customers are big mines using cordtex fuse as initiation means at an ever-increasing degree.
3. Consumption of detonators has been decreasing with approximately 30% per year and this decrease is expected to continue, whereas the need for qualified products is increasing.
- Deep and wide drill holes require a smaller number of detonators per m3 of blasted rock;
 - Concentration on big working sites reduces the need for unqualified detonators;
 - According to the latest reports (OECD) tunnelling is expected to increase, a consequence of which would be an increased use of qualified electric detonators;
 - the use of cordtex fuse increases with the increase of mining of low-grade ore;
 - supervising authorities sharpen the demand for safety in rock blasting systems.
4. Nitro Nobel has produced a non-electric initiation system called NONEL.
- Its principal features are:
 - it is insensitive to electricity
 - it is immune to jolts and blows
 - it guarantees the same good utilization of explosives as the electric detonator
 - it is simpler and safer to handle compared to systems with electric detonators
 - it has a lower frequency of misfires compared to electric detonators

5. Demand for quality is high in the industrialized countries and is rapidly increasing.

- The reason is:

Existing safety rules;

Strong trade unions working for industrial safety;

The necessity of radio communications and electric equipment underground;

- Certain developing countries as well (for instance Zambia) have highly advanced safety regulations.

6. Test sales on a small scale of the NONEL system were carried out in 1972.

- These test sales have shown that certain customers (5-3%) are prepared to pay Kr. 1-1.50 more for the NONEL detonator than for the present electric detonator.

- The number of high-price customers will increase with increasing electrification.

- The following is a comparison between the NONEL detonator and the electric detonator as to cost-price-performance.

	Minimum öre/pc	Maximum öre/pc	Average öre/pc
Distributor's storage costs	1	1	1
Client's storage costs	0	3	2
Frequency of misfires	18	18	18
Training	1	4	3
Outer disturbances	25	200	50
Total	45	226	74

- The client is thus prepared to pay a minimum of Kr. 0:45 per pc and a maximum of Kr. 2:26 per pc more for the NONEL detonator than for the electric detonator.

7. The price picture is clear

- Industrialized countries

- high quality claims
- monopoly - free market
- considerably higher prices in the USA and Canada than in Europe

Developing countries

- Price variations on big markets
 - Low prices on small market
8. Investment in production plants is 50% higher for NONEL than for electric detonators.
- The main reasons are:
 - investment in automatic machines
 - the low capacity of extrusion machines
 - need for a special equipment for the preparation of explosives (dimensioned for 20 mill pcs per year)
9. A production unit with a capacity of 2 million pcs/year will be available during 1973.
- If detonators can be obtained from already available plants a further production unit with a capacity of 5 mill. pcs/year can be made available in 1975.
 - A prototype equipment for automated coiling can be ready in 1976.
 - Equipment for semi-automated shrinking can be ready in 1976/77.
 - A further production unit can be made available in 1977.
 - A unit for the production of tube can be taken into operation one year after decision to do so has been taken.

From the preceding chapters the following conclusions can be drawn.

- NONEL sales in Sweden will reduce the sales of electric detonators of Nitro Nobel's own production;
- NONEL will always require higher production costs than electric detonators;
- A number of customers although in minority both in industrialized and developing countries are prepared to pay Kr. 1-1.50 more per pc for the NONEL detonator; and
- Most customers lack interest in a safety detonator the price of which is higher than that of a conventional detonator.

The initial market coverage will be selective and the sales volume small compared with electric detonators.

- Purchasers of qualified electric detonators and detonation fuse are the easiest to canvass;
- Established distributors must be engaged;
- The market for electric detonators being in decrease market shares must be acquired by way of cooperation agreements or joint ventures with established producers;
- It is advisable to maintain continuous contact with high-level authorities concerned with safety matters

Marketing Plan

- The plan follows the idea of concentration on high-price customers.
- It is of importance for the development of the marketing effect that each sale should be seen in a wider context so as to achieve a snow-ball effect.
- It may be advisable to give preference to difficult sales, that lead to publicity and repeat orders, rather than to go for easy sales of a one-time character.
- Licensing should be directed in the first hand to the USA, Canada, Japan and possibly Australia.

Staff planning and location

- A comparatively large number of persons (10) are supposed to be needed for the marketing effort;
- It is of considerable importance that these persons should be located close to the production plant, since documentation, licence negotiations and feed-back are the main tasks during the first five years;
- By having the sales organization placed in close contact with the production plant the risks of collision between sales and production will be reduced.

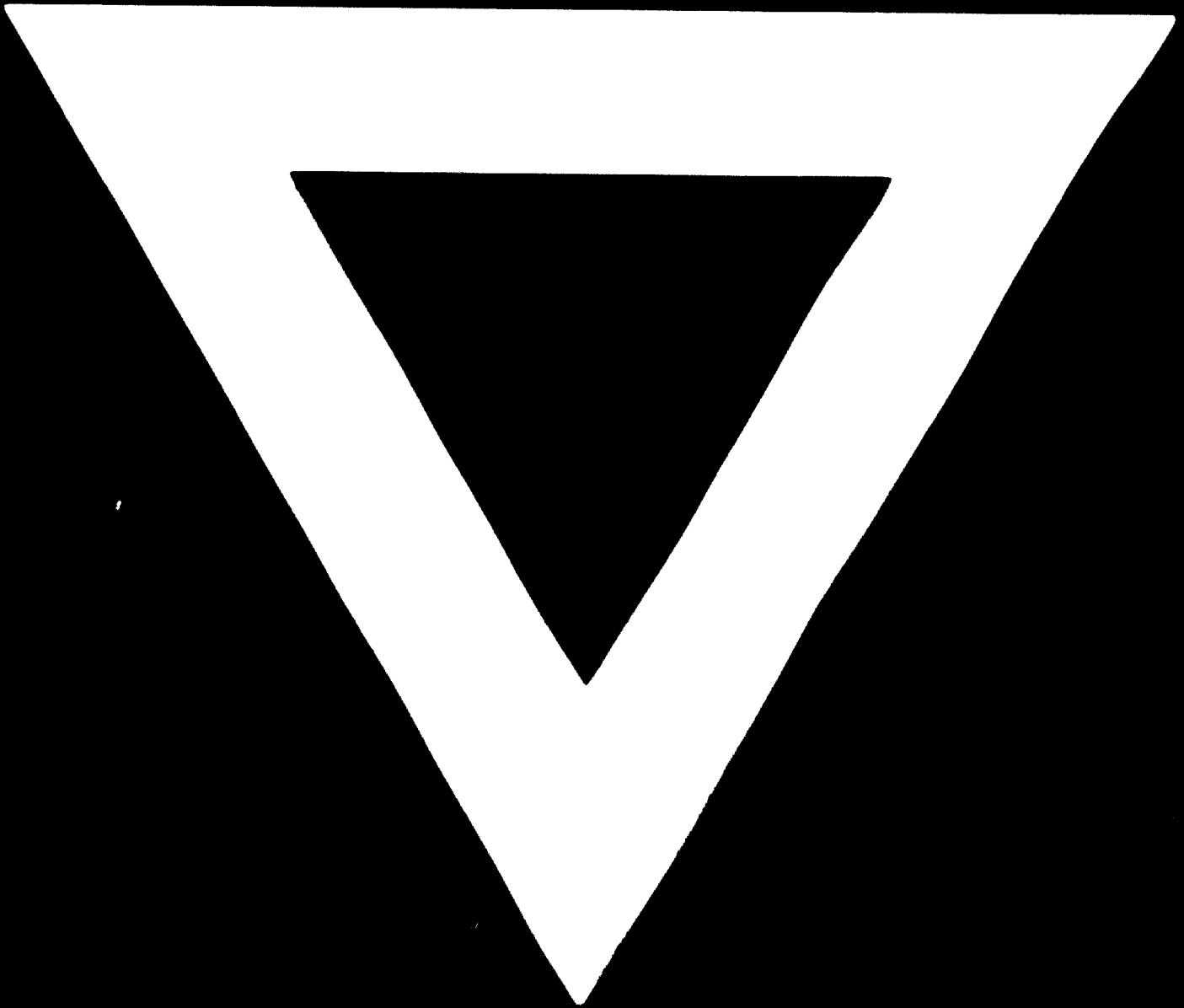
Organization

- Provided that the present organization and sales philosophy remain unchanged a separate unit with a global responsibility for the result should be created for the marketing of NONEL

- Required staff

	1973	1974	1975	1976	1977	1978
Manager	1	1	1	1	1	1
Secretary/offers	1	1	1	1	1	1
Documentation	1	1	2	1	1	1
Salesmen		1	1	2	1	4
Technicians		1	1	2	2	3
Total	3	5	6	7	6	10
=====						

1-103



80.02.18