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***Bulgarian Electronics Industry  
Privatization of Selected Firms***

Delivery Order No. 20  
Bulgaria Electronics Privatization

Project No. 180-0014  
Contract No. EUR-0014-I-00-1056-00  
Eastern European Enterprise Restructuring  
and Privatization Project

U.S. Agency for International Development  
EUR/RME

April 1993

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May 3, 1993

Gary Maher  
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Agency for International Development  
320 21st St., N.W.  
Washington, D.C. 20523

Re: Contract No. EUR-0014-I-00-1056-00, Delivery Order No. 20, Bulgaria  
Electronics Privatization - Phase I Deliverables

Dear Mr. Maher:

In accordance with Article IV of the referenced delivery order, enclosed please find the deliverables for Phase I of this project. They represent deliverables A, B, and C for Phase I as stipulated in Section V of Attachment 1 to the delivery order.

These deliverables were prepared by the Deloitte & Touche team working in Sofia, Bulgaria. If you have any questions concerning these deliverables, please call Anne Nisenson at (202) 879-5661. Thank you.

Sincerely,

Kathleen J. Machen  
Operations Manager

Enclosures

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## 1. INTRODUCTION

This report is one of three deliverables from Phase 1 of the USAID Project on privatisatin in Bulgaria's Electronics Industry. The other two deliverables are:

- (1) An Inventory of the Industry, compiled from visits and/or questionnaires to 90 firms, and
- (2) A description of the Legal and Regulatory Framework governing privatisation.

The report begins by describing the process whereby five firms, comprising three primary and two fall-back choices, were selected as candidates for privatisation from a Ministry list of 110 making up the sector.

It goes on to briefly discuss the privatisation options available under Bulgarian law, refer to Deliverable (2) above for a fuller description.

The Ministry of Industry, the privatisation Agency and the contractors foresee one privatisation method as most appropriate for the short-listed firms - location of potential foreign partners and individual negotiation of full or partial purchase.

The report outlines the actions required by all parties involved in the privatisation process and gives outline timescales. As these depend on identification of potential purchasers, who may or may not exist, they are necessarily tentative.

## 2. SELECTION OF SHORT-LISTED FIRMS

Phase 1 of the current project included a comprehensive survey of the Bulgarian Electronics Industry. Working from a list of firms supplied by the Ministry of Industry, information was gathered by means of visits and/or questionnaires on 90 of the most important. This database provided the primary input to the selection process.

A "scoreboard" was used to initially score and rank the firms in the survey. A series of discussions with the Ministry and Privatisation Agency, based on the output of the scoreboard, and nominations from the Ministry of Industry, resulted in a first selection of ten firms.

At a meeting with the Ministry and with the Privatisation Agency on 12th March, the ten were reduced to six. One of these, Mehatronika in Gabrovo, was subsequently eliminated due to serious restitution problems, leaving a short-list of five firms.

On 16th March, by mutual agreement, the firms were divided into three primary and two fall-back firms.

The primary firms are (name and town):

- Orgtehnika, Silistra, which makes cash registers and desk-top calculators.
- Feromagnit, Pernik, which makes magnets.
- STS, Devin, which makes connectors and microswitches.

The fall-back firms are:

- Magnetic Media (ZIN), Pazardjik, which makes 3.5" diskettes and video and audio tapes.
- Electrostart, Varshetz, which makes ballasts for fluorescent lighting.

In selecting the primary and fall-back firms, several factors were considered in addition to technical/marketing and financial considerations.

- The final selection was influenced by the Ministry perception of which pilot privatisations would have most relevance and benefit for the industry, and this caused Magnetic Media (ZIN) and Electrostart to be moved to fall-back positions although they led on technical and marketing considerations.
- As the legal owner of all firms in the electronics sector, the Ministry is concerned that its staff should be involved in at least one of the pilot privatisations. The current legal situation is that the Privatisation Agency handles privatisation of all firms with a valuation over ten million leva, and the Ministry handles privatisation of firms with a valuation under this figure. Thus, at least one company on the shortlist should have a valuation under ten million leva, and STS Devin and Electrostart Varshetz meet this condition.

A problem common to many firms in Bulgarian industry is high levels of debt. This is presently the concern of a working party established by the Council of Ministers in March 1993, who are charged with devising methods whereby companies may be relieved of this burden. A solution to this problem, eg transfer of company debt to national debt in whole or in part, is a prerequisite to successful privatisation. In particular, this problem affects Orgtechnica, Magnetic Media (ZIN) and Feromagnit.

### 3. SHORT-LISTED FIRMS: APPRAISAL

#### 3.1 TECHNICAL AND MARKETING APPRAISAL

Assessment of the five leading firms is based on the following critical business and technical factors:

- Portfolio Strength. An evaluation of the number and range of products produced by the company.
- Export Performance. Scores were assigned based on the level of exports and, in particular, exports to the West. A high level of exports to the West is a positive attribute.
- Technology Level. An evaluation of the level of technology of the company based on the questionnaire responses, short descriptions arising from visits to the companies, and product literature (where this was provided). The questionnaires and descriptions are contained in the inventory of the Electronics Industry which is available as a separate project deliverable.
- International Standards Compliance.

As shown in the accompanying Matrix, the business and technical factors have been scored on an 0-10 scale and a weighting factor has been applied to each score.

Export Performance (weight 1.5) and Technology Level (weight 1.2) are the two most important factors. Each score is multiplied by its respective weight to produce a rating for each factor. The sum of the ratings yields an overall total for each company. The analysis produces the following "league table".

Financial information obtained on the companies from the questionnaire or from discussions with management was separately reviewed and for that reason not included in the scoring matrix. Our comments arising from Financial Review are included in Section 3.2 below.

## Bulgarian Electronics Industry - Ranking Matrix

Base Information					Assessment				Conclusion	
Company	Market	Employees	Turnover (L '000)	Turnover per employee ('000)	Portfolio Strength	Export Performance	Technology Level	Int standards compliance	Total (Score x wt)	Rank
					Score	Score	Score	Score		
Electrostart	Magnetic ballasts	320	N/A	N/A	2	9	5	9	30.5	2
STS	Switches and connectors	170	5,000	29.4	6	2	3	3	15.6	5
Ferromagnit	Ferrites	485	23,100	47.6	3	7	5	2	21.5	4
Magnetic Media Pazardjik	Magnetic media	1,781	257,008	144.3	4	7	8	8	32.1	1
Orgtechnica	Cash registers	1,150	54,900	47.7	6	4	3	6	21.6	3
					Weight: 1	Weight: 1.5	Weight: 1.2	Weight: 1		



Position	Company	Total
1.	Magnetic Media	32.1
2.	Electrostart	30.5
3.	Orgtehnika	21.6
4.	Feromagnit	21.5
5.	STS	15.6

The validity of the league table depends on the following criteria:

- That information on questionnaires is accurate - note that Electrostart have not returned a questionnaire at time of working.
- That the costing systems of the companies are efficient and reliable.
- Sales to Western countries are positive attributes. In general, the Western markets addressed by the companies are stable and growing whereas the markets in the CMEA are uncertain and volatile.
- It should be noted that the companies are operating in Western markets where competition is consolidating.

The detailed technical appraisals of each firm are shown in the Appendix.

### 3.2 FINANCIAL ANALYSIS

The financial information obtained on the shortlist companies has been primarily based upon responses to questions of a financial nature in the questionnaire, and upon our discussions with management of the companies concerned. None of the financial information presented has been audited or verified by us in any way.

The financial year end adopted by each company is 31st December, a requirement of Bulgarian law. We have requested full financial statements for the three primary candidates on the short-list for the year ended 31st December 1992. We have received such information for Feromagnit for this year, but as at the date of this report, we are awaiting full financials for Orgtehnika and STS, Devin for the year ended 31st December 1992.

We have also obtained selected financial information for earlier years for some of the companies. We have not subjected this information to any degree of detailed evaluation, principally for the following reasons:

- (i) The Accountancy Act of 1991 introduced new legislation on the form and content of financial statements, including prescribing a Bulgarian National Chart of Accounts. This materially changed the manner in which financial statements were prepared, and results in difficulties in carrying out a full comparison of results of prior years.
- (ii) Inflation has been particularly high in Bulgaria over the past three years, and this renders comparison between one year and another difficult.
- (iii) The value of the Leva has decreased significantly over the past three years.

- (iv) Bulgarian law now requires that the financial statements of each company are subject to independent audit every two years.

The financial information on the companies concerned has not been audited in prior years and this also may reduce the reliability of any comparative analysis.

- (v) The companies have experienced significant changes in their markets in recent years. The financial data in the attached table demonstrates the significant fall in Bulgarian and CMEA markets in practically all cases, with some indications, particularly in Feromagnit and Magnetic Media, of developing Western markets. This material change in operating conditions has had a significant effect on the reported results of the companies concerned, and on employment numbers.

We would point out that the audited results of Feromagnit for the year ended 31st December 1992 show a net loss of L 19m. This includes interest incurred of L 12m. This points to the need for the company to develop new business opportunities, restructure its operations and its debt.

Phase II of our work will include a more detailed analysis of financial information (past, and, if available, projected) of the three shortlisted companies. While there are likely to be issues of a financial nature arising from that review, including a debt restructuring requirement in certain cases, our selection of the three shortlisted companies has been based on the assumption that our Phase II financial review will not result in the discovery of material financial issues which may hinder the prospects for privatisation of these companies.

**FINANCIAL DATA RECEIVED FROM SHORTLISTED FIRMS**

D&T Ref. Company Name Town	6 ORGTEHNIKA SILISTRA		15 MAGNETIC MEDIA (ZIN) PAZDARJIK		38 STS DEVIN		51 FEROMAGNIT PERNIK		69 ELECTROSTART VARSHETZ	
	1989	1992	1989	1992	1989	1992	1989	1992	1989	1992
SALES (Leva):										
Bulgaria	81,740,000	33,399,000	90,915,000	67,366,000	16,416,000	4,252,000	23,330,000	6,881,000	2,000,000	18,000,000
CMEA	37,140,000	21,536,000	91,531,000	2,345,000	0	766,000	0	12,052,000	0	0
Western Europe	0	0	6,388,000	187,327,000	0	0	516,000	3,786,000	1,000,000	2,100,000
Other	0	0	0	0	0	0	411,000	465,000	17,000,000	63,900,000
Total	118,880,000	54,935,000	188,834,000	257,088,000	16,416,000	5,018,000	24,257,000	23,184,000	20,000,000	84,000,000
% of Domestic Sales made to State Enterprises	100	24	48	26	100	63	100	23	100	68
% of Export Sales made by an: Affiliate Company	100	73	43	74	0	0	4	3	100	100
Own Company	0	27	9	0	0	15	0	87	0	0
% of Raw Materials Sourced in:										
Bulgaria	46	55	10	11	55	84	30	22	38	37
CMEA	26	12	30	2	10	0	32	77	0	19
Europe	24	28	35	47	35	16	12	1	62	44
America	1	1	25	40	0	0	0	0	0	0
Other	3	4	0	0	0	0	26	0	0	0
Net Book Value of Fixed Assets (Leva) (The 1992 value is after revaluation)	54,128,000	231,609,000	Unanswered	Unanswered	12,832,000	132,009,000	46,596,000	221,784,000	15,917,000	Revaluation of Leva 150 m Expected
Debt	No Data	Leva 100 m	No Data	\$ 20 m	No Data	nil	No Data	Leva 27 m	No Data	DM 820 k
Employee Numbers	2,774	1,235	2,537	1,781	631	205	914	485	340	320

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## Sales

A diversification of the companies away from their traditional markets is apparent from the sales figures in the table although with the exception of Magnetic Media (ZIN) there still appears to be considerable room for improvement in this regard. In all cases, the dependence on State Owned Enterprises as customers within Bulgaria has decreased. In three cases the companies seem to be taking more responsibility for generating export sales themselves.

## Raw Materials

The opening up of international borders has not led to a noticeable trend in the countries from which raw materials are sourced. This may be due in part to the collapse of local markets and lack of demand for such materials and/or difficulties/inability to pay for such materials in foreign currency.

## Net Book Value of Fixed Assets

With the exception of Magnetic Media which did not respond to the relevant question in the questionnaire, all firms revalued their fixed assets at the end of 1992. The need for this arose due to hyper-inflation and a lack of a clear basis for valuing assets previously included in the accounts. We understand that these asset valuations were carried out by independent valuers using bases of valuation permitted under the Accountancy Act of 1991.

## Debt

All of the short-listed firms, with the exception of STS, Devin are burdened with varying levels of debt. This debt is split between "Investment Credits" and "Operating Credits". We understand that the assumption of company debt by the State is being considered by the Government, but no firm decisions have yet been taken on the matter, or in respect of any of the shortlisted companies. The swapping of debt for equity is permitted under Bulgarian law and is also an option for consideration for a number of the shortlisted companies.

It is likely that in order to successfully privatise those shortlisted companies which currently carry significant levels of debt, that some restructuring of that debt will be required. The values of the enterprises will be affected by the levels of debt which the entities will have to bear. It will be particularly important to ensure that the projected performance of the companies can comfortably service the debt obligations.

#### 4. APPROACH TO PRIVATISATION

##### 4.1. Introduction

We consider here the most appropriate approach for privatisation of the three primary shortlisted companies, having regard to the current legal framework. We also review key issues which impact upon their prospects for privatisation.

##### 4.2. Legal Framework

Bulgaria is one of the last of the Eastern European countries to embark on a programme of privatisation. The legal framework to support this programme is still relatively new and has been set out in detail in Deliverable (2). Two important pieces of legislation have been put in place to facilitate the transition to a market economy, namely:

- (i) The Law on the Transformation and Privatisation of State and Municipal Enterprises, which came into force in April 1992.
- (ii) The Law on the Economic Activity of Foreign Persons and on the Protection of Foreign Investments, which became effective in February 1992.

From a legal perspective, the following points are relevant to privatisation of the short listed companies.

## Law on Privatisation

- (i) Article 3 of the Law on Privatisation prescribes that a decision on privatisation shall be taken by the Privatisation Agency in respect of State-owned Enterprises whose Balance Sheet values exceed BL 10m and by the Council of Ministers for those State Owned Enterprises which have Balance Sheet values below this level. On this basis, the privatisation of STS appears to fall under the responsibility of the Ministry, and Feromagnit and Orgtehnika under the Privatisation Agency.
- (ii) Article 5 provides for preferential participation by workers and employees in the privatisation of State companies. Workers and employees include:
- Current workers and employees.
  - Persons whose employment with the companies have been terminated under the Bulgarian labour code in the 5 years prior to date of privatisation.
  - Persons who have retired on a pension at any time in the 10 years preceding privatisation.

Article 22 provides that workers and employees are entitled to acquire up to 20% of the shares of the company at a discounted price.



The right to preferential buying of shares is exercisable within a period of 3 months from the date on which the sale of the company has started. All shares sold under the discount procedure to employees are non voting for a period of 3 years from the date of their issue.

It will be important to determine at an early stage whether the employees of the three short listed companies intend to exercise these preferential rights.

- (iii) Article 27 provides that the price at which shares shall be offered will be based upon an appraisal of the enterprise. Article 16 states that such a valuation shall be carried out by foreign or local expert firms which are licensed by the Privatisation Agency.

Detailed regulations on the nature of appraisals have been drawn up. The key requirements of these regulations, which must be adhered to as part of the privatisation of any State entity, are:

1. A legal analysis must be carried out covering the company's property and non property assets and rights (including intellectual property).

2. An appraisal of the value of the entity being privatised is required. The following methods may be used:

- Net value of assets
- Liquidation value
- Capitalization of future earnings
- Market multipliers or appraisal by analogue
- By other methods applied in world practice
- By a combination of the aforesaid methods.

The appraisal should be made under at least two methods unless the Ministry or Privatisation Agency otherwise allow.

(iv) Article 25 states that privatisation may take place in any of the following ways:

1. By public offering
2. By public auctioning of blocks of shares
3. By public invited tender
4. Through negotiations with potential buyers.

We return below to the approaches relevant to the three shortlisted companies.

The legislation establishes a clear framework for the privatisation of State entities. A formal approval for the privatisation of each State entity is required. Once obtained, the Ministry/Privatisation Agency commission the necessary legal analysis and valuation referred to above.

### Foreign Investment Law (FIL)

Any investment in which the level of foreign participation exceeds 50% is considered to be a foreign investment. Following the changes in the foreign investment legislation in early 1992, Bulgarian legislation is now quite liberal, although the law does contain a number of protections and incentives similar to those in operation in other former COMECON countries. In particular, Bulgarian law clearly distinguishes between title to and rights to use land on the one hand, and buildings erected on the land on the other. Foreign persons may acquire rights of ownership in buildings and limited rights in immovable property, but no foreign person or company may acquire ownership of land.

#### 4.3. Bulgarian Privatisation - Issues Facing a Foreign Investor

Bulgaria is in its infancy as far as its transition to a market economy is concerned. Radical changes have occurred in the past three years and the process of economic and social change is ongoing. The legal and regulatory framework is relatively new and there remains a body of legislation which is still to be formalised. Despite this evolving environment, there are attractions to investment in Bulgaria and particularly in the three shortlisted companies, the principal of which are:

- (i) Each of the companies is currently trading and has a reasonable business base. Feromagnit and Orgtehnika in particular offer good export potential into significant European and World markets in their sectors. All three companies appear to have potential market opportunities in the CMEA.

STS and Feromagnit operate in traditional markets which are growing, Orgtehnika may experience short term decline due to the political and payment problems in the CMEA. Each company offers potential foreign investors a low cost skilled workforce.

Investment in the companies therefore offers potential access to new markets for foreign investors, allied with low cost skilled production.

- (ii) The liberal nature of Bulgaria's Foreign Investment Law means that foreign investors can potentially own up to 100% of a company without restriction. Full repatriation of profits in convertible currency is also permissible.
  
- (iii) There are a range of tax incentives for foreign investment, the principal of which involve preferential profits tax rates and in some cases, profits tax holidays. Bulgarian incorporated companies with foreign participation in excess of 49% and having a minimum share capital of US \$100,000 receive preferential tax treatment. Such companies are taxed at the rate of 30% while until recently the profits of companies with lower foreign participation were taxed at the higher rate of 40%. Amending legislation in July 1992 extended this preferential 30% tax rate to all private companies with annual taxable profits not in excess of BL 1m regardless of ownership. A 5 year profits tax holiday is available to companies with foreign participation which are involved in high technology, agriculture or the food industry. A three year tax holiday applies to companies engaged in manufacturing where such companies have no State participation.

- (iv) There has been some improvement in the Bulgarian economy during 1992 with reductions in inflation and interest rates. The economic programme was boosted by the granting of IMF approval in April 1992 for a 12 months stand-by credit facility of US\$212m.

Despite these attractions, there are nevertheless a number of key issues facing a potential investor. These include:

- (i) The recent history of political difficulties in Bulgaria, some of which have created an impression that the country is a reluctant reformer to a market economy. The legislative framework and the formation of a government in January 1993 committed to privatisation has helped to reverse this perception. A stable political environment is important to the attraction of foreign investment.
- (ii) Not unlike other Eastern European countries, economic circumstances in Bulgaria remain difficult despite recent improvement. A fall in gross domestic product, high inflation, increasing unemployment and high interest rates remain features of the Bulgarian economy. Further support may be required from the West to enable Bulgaria to meet its budgetary targets. Its most serious problem for some years will be the high level of foreign debt. and for this reason, agreement with the international community and particularly the IMF on longer term debt stability will be vital.
- (iii) Technology in Bulgarian companies tends to be out of date and many operate to different standards than Western companies. In the case of the three shortlisted companies, initial appraisals indicate a modest technology gap relative to competitors in Western economies. Quality standards in all cases do not match those in operation in the West.

- (iv) The level of indemnity a foreign investor can be given on pre privatisation liabilities not disclosed at the time of sale will also be an important issue. We are currently awaiting a response from the Ministry on this important matter. It will clearly be important to potential foreign investors that they are not exposed to undisclosed past liabilities, whether arising from trading or environment matters.
- (v) Employment levels in the shortlisted companies will be a matter for close investigation by any prospective foreign investor. Productivity levels per employee are likely to be below those in comparable Western facilities. This reflects both the technology gap and potential overmanning in the companies concerned. In all three cases, employment numbers have fallen significantly in recent years, a reflection of the decline in the CMEA market. Foreign investors may require flexibility to further reduce employment levels, and this may become important in negotiation with the Ministry, who will obviously wish to maintain employment levels at the highest level possible. The question of employment guarantees which the Ministry may seek from foreign investors will be important.
- (vi) The level of pre-privatisation bank debt will also be an important issue. Feromagnit is currently burdened by high levels of bank debt and has experienced problems in financing working capital because of the reluctance of banks to provide increased facilities. Orgtehnika also has debt although it has not experienced restrictions on its credit facilities to the same extent. STS does not currently have any bank debt.

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It is important in the cases of Orgtehnika and Feromagnit, that bank debt is restructured in a way which stabilises their financial position and increases their attractiveness to foreign investors. Banks are permitted to convert outstanding debt into equity in the entities being privatised. Again, such participation needs to be weighed in the context of the possible requirement of a foreign investor to obtain 100% /majority control of the enterprise.

- (vii) Although our preliminary investigations indicated that there are no major restitution problems for the three short listed companies, it is important that this position is absolutely determined at the time of any potential privatisation.

Restitution claims from the owners of real property who have not already been compensated must be lodged within two months of the publication of the privatisation decision or by June 1993, at the latest. Claims submitted within the relevant time limit entitle the claimant if successful to receive a proportion of the shares or stocks of the company being privatised. The position of a potential foreign investor would be affected were claims to arise which would result in the taking of a shareholding in any of the companies.

- (viii) The banking system is still undergoing reform and full banking liberalisation in Bulgaria is some way off. Demand for credit is far higher than the system can service and there is a need for an expanded and more efficient payments system.

- (ix) While a defined framework for financial information is set down in the Accountancy Act of 1991, subjecting all companies to an annual audit, foreign investors are likely to be concerned as to the reliability of past financial information. This is a matter which we will be considering in further detail in Phase II of this project.

The issues illustrate that foreign investment in Bulgaria involves a relatively high degree of risk at the present time, irrespective of the attractiveness of any one individual company. The economic environment is still in a state of flux and the legislative, taxation and regulatory framework is not yet fully developed. Foreign investment in Bulgaria to date has been extremely low and the incentives offered are modest, being largely taxation based.

Many of the risks associated with Bulgaria apply equally to investments in other Eastern European countries. Bulgaria does have attractions to foreign investors. The business environment in Bulgaria has been improving progressively over the past year. There is an openness to deal with foreign partners. The shortlisted companies have marketable products which may attract foreign investors, and with the right partner, have the potential to advance in technology to produce output to Western standards at low cost.



#### 4.4. Privatisation Approach

The privatisation approach which we consider to be most appropriate for the three shortlisted companies falls under the heading "Negotiated Sale" of Article 25.1 of the Law on Privatisation. This involves the identification of foreign partners who can meet their specific needs, the principal of which are:

- (i) The development of a marketing competence in Western markets.
- (ii) Modernisation of production facilities and technologies
- (iii) Access to research and development capabilities
- (iv) Development of modern management methods and training
- (v) Access to finance
- (vi) The development of modern management information systems.

In order for these companies to operate as viable business units in the future, it is certain that some degree of restructuring will be required. Such restructuring in our view is best assessed and conducted in the context of a "negotiated sale", where the specific requirements can be matched with the competencies and requirements of a foreign investor.

It should be noted that a public offering of shares is not currently possible in Bulgaria because the necessary Stock Exchange system is not in place, although there are plans to establish a stock market in the short term. Even if this option were available, it would not be appropriate to the companies concerned as access to funding alone is insufficient to meet their needs.

As part of the process of privatisation, it is important that any potential foreign investor provides by way of a strategy document its plans for the future development of the relevant company covering a range of quantitative matters including:

- Price to be paid
- Future investment plans
- Access to development of new markets
- Technology improvements proposed
- Employment levels proposed
- Treatment of any environmental issues
- Management and employee training and development

It will be important that privatisation of the companies concerned is approached in a flexible manner, particularly as regards the structure in which any foreign investor may be willing to become involved.

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There are a number of potential options, including:

- (i) The acquisition of a stake in the company through purchase of shares from the Ministry. In this case, the proceeds of any foreign investment is received by the Ministry.
- (ii) The acquisition of a stake in the company through an investment in new shares in the company. In this case, the funds committed are received by the company concerned.
- (iii) The acquisition of certain of the business activities of any of the companies. This may arise where part but not all of the entity being privatised is of interest to a foreign investor. In such circumstances, it would be normal to transfer the assets of the business element being acquired from the existing company to a new legal entity in which the foreign investor will hold shares.
- (iv) The creation of a new joint venture vehicle. This typically would involve the transfer of the assets of the enterprise into a new legal entity in exchange for shares, such shares, initially at any rate, to be held by the Ministry. A foreign investor would acquire shares in the joint venture via investment in cash and contribution of know-how (technology transfer, access to markets etc).

All the above methods result in a transfer of ownership of the entities from the State, either partially or in whole, to a foreign investor. There are, however, a number of important differences between the approaches outlined above. These relate to:

1. The extent to which a foreign investor is willing to invest cash in the Bulgarian economy and the amount that will be made in the companies concerned and that received by the Ministry for the sale of its shares. Experience in Eastern Europe generally indicates that where investors are willing to invest funds, they have a strong preference for a structure which results in an injection of equity into the companies concerned rather than as payment for shares to the Ministry.
2. The extent to which foreign investors are protected from past liabilities of the entities concerned. The transfer of assets to a newly incorporated company may be an investor requirement especially where the investor wishes to acquire part but not all of the existing company. Following the transfer of the relevant assets to the new entity, liquidation of the former company may be required.
3. The extent to which a foreign investor would seek shares in return for an in-kind contribution to the companies concerned. Such an in-kind contribution would typically relate to know-how, technology transfer, access to markets etc.

It is likely that the transaction timetable to privatise any of the companies concerned will be relatively long, perhaps taking 9 to 12 months. Even within this time-frame, there can be no certainty that foreign investment would be attracted into the companies concerned, principally because of the perceived risks of investment in Bulgaria and because many of the potential foreign investors are themselves operating in depressed Western markets and may have depleted resources.

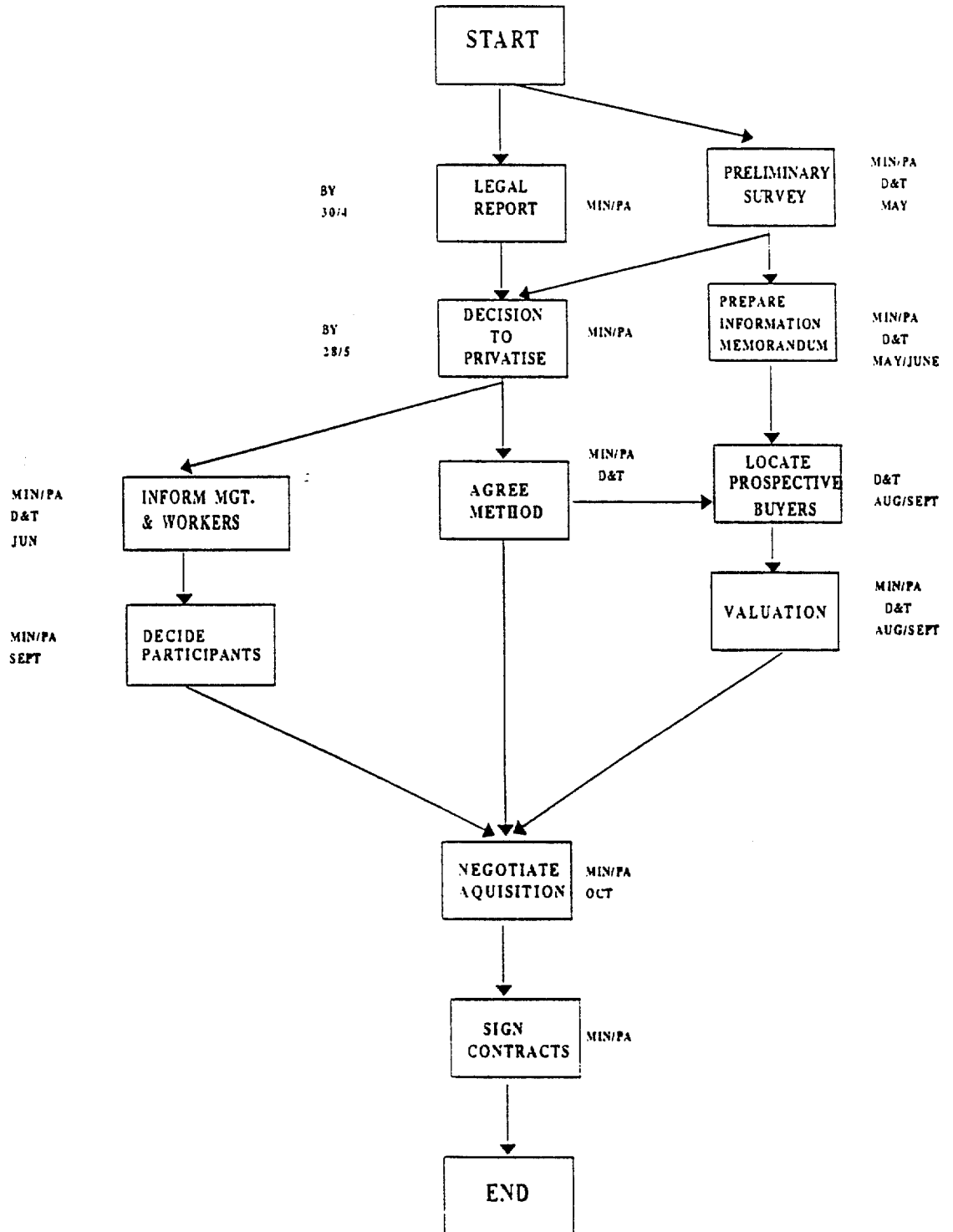
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Even if foreign investment cannot initially be attracted to the shortlisted companies, the process of marketing the companies may facilitate the development of strategic alliances with Western companies such as contracts for cooperation, license agreements, long term supply arrangements or other forms of economic relationships which do not initially involve investment by a foreign partner. While this in itself does not represent privatisation, these forms of alliances may in time provide a basis for closer economic involvement offering the possibility of privatisation at a later stage when foreign partners have become more comfortable with doing business in Bulgaria and with the companies concerned.

The objective of Phase II of our study will be to privatise the shortlisted companies. In this context, the key steps will involve:

- (i) Review more closely the operations and facilities of companies and commence identification of potential target investors.
- (ii) Establish preliminary contact with potential investors.
- (iii) Distribute Information Memoranda to potential targets.
- (iv) Allow preliminary due diligence period for potential investors.
- (v) Determine a deadline for the submission of business plans by foreign investors outlining the basis on which they propose to be involved in the companies.
- (vi) Select final bidders.
- (vii) Allow more detailed due diligence for selected final bidders, if required.
- (viii) Distribute standard contracts in draft form to shortlist potential bidders.

# USAID ELECTRONICS PRIVATISATION WORKPLAN FOR PHASE II



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- (ix) When investor interest is firmly established, arrange valuations as specified by privatisation legislation.
- (x) Establish deadline for final bids with final business plans and contracts.
- (xi) Discuss business plans with management of the relevant enterprises.
- (xii) Final negotiation phase and selection. Matters such as commitment to investment, employment, environmental issues etc. are relevant here.
- (xiv) Selection of investor and completion of registered sale.

It is important that the privatisation approvals required of the Ministry/Privatisation Agency are obtained promptly and that the appraisals on legal and valuation issues required by law are carried out by these government bodies in parallel with the above transaction schedule.

In this respect we are pleased to report the agreement of all parties to the process shown in the workplan diagram. The term MIN refers to the Ministry of Industry, PA is Privatisation Agency and D & T refers to the contractor. The date for location of prospective buyers and negotiation of the acquisition are necessarily speculative at this stage.

The process of privatisation of the three primary companies is about to commence. Two other companies, Magnetic Media Pazardjik and Electrostart Varshetz, were identified in our survey as having privatisation potential. In the event that any as yet unforeseen problems arise with privatisation of the three primary candidates, ready replacements exist in these two companies. In any event, consideration will be given in Phase II of the project to appropriate methods of advertising these companies to potential foreign investors, although they will not be subject to the same intense programme as the primary list.

It will be important that a flexible approach is adopted to the privatisation of the companies concerned. While price is always an important consideration, and there may well be material differences of the valuation of the companies as between the Ministry and foreign investors, such price considerations will need to be judged in the context of the commitments of an investor to the future development of the companies, in terms of markets, technology, skills and capital.



## APPENDIX

## DETAILED TECHNICAL APPRAISALS OF SHORT-LISTED FIRMS

Electrostart, Varshetz	A.2
STS, Devin	A.10
Feromagnit, Pernik	A.18
Magnetic media (ZIN), Pazardjik	A.26
Orgtehnika, Silistra	A.34

## BULGARIAN ELECTRONICS INDUSTRY

## ELECTROSTART - VIRSHETZ

## 1. RESPONSE TO QUESTIONNAIRE

SUB-SECTOR (1.9)	Active and passive components
------------------	-------------------------------

MAIN BUSINESSES (2.3)	%
1. Ballasts for fluorescent lights	N/A
2. Ballasts for high pressure discharge lamps	N/A
3. High frequency chokes	N/A
OTHER	
	100.0

SALES 1992 (5.4)	L 000's
Local	
CMEA	
West Europe	
Other	
TOTAL	N/A

EMPLOYEES (4.1)	320
Of which R&D (3.2)	

MAJOR MANUFACTURING UNITS (2.1)	
1. }	
2. }	N/A
3. }	
4. }	

TECHNOLOGY GAP (2.5)	
Up to date	√
1-3 years	
>3 years	

CRITICAL FACTORS (6.3)	
New equipment	
Existing competition	
Substitute products	
Technological change	
New competitors	
New products	

	COMPETTIVENESS (2.3)			
Main Businesses	1	2	3	4
Product:				
Performance				
Quality				
Specification				
Cost				
Competitiveness:				
Local				
CMEA				
Global				
Competitors:				
Local				
CMEA				
Global				

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## 2. COMMENTS ON QUESTIONNAIRE RESPONSES

No questionnaire was supplied, but, based on the visit report, we note that 95% of the products are exported through the Bulgarian Foreign Trade Agency to Western Europe. Near and Far East. In many countries of the region, the old centralised state trade organisations have been disbanded or have lost their hold on business as local plants take control of their own export efforts. Electrostart's export channels must be further examined.

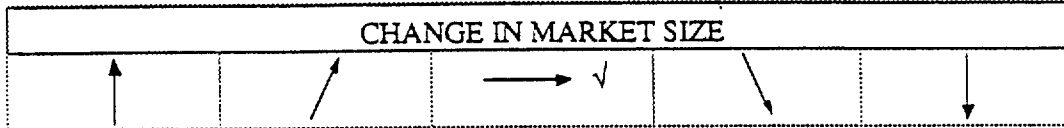
### 3. INTERNATIONAL MARKETS

#### ESTIMATED MARKET SIZE

European market approximately US\$ 350m.

We shall focus on the European market as it is of direct relevance to Electrostart.

#### CHANGE IN MARKET SIZE



	BUYING CRITERIA	
	Critical	Enabling
Functionality	3	
Design		4
Quality	2	
Branding		5
Distribution		
Price	1	

1 = Most important; 6 = Lowest

#### BASIS OF MARKET SEGMENTATION

Six ballast manufacturers dominate the international market; three as integrated players, three as control gear manufacturers. Eleven other manufacturers serve national markets, with a smaller number of less significant Far Eastern and Eastern European manufacturers. Apart from the three integrated players, manufacturers and distributors are extremely fragmented (nationally and internationally).

## 4. COMPETITION

INDUSTRY STRUCTURE	Concentrated	Fragmented
Local		√
Regional		√
Global		√

MARKET LEADERS			
Name	Location	Focus	Share
Philips	Netherlands	Integrated lighting	11%
Schwabe	Germany	Ballast supplier	17%
Helver	Finland	Ballast supplier	16%
May & Christie	Germany	Ballast supplier	15%
Zumtobel	Austria	Integrated lighting	15%
Thorn	UK		4%

IMPORTANCE OF ECONOMIES OF SCALE		
High	Medium	Low

## 5. CRITICAL SUCCESS FACTORS

### KEY TECHNOLOGIES/PROCESSES

- Production of wirewound inductor cores
- Production of metalised film capacitors
- Plastic moulding and low pressure gas handling (if producing "glow-start" type)

### CORE COMPETENCIES

- Automated manufacture
- Assembly line integration of electrical and electronic components

### MAJOR PROSPECTIVE DEVELOPMENTS

The replacement of conventional ballasts with electronic ballasts is on the horizon. There is little agreement on standards and electronic ballasts are some five times more expensive than conventional types.

## 6. BUSINESS PROSPECTS

FORECAST CHANGE IN TRADITIONAL MARKET		
Growing	Stable ✓	Decline
<p>Comment: The market will remain stable until cheap electronic ballasts become available.</p>		

PROSPECTIVE COMPETITIVE ENVIRONMENT	
Growing	Stable ✓
<p>Comment: The market is largely fragmented and cost-driven. Electronic ballasts are a potential destabilising factor</p>	

PROSPECTS FOR EXPORT	
Good ✓	Poor
<p>Comment: Electrostart produces to IEC82 (European) and VDE 0712 (a tougher German standard). Knowledge of Schwabe an advantage.</p>	

PRESSURE ON COST STRUCTURE	
Materials	N/A
Labour	
Capital	



## 7. PROSPECTIVE EQUITY HOLDER

	GOOD	POOR
Foreign commercial	√	
Foreign financial		
Local		

## 8. CONCLUSIONS

From the limited information available to us, we conclude that Electrostart offers good prospects for privatisation.

## BULGARIAN ELECTRONICS INDUSTRY

## STS, DEVIN

## 1. RESPONSE TO QUESTIONNAIRE

SUB-SECTOR (1.9)	Active and Passive components
------------------	-------------------------------

MAIN BUSINESSES (2.3)	%
1. Switches, lamp holders, terminals	70
2. Direct and indirect connectors	15
3. Crimp connectors	7
4. Connectors (other)	8
OTHER	
	100.0

SALES 1992 (5.4)	L 000's
Local	4,252
CMEA	766
West Europe	0
Other	0
TOTAL	5,018

EMPLOYEES (4.1)	205
Of which R&D (3.2)	14

MAJOR MANUFACTURING UNITS (2.1)
1. Tool making shop
2. Bakelite moulding shop
3.
4.

TECHNOLOGY GAP (2.5)	
Up to date	
1-3 years	√
>3 years	

CRITICAL FACTORS (6.3)	
New equipment	Neutral positive (3)
Existing competition	Important (2)
Substitute products	Important (2)
Technological change	V important (1)
New competitors	V important (1)
New products	V important (1)

Main Businesses	COMPETITIVENESS (2.3)			
	1	2	3	4
Product:	Switches	Dir/Indir Com	Crimp com	Other connectors
Performance	Not as good	As good	As good	As good
Quality	Not as good	As good	As good	As good
Specification	Not as good	As good	As good	As good
Cost	Not as good	Better	Better	Better
Competitiveness:				
Local	Highly comp	Highly comp	Highly comp	Highly comp
CMEA	Highly comp	Highly comp	Highly comp	Highly comp
Global	Very Uncomp	Highly comp	Highly comp	Highly comp
Competitors:				
Local	PAS-OOD Cheptive	None	None	None
CMEA	ERV; RFT	None	RFT, Kontakta	None
Global	Philips; SAIA	AMP	SOURIAV, SADA	AMP, MOLEX, ASMAN

**2. COMMENTS ON QUESTIONNAIRE RESPONSES**

- 1) World leading producers (such as AMP) are focussing on increased automation to improve process times and product quality and this company seems to be aware of this in its answers to Questions 3.3 and 3.4
- 2) In general, the answers given display a clear grasp of the products and markets available in the world. However, the copy brochures provided indicate a technological lag >3 years (not 1-3), particularly in the area of edge connectors.
- 3) The balance sheets show that stocks of raw materials and finished goods are both very high. Further investigation will be required.

3. INTERNATIONAL MARKETS

ESTIMATED MARKET SIZE	
World market (92)	US\$ 13bn (connectors) US\$ 1.7bn (switches)
Europe	US\$ 4.6bn (connectors) US\$ 900m (switches)



8% 92-93 connectors

5% 92-93 switches

	BUYING CRITERIA	
	Critical	Enabling
Functionality		
Design	3	
Quality	2	
Branding		5
Distribution		4
Price	1	

1 = Most important; 6 = Lowest

**BASIS OF MARKET SEGMENTATION**

Connectors market dominated by large concerns (AMP, Molex). Sales through distributors (rather than to customers direct) becoming increasingly important especially in the US.

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#### 4. COMPETITION

INDUSTRY STRUCTURE	Concentrated	Fragmented
Local	√	
Regional	√	
Global	√	

MARKET LEADERS			
Name	Location	Focus	Share
AMP	USA	Connectors	
Molex	Germany	Connectors	
Philips	Netherlands	Switches	

IMPORTANCE OF ECONOMIES OF SCALE		
High √	Medium	Low

## 5. CRITICAL SUCCESS FACTORS

## KEY TECHNOLOGIES/PROCESSES

- Tool and mould making
- Metal pressing and plastics moulding
- Galvanising/plating

## CORE COMPETENCIES

- Alignment and assembly of small parts
- Quality control of metal - and plastics - forming lines
- Automated assembly

## MAJOR PROSPECTIVE DEVELOPMENTS

- Increased importance of optical fibre connectors and optical back planes in computer applications and telecomms
- Increased use of surface mounted components is eliminating classes of connectors and mounts

## 6. BUSINESS PROSPECTS

FORECAST CHANGE IN TRADITIONAL MARKET		
Growing ✓	Stable	Decline
Comment: Connectors market growing worldwide. Switches market also growing but at a slower rate.		

PROSPECTIVE COMPETITIVE ENVIRONMENT	
Growing ✓	Stable
Comment: Increased automation and innovative design is leading to increased capacity and reduced cost.	

PROSPECTS FOR EXPORT	
1) Good	2) Poor
Comment: 1) Good to CMEA 2) Poor to West without significant product modernisation	

PRESSURE ON COST STRUCTURE	
Materials	23%
Labour	34%
Capital	



## 7. PROSPECTIVE EQUITY HOLDER

	GOOD	POOR
Foreign commercial	√	
Foreign financial		
Local		

## 8. CONCLUSIONS

The switches market provides 52% of the company's sales but the best prospects appear to be in connectors - particularly to the CMEA countries (especially as Russia and Ukraine restructure and commercialise their defence-related electronics industries).

## BULGARIAN ELECTRONICS INDUSTRY

## FEROMAGNIT - PERNIK

## 1. RESPONSE TO QUESTIONNAIRE

SUB-SECTOR (1.9)	Active and Passive components
------------------	-------------------------------

MAIN BUSINESSES (2.3)	%
1. Oxide magnets (Ba,Sr)	75
2. Metal magnets (ALNICO)	16
3. Soft ferrites (NiZn, NmZn)	9
4.	
OTHER	
	100.0

SALES 1992 (5.4)	L 000's
Local	6,881
CMEA	12,052
West Europe	3,786
Other	465
TOTAL	23,184

EMPLOYEES (4.1)	485
Of which R&D (3.2)	8

MAJOR MANUFACTURING UNITS (2.1)
1. Ferrite shop for oxide ferrites
2. Ferrite shop for soft ferrites
3. Metal magnets shop
4. RECO shop (Nil employees)

TECHNOLOGY GAP (2.5)	
Up to date	√
1-3 years	
>3 years	

## CRITICAL FACTORS (6.3)

New equipment	Very important (0!)
Existing competition	Neutral/positive (3)
Substitute products	V important (1)
Technological change	Important (2)
New competitors	Important (2)
New products	Neutral/positive (3)

## COMPETITIVENESS (2.3)

Main Businesses	1	2	3	4
Product:	Oxide magnet	Metal magnet	Soft ferrites	RECO
Performance	As good	As good	As good	As good
Quality	As good	Not as good	Not as good	As good
Specification	As good	Better	Better	Better
Cost	As good	Better	Better	Not as good
Competitiveness:				
Local	-	-	-	-
CMEA	Highly comp	Not comp	Highly comp	Highly comp
Global	V comp	Not comp	V comp	(Not given)
Competitors:				
Local	None	None	None	None
CMEA	HAGY/Polfer/Feph	None	HAGY/NPOFeit	Hungary;Russia
Global	TDK, Philips, Siemens, Hitachi	Hitachi	TDK, Philips, Siemens, Cophelec	(None specified)

## 2. COMMENTS ON QUESTIONNAIRE RESPONSES

- 1) The manufacture of ferrite materials is regarded as a "black art", with many proprietary recipes and methods. Batch-to-batch consistency is important as are accuracy and control of critical parameters (for example, firing times and atmospheres and magnetic field strengths).

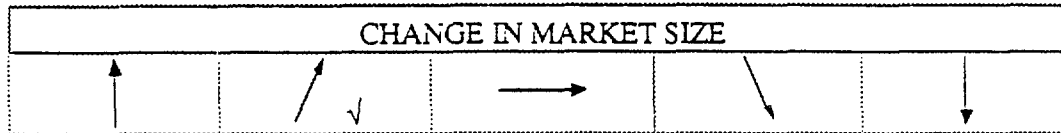
It is encouraging to note that this company claims compliance with ISO 2859 and MILSTD 105D, presumably for areas covering sampling procedures and inspection. Further information should be sought on the level of ISO 9000 preparations.

Consistent performance (in line with manufacturer published data sheets) is very important in developing credible products and customer loyalty. Test and measurement facilities are therefore vital to the successful marketing of ferrite materials.

- 2) Mention is made of the use of Japanese technology based on a license. This requires further investigation.
- 3) Close to 80% of raw materials are sourced abroad - stability of supply must be checked out.

3. INTERNATIONAL MARKETS

ESTIMATED MARKET SIZE	
Worldwide	US\$ 1.2bn
Europe	US\$ 150m



	BUYING CRITERIA	
	Critical	Enabling
Functionality	3	
Design		
Quality	1	
Branding		4
Distribution		5
Price	2	

1 = Most important; 6 = Lowest

**BASIS OF MARKET SEGMENTATION**

Most magnetic components delivered on OEM basis - little scope for a differentiation but proprietary recipes and the importance of consistency lead to supply by subsidiaries (large groups) and single-sourcing from smaller companies.

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## 4. COMPETITION

INDUSTRY STRUCTURE	Concentrated	Fragmented
Local	√	
Regional	√	
Global		√

MARKET LEADERS			
Name	Location	Focus	Share
TDK	Japan	computers	
Siemens	Germany	telecomms	
Toshiba	Japan	computer read/write heads	
Philips	Netherlands		

IMPORTANCE OF ECONOMIES OF SCALE		
High	Medium √	Low

## 5. CRITICAL SUCCESS FACTORS

## KEY TECHNOLOGIES/PROCESSES

- Processing/milling of material
- Accurate mixing and batch control
- Moulding and pressing
- Sintering, thermal processing

## CORE COMPETENCIES

- Accurate process control
- Classification and testing of magnetic materials
- Precision manufacture of miniature components and actuators

## MAJOR PROSPECTIVE DEVELOPMENTS

- Medium term decrease in magnetic read/write heads as computer technology switches to optical and optoelectronic storage and retrieval
- Long term increase in brush-less electric motors as electric vehicle production increases
- Increasing importance of Rare Earth magnets
- Increasing miniaturisation in motors, actuators and robotics.

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**6. BUSINESS PROSPECTS**

FORECAST CHANGE IN TRADITIONAL MARKET		
Growing √	Stable	Decline
Comment: Growth of 3.5% pa expected over near to medium term		

PROSPECTIVE COMPETITIVE ENVIRONMENT	
Growing	Stable √
Comment:	

PROSPECTS FOR EXPORT	
Good √	Poor
Comment:	

PRESSURE ON COST STRUCTURE	
Materials	32% (of which energy 30%)
Labour	35%
Capital	

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## 7. PROSPECTIVE EQUITY HOLDER

	GOOD	POOR
Foreign commercial	√	
Foreign financial		
Local		

## 8. CONCLUSIONS

The company's desire to expand into the sub-assembly manufacture of loudspeaker cones should be viewed warily - markets both in the West and CMEA regions have over capacity.

The control of energy costs is a critical factor in the production of ferrite materials so efficient kilns and furnaces are essential. A view must be taken by any potential investor as to the likely increases in energy prices in Bulgaria as these have a direct impact on this company's bottom line.

## BULGARIAN ELECTRONICS INDUSTRY

MAGNETIC MEDIA PAZARDJIK  
INFORMACIONNI NOSITELI AD

## 1. RESPONSE TO QUESTIONNAIRE

SUB-SECTOR (1.9)	Magnetic Tapes
------------------	----------------

MAIN BUSINESSES (2.3)		%
1.	3½" diskettes	55
2.	Audio and video cassettes	8
3.	5¼" floppy disks	34
4.	Parts and components	3
OTHER		
		100.0

SALES 1992 (5.4)	L 000's
Local	67,336
CMEA	2,345
West Europe	187,327
Other	
TOTAL	257,008

EMPLOYEES (4.1)	1,781
Of which R&D (3.2)	70

MAJOR MANUFACTURING UNITS (2.1)	
1.	3.5" floppy disks
2.	Audio and Video cassettes
3.	5¼" floppy disks (to cease)

TECHNOLOGY GAP (2.5)	
Up to date	√
1-3 years	
>3 years	

## CRITICAL FACTORS (6.3)

New equipment	Very important (1)
Existing competition	Very important (1)
Substitute products	Important (2)
Technological change	Important (2)
New competitors	Important (2)
New products	Very important (1)

	COMPETITIVENESS (2.3)			
Main Businesses	1	2	3	4
Product:				
Performance	As good	As good	As good	
Quality	As good	As good	As good	
Specification	As good	As good	As good	
Cost	As good	As good	As good	
Competitiveness:				
Local	Highly comp	Very comp	Highly comp	
CMEA	Very comp	Very comp	Very comp	
Global	Very comp	Very comp	Very comp	
Competitors:				
Local	None			
CMEA	Sony/BASF/KAO	BASF/TDK	Sony/BASF	
Global	Sony/BASF/KAO	BASF/TDK	Sony/BASF	

## 2. COMMENTS ON QUESTIONNAIRE RESPONSES

The company states that its products are competitive in terms of quality, and given that they export a large quantity this is probably so. However they are active in the 'white box', rather than branded, segment where price is the main buying factor.

The main players invest enormous sums to optimise the production process, automate assembly, maximise yields and minimise production costs. This does not always result in acceptable financial performance. Several players have exited the industry in the recent past (eg Philips). It seems unlikely that their production process is completely up to date. It is more likely to be 1-3 years behind.

### 3. INTERNATIONAL MARKETS

#### ESTIMATED MARKET SIZE

The total world market for magnetic media is approximately \$12bn. The European market is approximately \$4bn.

#### CHANGE IN MARKET SIZE



	BUYING CRITERIA	
	Critical	Enabling
Functionality		3
Design		
Quality	1	
Branding	4	
Distribution		5
Price	2	

1 = Most important; 6 = Lowest

#### BASIS OF MARKET SEGMENTATION

Floppy disks must conform to clearly defined technical specifications so there is little scope for differentiation. Quality is an important buying factor. The disks are sold to users in blank form for data storage or via software houses.

Video tape must also conform to clearly defined specifications, but there is some scope for enhanced quality, better quality, more record/erase cycles etc. Video tapes are sold through a wide range of retailers in blank form for home recording, and pre-recorded for the rental and 'sell-thru' markets. Audio tape offers most scope for product differentiation, brand loyalty and profitability. They are sold as blanks or as pre-recorded music cassettes.

#### 4. COMPETITION

INDUSTRY STRUCTURE	Concentrated	Fragmented
Local	✓	
Regional		✓ →
Global		✓

There are over 200 producers worldwide with around 40 generating revenues more than \$50 million

MARKET LEADERS			
Name	Location	Focus	Share
Sony	Japan+Europe, USA	Video/audio/data	8%
TDK	Japan+Europe, USA	Video/audio	8%
Hitachi Maxell	Japan	Video/audio/data	8%
3M	USA	Data/video	8%
BASF	Germany	Video/audio/data	5%

IMPORTANCE OF ECONOMIES OF SCALE		
High	Medium ✓	Low

## 5. CRITICAL SUCCESS FACTORS

## KEY TECHNOLOGIES/PROCESSES

- Coating of magnetic material onto polyester film (many smaller companies buy coated material from major players)
- Moulding of plastic housings
- Assembly of disk/video tape/audio cassette
- Testing

## CORE COMPETENCIES

- Solvent coating
- Injection moulding
- Rapid assembly of small components
- Automation

## MAJOR PROSPECTIVE DEVELOPMENTS

- Higher density 3 $\frac{1}{2}$ " disks (4MB)
- Optical disks?
- Digital compact cassette
- 8mm video cassettes for camcorders (needs vacuum sputtering)

## 6. BUSINESS PROSPECTS

FORECAST CHANGE IN TRADITIONAL MARKET		
Growing √	Stable	Decline
<p>Comment:</p> <p>The market will continue to grow at ~5% per annum.</p>		

PROSPECTIVE COMPETITIVE ENVIRONMENT	
Growing	Stable
<p>Comment:</p> <p>There are a number of companies in Korea and South East Asia entering the market with aggressive pricing policies</p>	

PROSPECTS FOR EXPORT	
Good √	Poor
<p>Comment:</p>	

PRESSURE ON COST STRUCTURE	
Materials	64%
Labour	17%
Capital	



## 7. PROSPECTIVE EQUITY HOLDER

	GOOD	POOR
Foreign commercial	√	
Foreign financial		
Local		

## 8. CONCLUSIONS

The company is one of the many 'minnows' in what is a global industry. They manage to export a substantial proportion of their production, so their quality must be acceptable and price competitive. They are about to lose a substantial proportion of turnover (34%) when they close the 5 1/4" production line.

As consumer purchasing power in CMEA countries grows, they should be able to sell more audio and video tape. Growth prospects in the professional data storage segment in CMEA countries should also be good.

There is over-capacity in the industry so price competition is severe. Profitability of the majors is generally very poor in the video and floppy disk areas and is compensated for by audio where branding is important and premium products are accepted.

Overall the market for 3 1/2" disks will continue. There will be higher density disks, but 2MB and 1MB will remain the major products for a few years.

In audio, the growth of digital cassettes will be slow and will not affect conventional cassettes for many years.

In video, there are no major technological trends to VHS cassettes.

## BULGARIAN ELECTRONICS INDUSTRY

## ORGTECHNICA, SILISTRA

## 1. RESPONSE TO QUESTIONNAIRE

SUB-SECTOR (1.9)	Microprocessors
------------------	-----------------

MAIN BUSINESSES (2.3)	%
1. Cash registers	71
2. Calculators	29
3.	
4.	
OTHER	
	100.0

SALES 1992 (5.4)	L 000's
Local	33,399
CMEA	21,536
West Europe	0
Other	
TOTAL	54,935

EMPLOYEES (4.1)	1,235
Of which R&D (3.2)	22

MAJOR MANUFACTURING UNITS (2.1)
1. PCB production
2. Mechanical treatment and coatings
3. Printing devices
4. Tools production

TECHNOLOGY GAP (2.5)	
Up to date	
1-3 years	
>3 years	√

66

CRITICAL FACTORS (6.3)	
New equipment	Neutral/positive (3)
Existing competition	V important (1)
Substitute products	Important (2)
Technological change	Important (2)
New competitors	V important (1)
New products	V important (1)

Main Businesses	COMPETITIVENESS (2.3)			
	1	2	3	4
Product:	E cash register	Calculators		
Performance	As good	As good		
Quality	Not as good	Not as good		
Specification	As good	As good		
Cost	Better	As good		
Competitiveness:				
Local	Highly comp	Highly comp		
CMEA	Highly comp	V comp		
Global	Not V comp	Uncomp		
Competitors:				
Local	Electronika	CICTT-Sofia		
CMEA	European+Japanese	Local		
Global	European+Japanese	KINCLE		

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## 2. COMMENTS ON QUESTIONNAIRE RESPONSES

The products are probably >5 years behind Western Europe, but there are huge shortages of automated cash registers and calculators in Russia and Ukraine.

The position of the license from Seiko is important and merits further investigation.

Hardware and software expertise is bought-in from outside (Q3.1) - contractual and IPR position important.

## 3. INTERNATIONAL MARKETS

## ESTIMATED MARKET SIZE

World market	US\$ 1bn
Europe	US\$ 418m

## CHANGE IN MARKET SIZE



	BUYING CRITERIA	
	Critical	Enabling
Functionality	1	
Design	3	
Quality		5
Branding		4
Distribution		
Price	2	

1 = Most important; 6 = Lowest

## BASIS OF MARKET SEGMENTATION

Market dominated by Japanese companies (Casio, Sharp), for calculators. Strong presence of specialist integrators of hardware and software (NCR), in cash registers and POS systems.

## 4. COMPETITION

INDUSTRY STRUCTURE	Concentrated	Fragmented
Local	√	
Regional	√	
Global	√	

MARKET LEADERS			
Name	Location	Focus	Share
Casio	Japan	Calculators/registers	
Sharp	Japan	Calculators	
NCR	USA	EDI/Cash management	

IMPORTANCE OF ECONOMIES OF SCALE		
High	Medium	Low

## 5. CRITICAL SUCCESS FACTORS

## KEY TECHNOLOGIES/PROCESSES

- PCB manufacture and component placing
- Plastics moulding and keyboards
- Printing units for talley rolls
- Software development

## CORE COMPETENCIES

- Automated manufacture
- Integrated hardware and software

## MAJOR PROSPECTIVE DEVELOPMENTS

- Increasing standardisation of EDI protocols across retail networks (credit card checking, scanning)
- Integration of POS and distribution/ordering/manufacturing systems

## 6. BUSINESS PROSPECTS

FORECAST CHANGE IN TRADITIONAL MARKET		
Growing	Stable	Decline ✓
<p>Comment: Short-term decline in traditional markets due to CMEA political and payments problems. Medium-term prospects depend on economic and political (rather than technical factors)</p>		

PROSPECTIVE COMPETITIVE ENVIRONMENT	
Growing ✓	Stable
<p>Comment: Increasing presence of Western JV's in retailing and distribution in Eastern Europe and the CIS implies market entry by competitors offering Western standards.</p>	

PROSPECTS FOR EXPORT	
Good ✓	Poor
<p>Comment:</p>	

PRESSURE ON COST STRUCTURE	
Materials	20%
Labour	+6%
Capital	



**7. PROSPECTIVE EQUITY HOLDER**

	GOOD	POOR
Foreign commercial	√	
Foreign financial		
Local		

**8. CONCLUSIONS**

With a partner able to operate counter trade with the CIS countries (principally Russia and Ukraine and possibly Kazakhstan) and provide some product modernisation this company offers good prospects of privatisation. The existing licence relationship with Seiko could perhaps be investigated as a partnering opportunity although Russian/Japanese political problems may discourage the Japanese trading houses.

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