

PROJECT PROFILE ON ELECTRONIC REMOTE CONTROL LED TOY

PRODUCT : Electronic Remote
Controlled Toy(CAR)

PRODUCTION CAPACITY : Qty. 2400 Nos

VALUE : Rs. (1 0 , 3 2 , 0 0 0 0)

YEAR OF PREPARATION : 2020 –2021

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Project at a Glance

Name of the Product	:	Electronic Remote Controlled Toy
		CAR
Production Capacity	:	2400 nos:
Total Investment	:	Rs. 25,23,250
Working Capital Required	:	Rs.19,50,750 (for 3 months)
Rate of Return on Investment	:	85.29%
Yearly Turnover	:	Rs.10,32,0000
Break Even point	:	54.35%
Profit Ratio	:	20.85%
No: of Employees	:	13

1. INTRODUCTION

The very word toy makes you remind of your childhood. The toys are categorized into many in India and the plastic toys have a market share of nearly 80% of the total toy industry in the country. Other types of toys available in the market are fabric toys, paper toys, and wooden toys, metal toys and DIY toys (containing arts and craft toys) that are manufactured mostly by the cottage industry. However, out of these the metal toys are considered to be sharp toys which are harmful for children and a hindrance in their safety, that is why these toys are known to be slowly losing its popularity. Another popular category of toys seen today are educational toys and activity toys which help build the mind and body of the child, then there are soft toys, Electronic toys, battery operated toys and board games like chess and monopoly.

There are different types of Electronic toys available in the market. Electronic toys with or remote, walkie talkie sets for kids, toy radios, musical toys, hand-held video games, video games used with T.V, Arcade entertainment products, educational toys etc are popular among Indian children. This report is about a remote controlled car toy. There are a number of Remote controlled Toys in the market. These, include Cars, trucks, playing machines and other equipments. There are differences in the mechanical assembly of these types of toys but the basic Electronic principle is the same. These types of toys have four main units i.e., Transmitter, Receiver, Motor and Power Source. The transmitter sends radio wave which is received by the receiver which is fitted with an antenna. These signals are used to activate the motor. The power source is typically a rechargeable battery pack, but sometimes it's just normal batteries.

2. MARKET PERSPECTIVE

The Indian middle class is prospering and even the 20% of the Indian population which is considered as the middle class constitute a huge market for any product/service. India's urban population is the second largest in the world, greater than the combined urban populations of all countries except China, the US and Russia. India has over 800 Indian toys and games manufacturers, exporters and suppliers. Most of the Toy manufacturers in India are from the unorganized sector. Mattel Toys, Funskool & Lego are a few International players in the Indian toy industry. The Indian toy industry, fueled by the vast domestic market, has now turned its attention to global markets and is fast gearing up to meet international demands. The strong points of Indian toy industry are skilled workforce, diverse range, focus on innovation and creativity, and emphasis on learning and education. Indian manufacturers are catering to both large and small volume requirements and are exporting to few of the most developed nations. Indian toy industry set to grow at 25% in the coming years.. Worldwide, the market for toys is huge and offers immense potential for companies to pursue. But the interests of children, who are the primary consumers for toys, are changing faster than ever, toy manufacturers have to create innovative toys to capture their interests.

Toys these days are popular not only with kids but adults have also entered this field through the medium of sports and games. Today many sports and games are played by the adults at national and international levels representing their country. Parents, now-a days also prefer to play with their child in order to interact well with the child So, they are seen to playing boards games and other toys with their children.

The Indian market is slightly different from that of overseas, where toys are bought as a child's development aid, i.e. they are considered to be equivalent to books. But in India the scene is slightly different. Unlike other developed economies amount of toys spent per child in India is very low. The metros and 'A' category town account for most of the branded purchase and sell even at higher price points. Largely the rest of the market is highly price sensitive and items above Rs.200 results in planned purchase and not in the impulse buying. In C and D category towns, unbranded and lower priced toys are sold at average price points below Rs.100. However, the scene in India is changing very fast and there is enough scope for more number of players in thefield.

The Indian toy industry today faces stiff competition from toy manufacturers in China or Chinese toys. Manufactures of toys in India have repeatedly been raising this issue with the Indian Government since it has become increasingly difficult to compete with China toy manufacturers. Chinese toys are available at a lower cost compared to Indian toys.

3. BASIS AND PRESUMPTIONS :

- (i) The maximum capacity utilization on single shift basis for 300 days a year. The Capacity Utilization of the unit is taken as 100% for financial analysis.
- (ii) The salaries and wages, cost of raw materials, utilities, civil construction etc. are based on the prevailing rates in and around Kerala. These cost factors are likely to vary with time andlocation.
- (iii) The cost of machinery and equipments refer to a particular make/model and prices are approximate.
- (iv) The project preparation cost etc. whenever required could be considered under pre-operativeexpenses.

- (v) The break even point percentage indicated is of full capacity utilization
- (vi) Interest on term and working capital loan must be preferably on current rate. In this project it is taken as 12%. Otherwise, the rate of interest on an average may be taken at 16%. The rate may vary depending upon the policy of the financial institutions/agencies from time to time
- (vii) The essential production machinery and test equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test and Development Centers (ETDCs) and Electronic Regional Test Laboratories (ERTLs) set up by the State Governments and STQC Directorate of the Department of Information Technology, Ministry of Communication and Information Technology, to manufacture products conforming to Bureau of Indian Standards.

4. IMPLEMENTATION SCHEDULE

The major activities in the implementation of the project have been listed and the average time for implementation of the project is estimated at 12 months:

Sl.No.	Name of Activity	Period in Months (Estimated)
1.	Preparation of project report	1
2.	Registration and other formalities	1
3.	Sanction of loan by financial institutions	3

4.	Plant and Machinery:	
(a)	Placement of orders	1
(b)	Procurement	2
(c)	Power connection/ Electrification	2
(d)	Installation/Erection of machinery/Test Equipment	2
5.	Procurement of raw materials	2
6.	Recruitment of Technical Personnel etc.	2
7.	Trial production	11
8.	Commercial production	12

Notes

1. Many of the above activities shall be initiated concurrently.
2. Procurement of raw materials commences from the 8th month onwards.
3. When imported plant and machinery are required, the implementation period of project may vary from 12 months to 15 months.

4. TECHNICAL ASPECTS

I. Manufacturing process

The radio controlled toys have four main parts:

Transmitter – The transmitter sends radio waves to the receiver.

Receiver - An antenna and circuit board inside the toy receives signals from the transmitter and activates motors inside the toy as commanded by the transmitter.

Motor(s) - The transmitter sends a control signal to the receiver using radio waves, which then drives a motor, causing a specific action to occur. The motor in a car may cause the wheels to turn, steer the vehicle, operate propellers etc

Power source, the power source is typically a rechargeable battery pack, but sometimes it's just normal batteries. Manufacturing process involves the assembly of electronic circuits, electro mechanical hardware parts,

Mechanical assembly and other sub assembly parts as per the design.

Subsequently, the electronics assembly-the ICs, transistor, diodes, resistors, capacitors, coils, electromagnetic relays, are assembled on PCBs as per design. The assembled PCBs are tested for the desired performance. The electronics assembly along with electromechanical assembly, hardware such as connectors/switches, mechanical assembly and light emitting diodes are assembled and housed in a fiber / plastic toy car case.

II. PRODUCTIONENVISAGED

Item	Quantity/Annum	Value/ Annum (Rs.)
Remote Controlled Toy Car	2,400	Rate @ Rs4300/pc = Rs10,32,0000

III. POLLUTIONCONTROL

The Govt. accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitution.

India having acceded to the Montreal Protocol in Sept. 1992, the production and use of Ozone Depleting Substances (ODS) like Chlorofluoro Carbon (CFC), Carbon Tetrachloride, Halons and Methyl Chloroform etc. need to be phased out immediately with alternative chemicals/solvents. A notification for detailed Rules to regulate ODS phase out under the Environment Protection Act, 1986 have been put in place with effect from 19th July 2000.

The following steps are suggested which may help to control pollution in electronics industry wherever applicable

In electronic industry fumes and gases are released during hand soldering / wave soldering/Dip soldering, which are harmful to people as well as environment and the end products. Alternate technologies may be

used to phase out the existing polluting technologies. Numerous new fluxes have been developed containing 2-10% solids as opposed to the traditional 15-35% solids.

Electronic industry uses CFC, Carbon Tetrachloride and Methyl Chloroform for cleaning of printed circuit boards after assembly to remove flux residues left after soldering, and various kinds of foams for packaging.

Many alternative solvents could replace CFC-113 and Methyl Chloroform in electronics cleaning. Other Chlorinated solvents such as Trichloroethylene, Perchloroethylene and Methylene Chloride have been used as effective cleaners in electronics industry for many years. Other organic solvents such as Ketones and Alcohols are effective in removing both solder fluxes and many polar contaminants.

IV. ENERGY CONSERVATION

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Govt. of India since 1980s. The Energy Conservation Act, 2001 has been enacted on 18th August 2001, which provides for efficient use of energy, its conservation and capacity building of Bureau of Energy Efficiency created under the Act.

The following steps may help for conservation of electrical energy:

- i) Adoption of energy conserving technologies, production aids and testing facilities.
- ii) Efficient management of process/manufacturing machineries and systems, QC and testing equipments for yielding maximum Energy Conservation.
- iii) Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and de-soldering stations.
- iv) Periodical maintenance of motors, compressor etc.
- v) Use of power factor correction capacitors. Proper selection and layout of lighting system; timely switching on-off of the lights; use of compact fluorescent lamps wherever possible etc.

6. FINANCIAL ASPECTS

(I) Land and Building

Built up area	200 sq. mtr
Office/ Stores	40 sq. mtr
Factory	160 sq. mtr
Rent (per month)	10,000/-

(II) Plant, Machinery and Equipments

Sl.No	Description	Ind./ Imp.	Qty.	Amount (Rs.)
1.	Digital Multimeter, 4½ Digit	Ind	2	24000
2.	Temp Controlled Soldering Unit	Ind	4	24000
3.	LCR Meter	Ind	2	22000
4.	Drilling machine	Ind	1	6000
5.	Analog Multimeter	Ind	2	3000
6.	Tool Kit	Ind	4	24000
7.	Electronic screw driver & screw feeder	Ind	5	35000
8.	Combined Soldering De soldering Station	Ind	2	38000
9.	High speed mini drill set	Ind	3	33000

10.	Digital Storage Oscilloscope 60 MHz	Ind	1	66000
11.	Personal Computer with UPS and Printer	Ind	2	100000
12.	Electrification machinery and equipments			37500
13.	Office Furniture, Working tables and Equipments	60000		
14	Tools, Dies and Equipments	50000		
15	Pre operative expenses	50000		
	Total fixed cost	5,72,500		

B. WORKING CAPITAL (PER MONTH)

Recurring Expenditure permonth

(i) Staff & Labor

Sl.No.	Designation	No. of persons	Salary/Month (Rs.)	Totalsalary permonth (Rs.)
1	Accountant	1	22000	22000
2	DesignEngineer	1	50000	50000
3	Production Manager	1	40000	40000
4	Sales/Service support Engineers	2	40000	80000
5	Skilled workers	3	21000	63000
6	Semi Skilled Workers	2	19000	38000
7	Un Skilled Workers	2	19000	38000
8	Peon/watch man	1	19000	19000
	Perquisites@ 15%			52500
	Total			40,2500

(ii) RawMaterial

Sl. No.	Description	Ind/Imp	Qty(nos)	Amount(Rs)
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1	Plastic /Fiber body chassis	Ind/Imp	200	13000
2	RC Toy car motor controller	Ind/Imp	200	45000
3	Front& rear brushless motor		350	44250
4	RC Pro Lite V2 730mAh 7.4V 2Cell LiPoly 2s730 Lithium Battery	Ind/Imp	200	17000
5	Fire Retarding Lithium Polymer Battery Charger	Ind/Imp	200	18000
6	Metal Gear Micro RC Servo	Ind/Imp	200	23000
7	Remote control unit	Ind/Imp	200	22000
8	Wires and cables. Connectors, consumables, mechanical parts ,Electronic Parts, Packing materials etc.	Ind	Ls	12000
			Total	194250

(iii) Utilities permonth

Sl. No.	Description	Amount (Rs.)
1	Power	6000
2	Water	1000
Total		7000

(iv) Other Contingent Expenses (permonth)

Sl. No.	Description	Amount (Rs.)
1	Rent	10000
2	Postage and stationery	2500
3	Telephone /Telex/Fax	3000
4	Repair & maintenance	5000
5	Transport and Conveyance charges	10000
6	Advertisement and Publicity	10000
7	Insurance	1000
8	Miscellaneous expenditure	5000
Total		46,500

Total recurring expenditurepermonth

Rs.3,46,200

Working Capital(3months)

Rs. 10,38,600

C. TOTAL CAPITALINVESTMENT

(i) Fixed capital	572500
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(ii) Working capital for 3 months	1950750
Total	2523250

10. FINANCIAL ANALYSIS

(I) Cost of Production (per annum)

Sl. No.	Description	(Rs.)
1	Total recurring expenditure	7803000
2	Depreciation on m/c & Equipments @ 10%	37,500
3	Depreciation on office furniture @ 20%	12,000
4	Depreciation on tools ,jigs and fixture @ 25%	12,500
5	Interest on capital investment @ 12%	302790
	Total	8167790

(II) Turnover per annum

Item	Qty (Nos)	Rate/Unit (Rs.)	Total sales (Rs.)
Electronic RC Toy car	2400	4300	10320000

(III) Profit per annum (Before Taxes)

Turn over per annum – Cost of production per annum
= 10320000 – 8167790 = **2152210**

$$\begin{aligned} \text{Profit ratio} &= \frac{(\text{profit/annum}) \times 100}{(\text{Sales/annum})} \\ &= 2152210 / 10320000 * 100 = \\ &= 20.85 \% \end{aligned}$$

$$\begin{aligned} \text{Rateofreturn} &= \frac{\text{Profit/annum} \times 100}{\text{Total Capitalinvestment}} \\ &= 2152210 / 2523250 \times 100 \\ &= 85.29 \% \end{aligned}$$

D. Break-even Point

Fixed Cost per annum	Rs
Rent	120000
Depreciation on m/c & Equipments @ 10%	37,500
Depreciation on office furniture @ 20%	12000
Depreciation on tools ,jigs and fixture @ 25%	12500
Interest on capital investment @ 13%	328022
Insurance	12000
40% Salaries and wages	1932000
40% other contingent expenses (excluding rent & Insurance)	146400
Total	2600400

Break-even Point

$$\begin{aligned} &\frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Profit}} \\ &= \frac{2600400 \times 100}{2600400 + 2152210} \\ &= 54.72\% \end{aligned}$$

11. ADDRESSES OF RAW MATERIALS SUPPLIERS

Sl.No	Addresses
1.	M/s. Applied Electronics Ltd. A-5,Wagle Industrial Estate, Thane-4, (Mumbai)
2.	Bakumbhai Ambalal Electronics Dept. Kaiser-T-Hind Building, Ballard Estate, Mumbai-38.
3.	Electronics Trade and Technology Dev. 15/48,Malcha Marg, New Delhi-21
4.	M/s. OEN Connectors Ltd. Vyattila, PB No.2, Cochin-19
5.	M/s. DC Plastics 27, D. L. F. Industrial Area, Opposite Moti Nagar, Delhi– 110015 Phone:+(91)-(11)-25118936/9810239067 Mobile / Cell Phone:+(91)-9810239067
6.	M/s Sun International, A-290, Weavers Colony Ashok Vihar, Phase-iv, New Delhi110 052, India Phone: +(91)-(11)-27442262 Fax: +(91)-(11)- 25461559 Mobile / Cell Phone:+(91)- 9810266345

12. ADDRESSES OF TEST EQUIPMENT SUPPLIERS

Sl.No	addresses
7.	M/s Kamal Electronics 14, Lakshmi Building, J.C Road, Bangalore 560002
8.	Aplab Limited XL 1/583,II Floor KrishnaNivas Adv.EashwaraIyer Road, Kochi 682 035 Phone 0484 2361623 Email aplabkochi@vsnl.net
9.	M/s Guru Agencies, M.G Road, Ernamkulam, Kerala.
10.	M/s. Meco Instruments Private Limited P.O. Box 6388, 301, Bharat Industrial Estate T.J. Road Sewree(W) Mumbai-400015 Tel.022-24137253/24137423 Email sales@mecoinst.com web. www.mecoinst.com
11.	M/s. LaxmiElectrotekManappat Centre HMT Junction Kaloamassery P.O Ernakulam District Kerala 683 104 Phone 0484-2551288, 2540321
12.	NI Systems (India) Private Limited Bangalore : 91 8041190000 Delhi : 91 1142658282 E mailni.india@ni.com