

DATA PATTERNS CASE STUDY

By- Shaurya Bishnoi



Source: Company

Data Patterns is a vertically integrated company that delivers indigenously electronic systems for defence and aerospace industry. The company has a huge focus on innovation and quick turnaround through efficient execution.

Its core competency revolves around using innovation to stay ahead of the curve in a complex industry where the company is a dominant player. The company follows generic strategy of product differentiation. Michael porter gave 2 generic strategies cost leadership and product differentiation. This strategy seems consistent across the board starting from the mindset of promoters to business operations to financials.

Breaking down ROIC for strategy analysis also indicates that the company has successfully implemented product differentiation strategy. However, in recent times, the company got economies of scale advantage due to government's higher focus on defence sector, indigenization and export promotion. This also improved the cost efficiency of the company. Its strategy and operations are in coherence with its mission statement. However, company's board is concentrated around engineers and it should diversify the board to achieve the vision of become leading Indian and global defence player.

In the last 1 year, it has given more than 100% return. In this report, we will look at

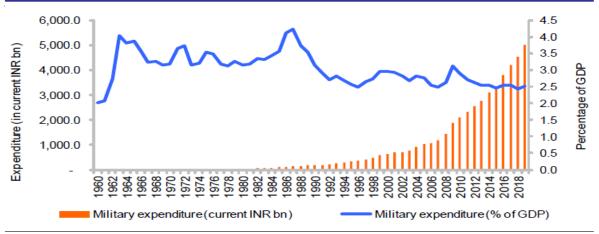
- Industry Overview
- Company's Business
- Growth Drivers
- Risks
- MOAT
- Financials Analysis
- Financial Statements
- Outlook

Industry Overview

Defence Industry in India is growing rapidly with a focus on indigenization and export promotion. India is targeting to achieve a turnover of Rs 1.75 Lk Cr and exports of Rs 35,000 Cr by 2025.

- Ministry of Defence got Rs 5.93 Lk Cr. This is 13% of the total budget
- Capital Outlay is increased from 1.52 Lk Cr to 1.62 Lk Cr. This is a 7% increase but inflation has gone up by 6% so its a 1% increase in real terms
- Out of the total defence procurement budget, 75% is earmarked for domestic procurement.
 Which stands close to Rs 1 Lk Cr
- The capital allocation budget for DRDO has also increased by 9% to Rs 23,264 Cr.
- Rs 12,544 Cr allocated to the Department of Space
- Other initiatives taken by the government are:
 - 1. Formulating Defence Production and Export Promotion Policy 2020 to promote export,
 - 2. Releasing Defence Acquisition Procedure to transform India into a global manufacturing hub
 - 3. Creating indigenization lists for 411 through 4 positive indigenization lists for defence equipment and more than 3,000 defence sub-components.
 - 4. Allowing FDI under automatic routes up to 74% and up to 100% through the government route.

India's military expenditure over the years



Source: The World Bank, Antique

Top 10 countries in terms of military expenditure (2021)

Country	Spending (USD bn)	World share (%)
USA	801	38
China	293	14
India	77	3.6
United Kingdom	68	3.2
Russia	66	3.1
France	57	2.7
Germany	56	2.7
Saudi Arabia	56	2.6
Japan	54	2.6
South Korea	50	2.4
Total	1,577	74.9

Source: SIPRI fact sheet, Antique

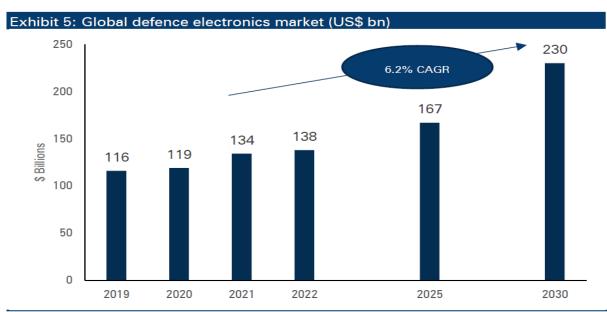
Military expenditure as a % of GDP

Year	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
India	2.1%	2.4%	2.38%	2.51%	2.51%	2.41%	2.5%	2.47%	2.54%	2.65%
USA	3.5%	3.2%	3.1%	3.1%	3.2%	3.2%	3.4%	3.8%	4.2%	4.5%
Russia	4.1%	3.87%	3.72%	4.23%	5.45%	4.86%	4.10%	3.84%	3.68%	3.42%
World	2.08%	2.20%	2.17%	2.19%	2.23%	2.26%	2.26%	2.31%	2.38%	2.42%

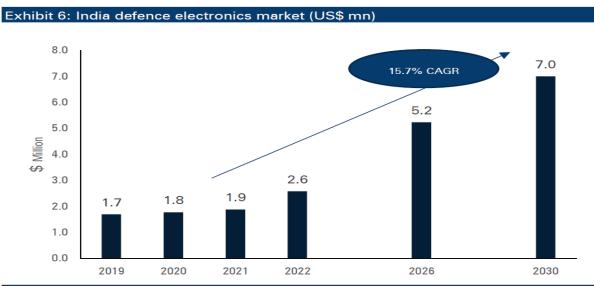
Source: Company

- The government expects around Rs 5 lakh crore orders in the next 5 years for defence platforms, equipment and components. Leading to Rs 3.5 Lakh crore orders for domestic industry (68% indigenization target).
- 30 transfers of technology (TOT) were signed between DRDO and 25 domestic players, 21 technologies were handed over.

ICICI Direct stated that defence electronics account for 25-35% of the costs of platforms used by the Indian Armed Forces which is expected to increase in the future. But 60% of electronic components are supplied by foreign OEMs. So due to higher indigenization efforts, the Indian defence electronics market will grow way quicker than the global defence electronics industry.

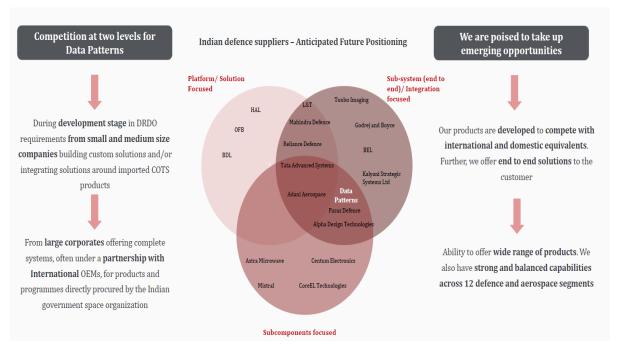


Source: ICICI Direct Research, Company



Source: ICICI Direct Research, Company

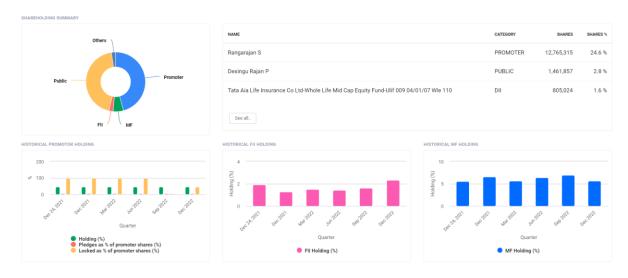
Competitive Environment for the company



Source: Company

Company's Business

Shareholding pattern



Source: trendlyne.com

The shareholding pattern indicates:

• Promoter has 45% holding and the public has around 44% ownership. This means the whole control is in the hands of promoters. Promoters of company have entrepreneurial gist and

- technocratic mindset. This allows the company to focus intensely on innovation and development.
- FIIs have shown higher interest in the company as FII holding increased from 1.27% in December 2021 to 2.3% in December 2022

Senior Management



Mr. Srinivasagopalan Rangarajan Promoter, Chairman & Managing Director

- Over 3 decades of experience in business development,
- B.Tech in Chemical Engineering from University of Madras,
 M.S from IIT, Madras



Ms. Rekha Murthy Rangarajan Promoter, Whole Time Director

- Over 2 decades of experience in administration, facility maintenance, HRD, process engineering and special projects
- B.A from Bangalore University, M.A in applied Psychology from Madras University



Mr. Venkata Subramanian Venkatachalam Chief Financial Officer

- Over 2 decades of experience in finance sector
- B.Com from Madurai Kamaraj University, Member of ICAI
- Associated with Data Patterns 20+ years



Mr. Vijay Ananth K

- ${\it COO}$ and ${\it Chief Information Security Officer}$
- Over 2 decades of experience in software engineering and product management
- BCS from Manomanian Sundaranar
 University and Masters degree in computer
 applications from the University of Madras
- Associated with Data Patterns 20+ years



Mr. Desinguraja Parthasarathy Chief Technology Officer

- 32 years experience in product development
- B.E from University of Madras
- · Associated with Data Patterns 30+ years



Mr. Thomas Mathuram Susikaran

- SVP Business Development
- 21 years of experience in Business Development and marketing
- B.E from Madurai Kamaraj University and a Masters' degree of tech in electrical engineering, IIT – Madras
- Associated with Data Patterns 20+ years



Ms. Nandaki Devi Ramachandracharya DGM and Management Representative Quality Management System

- 22 years of experience in test engineering
- B.E in electronics and communications and Advanced Diploma in Software Quality Management from AmitySoft Education.
- Associated with Data Patterns 15+ years



Ms. Manvi Bhasin

- Company Secretary and Compliance Officer
- 3 years of experience in legal and secretarial matters
- PGDM from Lal Bahadur Shastri Institute,, Associate of the ICSI
- Ioined Data Patterns in 2021
- The company's spirit of innovation comes from the top. Its MD has masters from IITM and is a technocrat by heart. All the senior management team members are associated with the company for around 20 years. Indicating strong loyalty and teamwork within the company. Also, its COO (Chief Operating Officer) and CMO (Chief Marketing Officer) have an engineering background. This ensures the company's swift adoption towards digitization and industry 4.0 in all the departments like operations and even marketing.

Board of Directors



Mr. Prasad Raghava Menon

- Non-executive, Independent Director
- Served as Managing Director of Tata
 Chemicals Ltd and Ex-Tata Power Company
 Ltd.
- Bachelor's degree from IIT, Kharagpur



Mr. Sowmyan Ramakrishnan

- Ex-Executive Director and CFO of Tata
- Bachelor's degree in technology (mechanical engineering) from IIT-M and a PG Diploma in Business Administration from IIM-A and M.A from Department of Oriental Studies and Research



Mr. Vadlamani Venkata Rama Sastry

- Non-executive, Independent Director
- Retired Chairman and M.D of Bharat Electronics Limited and

for Development of Telematics

 B.Sc and B.E in electronics and communication from Andhra University



Ms. Sabitha Rao

- Non-executive, Independent Director
 - Working with Cerebrus Consultants Pvt Ltd;
 PG Diploma in Management from IIM-C



Mr. Mathew Cyriac

- Nominee Director
- 23 years of experience in investment banking and private equity.
- Previously associated with Blackstone Advisors, Bank of America, DLJ Merchant Banking Partners and Credit Suisse
- Bachelor's degree in technology (mechanical engineering) from Anna University and Post graduate diploma in management from IIM-B (gold medalist)

- Besides these 5 **Srinivasagopalan Rangarajan, Rekha Murthy Rangarajan** and **Vijay Ananth** are also part of the board along with top management
- Its board is concentrated by engineers as 50% of board members have just an engineering background.
- The company is scaling up and is about to face competition from global players. So further
 diversifying its board by inculcating members having international business expertise can bode
 well for holistic strategy creation.

Mission and Vision

- The company has a vision of becoming a leading defence company and establishing a global footprint. Its huge ambitions will be served better if it will have more diverse board members with different backgrounds.
- Talking about the mission statement. The company has strategic coherency with its mission statement. It aims to make world-class integrated solutions by leveraging modern technology and experience. This theme is visible in all its business operations and also in financial statements.

History



Source: Company

Business Model

It is a vertically integrated defence electronics company involved in development, production and services.

• Development (28% share):

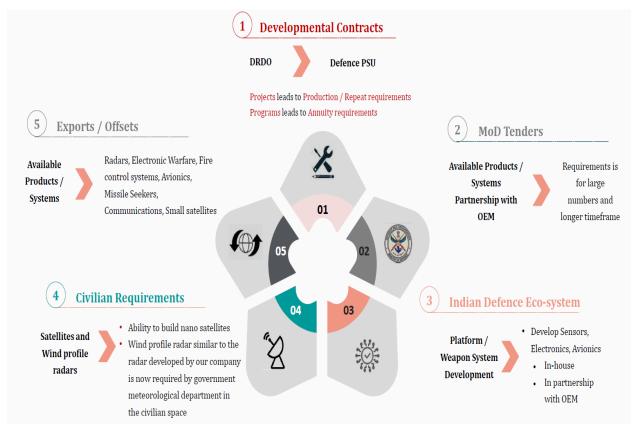
 Company does the development work along with DRDO, builds the products, goes through certification

Production (65% share):

 Company produces various defence electronics for Radars, BrahMos Missile, Fighter aircrafts.

• Services (7% share):

- The company also provides software services pertaining to its products.
- For the development business, company has good track record and relations with DRDO which helps in getting tenders while for production there are orders lined up for the next few years which gives revenue visibility. Also, collection cycles in the production business are much shorter.



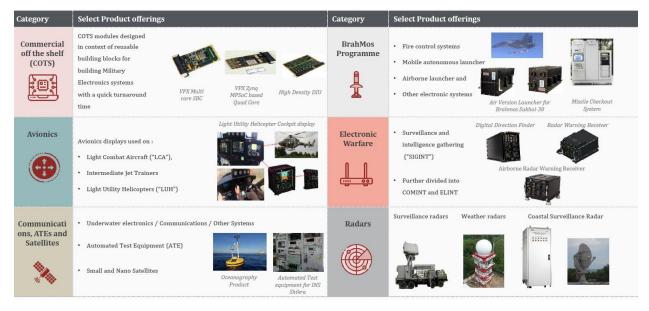
Source: Company

It has only one manufacturing plant. The state-of-the-art manufacturing facility is located in Chennai across 5.75 acres of land, it has expanded the plant by 2.81 acres. The company is looking to modernize its plant to stay updated with the latest production processes.



Source: Company

The company has diverse product offerings



Source: Company

Going ahead company will be focusing on following key verticals:

- 1) Satellite
- 2) Radars
- 3) Electronic Surveillance & Monitoring
- 4) Communication Systems

R&D and Digitization

A huge focus is given on innovation and R&D by the company

- Company has an entrepreneurial spirit to always stay ahead of the curve. As a result, R&D is a
 major focus area of the company that differentiates it from the competition.
- Over the years the company has developed domain knowledge and expertise in the production of defence electronics equipment.
- The company also provides various kinds of software services like Application development, driver development, Re-engineering of Software, Real-time application.
- As the firm will grow it will require data-driven management. Like coordination of different business units, and departments (Like marketing, finance, operations, corporate headquarter etc). Since company has a technocratic spirit. There won't be any issue in incorporating digitization. This will ensure seamless growth for the company's operations

Customers

The company has marquee customers with a history of providing reliable products and service to them



Growth Drivers

- In-house capability to develop unique electronic warfare and radar systems. The company has made various unique products that were developed for the 1st time in the country:
 - 1. Precision Approach Radar
 - 2. The Launch Countdown System for ISRO
 - 3. The Fire Control System for Brahmos
 - 4. Designed and developed a Coastal Surveillance Radar for ISRO; the nature of the project was the first in India
 - Data Patterns designed and developed several test equipment for the first time in India Sea King ATE, Laser Guided Bomb Kit Tester, Digital Flight Control Computer

- Business across the value chain like development, production and services with maximum revenue coming from production
- Focus on Indigenization bodes well for the company's order book
- Higher defence expenditure and capital outlay by the government, along with a focus on indigenization and exports depict strong order pipeline for the company. The management expects to get orders worth Rs 2000-3000 crore in the next three to four years

Risks

- Higher competition as FDI limit is increased
- Management complexity as the size of the company will increase
- Delayed order payments by the government
- Higher bargaining power of customers
- Huge working capital requirement
- The long gestation period of development projects

MOAT

Company's has several moats like innovation, propriety capability, experience player in industry having steep learning curve, strong brand value, high switching cost for customer.

- Innovation will allow it to stay ahead of the competition by developing new products
- It has propriety capability: From design, to manufacture, test and support for products throughout the life cycle that gives it a unique edge. As technical know-how is kept in house
- The company is specialized in a highly complex sector. Couple vertical integration with propriety capability. It creates knowledge of a firm that would be difficult to replicate even if top talent is poached
- Image of being innovative and having strong execution capability. Brand value helps a company in getting contracts and acquire new customers. High complexity
- High switching cost for customers: Although its customers are huge companies and
 governments with higher bargaining power. Data pattern makes highly critical components for
 the final product of their customers and also provide software services. So it would be difficult
 for its customers to leave Data Pattern.
- As the company grows its management will become more complex. Its technocratic nature will
 help in becoming a large firm whose management is digitized and data-driven. However, this
 point needs to be carefully assessed as the firm would grow.

Financial Analysis

Years	Mar-14 Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Growth Rates							
SalesGrowth	(20.70%)	(15.63%)	17.37%	164.93%	19.11%	43.47%	38.80%
EBITDA Growth	(32.75%)	(38.82%)	31.73%	182.32%	68.92%	113.14%	53.32%
EBIT Growth	(68.74%)	(151.96%)	(171.92%)	748.57%	173.18%	195.48%	71.61%
Net Profit Growth	(75.99%)	(209.70%)	(144.90%)	846.97%	171.36%	212.26%	69.96%
EPS Growth	(75.99%)	(209.70%)	(144.90%)	846.97%	171.36%	212.26%	(94.43%)

- Effects of favorable external environment and government initiatives are reflected in both the top-line and bottom-line growth of the company. EBIT and net profit growth also became positive recently due to economies of scale advantage. This also exhibits great execution in orders.
- EPS growth is same as that of net profit, but it changed in FY22 as company went public in December 2021 and that increased the numbers.

Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Liquidity Ratios								
Current Ratio	1.92	1.87	2.01	2.46	1.33	1.39	2.23	3.84
Quick Ratio	1.21	1.11	1.11	1.32	0.72	0.83	1.54	2.91
Cash Ratio	0.07	0.02	0.03	0.03	0.00	0.01	0.08	1.37

• The company has enough liquidity and the situation has improved over the years

Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Working Capital Cycle								
AR% Sales	68%	94%	116%	110%	79%	74%	70%	64%
AR Turnover	1.48	1.06	0.86	0.91	1.27	1.35	1.44	1.57
DSO	247	344	424	400	287	270	254	233
Inventory % COGS	61%	90%	122%	124%	96%	78%	60%	79%
Inventory turnover	1.63	1.11	0.82	0.81	1.04	1.29	1.67	1.27
Inventory days	223	328	446	451	350	283	219	287
AP % COGS	5%	16%	18%	13%	18%	17%	10%	25%
AP turnover	21.73	6.08	5.58	7.73	5.66	6.03	10.25	4.01
DPO	17	60	65	47	65	61	36	91
Cash Conversion Cycle	453	612	804	804	572	493	437	429

- Although company has huge working capital requirements, its cash conversion cycle has gone
 down in recent years. The company is aiming to further reduce it and trend suggests that
 company has put money where its mouth is
- Lower receivables indicate the company has improved its relations with suppliers and it is dealing with them in a more effective way

Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Profitability Ratios								
Gross Profit Margins	31.03%	26.96%	20.64%	21.89%	30.95%	34.38%	45.09%	50.99%
EBITDA Margin	26.51%	22.48%	16.30%	18.29%	19.49%	27.65%	41.08%	45.37%
EBIT (Operating Profit) Margins	22.57%	15.79%	8.75%	12.17%	15.02%	24.14%	38.59%	43.24%
Net Profit Margins	8.86%	2.68%	-3.49%	1.33%	4.77%	10.86%	23.65%	28.96%
Return on Assets (ROA)	-	0.88%	-0.94%	0.43%	2.91%	5.93%	17.01%	17.40%
Return on book equity (ROE)	-	1%	-1%	1%	5%	12%	29%	23%

- Better gross margins indicate company's focus on high-value products.
- The company is said to have a reusable building block model, where it reuses the capabilities. This allows it to distribute development costs over various projects. Thereby providing better EBITDA margins as the company further scale up.
- For all the return ratios, average assets of beginning and ending period are taken

Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
ROIC and Breakdown								
ROIC		2.74%	2.65%	2.72%	8.35%	12.97%	28.44%	30.52%
NOPAT/Sales		8%	9%	8%	11%	17%	28%	32%
Sales/Invested Capital		0.36x	0.30x	0.36x	0.79x	0.77x	1.00x	0.97x

- ROIC is a financial metric for competitive advantage. The higher the ROIC higher the competitive advantage over its rivals.
- NOPAT/Sales ratio seems to be the major contributor to ROIC and this portrays the successful
 execution of the product differentiation strategy. The company's intent of being an innovative
 firm is visible in its financials.
- Another generic strategy is cost leadership. This is shown by Sales/Capital, providing info about
 the company's efficiency and cost structure. It has also become better due to economies of scale
 advantage.

v								
Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Dupont Analysis								
Net Profit Margins	-	2.68%	-3.49%	1.33%	4.77%	10.86%	23.65%	28.96%
Total Asset Turnover	-	33%	27%	32%	61%	55%	72%	60%
Financial Leverage	-	1.51	1.51	1.45	2.09	1.92	1.58	1.23

- Dupont Analysis breaks down ROE into its components. It suggests what is driving better return for shareholders (i.e residual claimants), which has improved significantly in recent years.
- Progress is visible in both net profit margins and Asset turnovers however financial leverage declined as the company has reduced its debt.

Financial Statements

	Histo	orical Financial S	tatement - DAT	A PATTERNS (IN	IDIA) LTD			
Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Income Statement								
Sales	₹ 63.0	₹50.0	₹ 42.2	₹ 49.5	₹131.1	₹ 156.1	₹ 224.0	₹ 310.9
COGS	₹ 43.5	₹36.5	₹33.5	₹38.6	₹90.5	₹ 102.4	₹123.0	₹152.3
Gross Profit	₹ 19.55	₹ 13.47	₹ 8.70	₹ 10.83	₹ 40.56	₹ 53.67	₹ 100.98	₹ 158.51
Selling & General Expenses	₹ 2.85	₹ 2.24	₹1.83	₹ 1.78	₹ 15.01	₹ 10.51	₹ 8.99	₹ 17.47
EBITDA	₹ 16.70	₹ 11.23	₹ 6.87	₹ 9.05	₹ 25.55	₹ 43.16	₹91.99	₹ 141.04
Depreciation	₹ 2.48	₹3.34	₹3.18	₹3.03	₹5.86	₹ 5.48	₹ 5.57	₹ 6.63
EBIT (Operating Profit)	₹ 14.22	₹ 7.89	₹ 3.69	₹ 6.02	₹ 19.69	₹ 37.68	₹ 86.42	₹ 134.41
Interest	₹5.23	₹5.08	₹5.15	₹4.97	₹ 10.78	₹13.34	₹ 14.50	₹10.99
Earnings Before Tax	₹8.99	₹ 2.81	-₹1.46	₹ 1.05	₹8.9	₹ 24.3	₹71.9	₹123.4
Tax	₹3.4	₹1.5	₹ 0.0	₹ 0.4	₹ 2.7	₹7.4	₹ 19.0	₹ 33.4
Net Profit	₹5.6	₹1.3	(₹ 1.5)	₹ 0.7	₹ 6.3	₹ 17.0	₹ 53.0	₹ 90.0

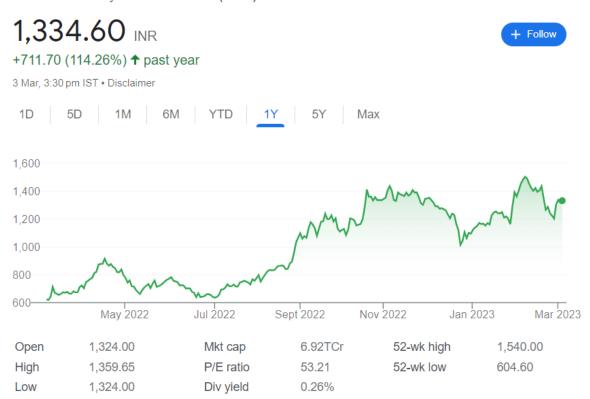
Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
No of Equity Shares (Cr)	0.17	0.17	0.17	0.17	0.17	0.17	0.17	5.19
Earnings per Share	₹32.82	₹ 7.88	-₹8.65	₹3.88	₹36.76	₹99.76	₹311.53	₹17.34
EPS Growth %	0.00%	-75.99%	-209.70%	-144.90%	846.97%	171.36%	212.26%	-94.43%

	Histo	orical Financial S	itatement - DAT	A PATTERNS (IN	IDIA) LTD			
Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Balance Sheet								
Equity Share Capital	₹1.7	₹ 1.7	₹ 1.7	₹ 1.7	₹ 1.7	₹1.7	₹ 1.7	₹ 10.4
Reserves	₹ 99.8	₹ 101.8	₹ 102.2	₹ 102.9	₹131.2	₹ 151.8	₹ 206.2	₹ 564.1
Borrowings	₹ 34.5	₹38.2	₹ 38.0	₹ 35.0	₹ 60.1	₹ 60.6	₹37.2	₹9.2
Trade Payables	₹ 2.0	₹6.0	₹6.0	₹5.0	₹16.0	₹17.0	₹12.0	₹ 38.0
Other Liabilities	₹ 10.9	₹9.1	₹9.0	₹ 7.9	₹ 68.4	₹ 64.3	₹71.5	₹ 85.0
Total Liabilities	₹ 148.9	₹ 156.8	₹ 156.8	₹ 152.4	₹ 277.4	₹ 295.4	₹ 328.6	₹ 706.7
Fixed Assets Net Block	₹ 32.2	₹29.3	₹ 26.3	₹23.6	₹36.4	₹33.4	₹33.2	₹ 47.5
Capital Work in Progress	-	-	-	-	-	-	-	₹ 17.3
Investments	₹7.3	₹7.3	₹ 7.3	₹ 7.3	-	-	-	-
Loans and Advances	₹ 37.0	₹39.0	₹32.0	₹ 18.0	₹ 16.0	₹ 22.0	₹ 25.0	₹ 29.0
Other Assets	₹1.0	-	-	-	₹ 35.0	₹43.0	₹31.0	₹ 118.0
Total Non Current Assets	₹ 77.5	₹ 75.6	₹ 65.6	₹ 48.9	₹ 87.4	₹ 98.4	₹89.2	₹ 211.8
Receivables	₹ 42.6	₹47.1	₹49.0	₹54.3	₹102.9	₹115.6	₹ 155.9	₹ 198.3
Inventory	₹ 26.6	₹32.8	₹ 40.9	₹ 47.7	₹ 86.7	₹ 79.4	₹73.7	₹119.8
Cash & Bank	₹ 2.5	₹1.1	₹1.2	₹1.1	₹ 0.3	₹ 1.5	₹8.8	₹ 177.1
Total Current Assets	₹71.7	₹81.0	₹91.1	₹ 103.1	₹ 189.9	₹ 196.6	₹ 238.5	₹ 495.2
Total Assets	₹ 149.2	₹ 156.6	₹ 156.6	₹ 152.0	₹ 277.4	₹ 294.9	₹ 327.7	₹ 706.9

	Histo	orical Financial S	tatement - DAT	A PATTERNS (IN	IDIA) LTD			
Years	Mar-14	Mar-15	Mar-16	Mar-17	Mar-19	Mar-20	Mar-21	Mar-22
Cash Flow Statements								
Cash from Operating Activities	₹ 13.4	₹1.1	₹ 5.9	₹8.6	(₹ 4.5)	₹ 13.4	₹43.4	₹ 50.3
Cash from Investing Activities	(₹ 0.7)	(₹ 0.8)	(₹ 0.1)	(₹ 0.3)	₹ 0.4	₹ 1.4	₹8.8	(₹ 117.8)
Cash from Financing Activities	(₹ 11.3)	(₹ 1.8)	(₹ 5.7)	(₹ 8.5)	₹ 2.3	(₹ 13.6)	(₹ 44.9)	₹ 235.9
Net Cash Flow	₹ 1.4	(₹ 1.5)	₹ 0.2	(₹ 0.2)	(₹ 1.8)	₹ 1.2	₹ 7.3	₹ 168.3

Outlook

Market Summary > Data Patterns (India) Ltd



- Company has performed well in past and has given over 114% return
- Although its P/E ratio is quite high, it has fallen around 13% from its 52-week high
- Brokerages are bullish on the company. ICICI direct has given target price of Rs 1540, and JM
 Financial has given target price of Rs 1500

Note: This is case study on the company and not an investment advice.