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Akash Enterprises:

A Case on Credit Risk Scoring of Small Value Loans

It was 10 am on January 22, 2024, when Mr. Ranjeet, the head of Commercial Bank's Shivaji Nagar Branch in Pune, was pondering over the business targets for the branch. He was concerned about having to achieve all the targets before the end of March. One of the targets was lending to MSMEs, particularly the micro enterprises governed by the Pradhan Mantri MUDRA Yojana (PMMY). Just then Ms. Soundarya, a young and enthusiastic credit officer of the branch entered his cabin with the loan application received from Akash Enterprises (AE), a micro enterprise. AE was a sole proprietorship firm started just recently and the promoter of the firm needed a term loan for purchase of a machinery. Ranjeet briefed Soundarya that the branch was short of achieving the target for MSME loans and advised her to complete the credit appraisal of the firm and put up the proposal with her recommendation.

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Soundarya collected necessary documents from the firm, completed due diligence, studied the loan application and compiled the details as follows.

The Promoter

AE was owned by Mr. Akash, 44, from Yawatmal district, Maharashtra. He had moved to Pune in 2004 and was residing in a small rented house in Bhosari, Pune, with his wife and son. He held an ITI certificate in Electrical Trade and had around 15 years of experience in the machine tool industry. He had worked as a machine tool operator at Electro Tools, a small firm specialising in CNC wire cutting of press tool parts, templates, gears, and racks. Later, he worked at Unitech Engineering, another small company where he served as a CNC programmer, responsible for interpreting design blueprints, programming CNC machines, and ensuring that specifications were met. Akash's industry experience and his relationships with various suppliers and buyers motivated him to start his own venture, AE. The business of AE was undertaking job works.

Akash's wife and his son lived with him. His wife was a tailor engaged in stitching ladies' garments and she worked from home. His father owned a 3.5-acre agricultural land in Yawatmal and was engaged in cultivating primarily cotton.

Akash Enterprises

AE was a Udyam-registered proprietary firm set up in a 400 sq. ft rented industrial shed at MIDC Industrial Estate, Bhosari, Pune. The business of the firm was profiling job works tailored to customer designs and the firm was surrounded by workshops engaged in a variety of engineering works. Akash managed everything including marketing, sourcing orders, finance, operations, etc. He engaged two operators and they were paid wages on a daily basis.

Akash offered profiling job works tailored to customer-specific designs, using advanced CNC machines and cutting technologies to produce precise and complex components. This service is essential in modern manufacturing for ensuring that each part meets stringent specifications, enhancing the quality and performance of final products. AE's customers provided the raw materials such as iron blocks and plates along with design specifications.

Soundarya received the report of ABC Consultants, the bank's empaneled agency for conducting due diligence. The report stated that an employee of the consulting firm visited AE's premise and found that the facts presented in the loan application were correct. The report also stated that enquiries were made with those doing business near AE and it was found that Mr. Akash was indeed the owner of the firm and the firm was working. Later, Ranjeet, the branch manager, too made a site inspection of the firm, made enquiries with AE's neighbours and found everything about the firm alright. His inspection report also mentioned that necessary amenities like transportation, manpower, utilities and raw material were readily accessible and the location was highly suitable for the firm.

Machinery

Akash was in desperate need of a DK-7735-M-LM CNC wire cut Electrical Discharge Machine (EDM). EDM is also referred to as spark machining, spark eroding, die sinking, wire burning or wire erosion. It is used in metal fabrication process for getting desired shapes using electrical discharges. It is ideal for cutting complex shapes and hard, conductive materials, and surface finishing. It is widely used in tool and die making, aerospace, automotive, and medical device



industries for producing precise components and intricate parts. One of the leading suppliers of machinery in Pune was SuperTech Machine Tools. The price quoted by the firm for DK-7735-M-LM CNC wire cut EDM, which Akash wanted to buy, was Rs. 10.03 lakhs. The price was inclusive of GST and installation charges. This particular machine was for precision cutting using electrical discharges. The main features of the machine were high-speed multi-cut capability, a robust control system, a user-

friendly interface, a steel cover, and an integrated tool box. Standard accessories for the machine included wire guides, a flushing system, and workpiece clamping fixtures.

The Machine Tools Industry

Machine tools used for operations like cutting, drilling and grinding improve product uniformity and reduce manual labour. The machine tools industry offer a variety of these tools from small instruments to large devices used in automotive, aerospace, and electronics industries. Growing industrial automation, which boosts productivity and ergonomics, is a key factor driving the market growth in India. Increase in SMEs and stringent product quality criteria further bolsters this growth. Additionally, lower labour and raw material costs, along with reduced tax rates, attract foreign companies to set up manufacturing bases in India. The growing energy demand and exploration of new oil and gas fields also positively impact the market for machine tools.

The India machine tools market is categorised by tool type into metal cutting, metal forming, and accessories, with metal cutting dominating. By technology, it is segmented into conventional and CNC, with CNC holding the largest share. Based on end use, the market is divided into automotive, aerospace and defense, electrical and electronics, consumer goods, precision engineering, and others, with the automotive industry leading. Regionally, North India dominates the market, followed by West and Central India, South India, and East India.

Akash's Relationship with the Bank

Akash had been a customer of Commercial Bank for over six years. He had availed a two-wheeler loan, and several consumer loans and gold loans in the past. He paid off all these loans and there were no outstanding dues from him. His CIBIL Score was 771 and his Experian Credit Score was 839. His family members had not taken any loans and hence had no credit history.

The Task Ahead

Apart from risk rating of AE, Ranjeet had to decide on the amount of loan to be sanctioned, the rate of interest, and more importantly, security for the loan. Projected financial statements of AE are presented in Exhibits 1 and 2. Commercial Bank had several credit risk rating models and the model to be used for small value loans is given in Exhibit 3. As per the extent regulations in India, collateral and third-party guarantee cannot be demanded from micro

enterprises. However, Credit Guarantee Fund for Micro Units (CGFMU) managed by the National Credit Guarantee Trustee Company (NCGTC) offers guarantee for loans given to micro enterprises³.

Exhibit 1
Profit and Loss Statement Projections of Akash Enterprises

	<i>Estimated</i>	<i>Projection</i>	<i>Projection</i>	<i>Projection</i>
	<i>Mar-24</i>	<i>Mar-25</i>	<i>Mar-26</i>	<i>Mar-27</i>
Gross Sales	3.00	18.00	22.50	28.13
Domestic Sales	3.00	18.00	22.50	28.13
Op. Income	0.00	0.00	0.00	0.00
Total	3.00	18.00	22.50	28.13
Cost of Sales	0.35	0.34	0.31	0.31
Raw Material (I)	1.05	6.15	6.98	8.72
Power & Fuel (II)	0.18	1.07	1.34	1.67
Employee Cost (III)	0.60	3.60	4.50	5.63
Other Manufacturing Expense (IV)	0.10	0.61	0.77	0.96
Depreciation(V)	0.75	1.39	1.18	1.01
Sub Total (I to V)	2.68	12.82	14.77	17.99
Add Opening Stock in Process	0.00	2.10	1.94	1.13
Sub Total (I to V)	2.68	14.92	16.71	19.12
Deduct Closing Stock in Process	0.15	0.90	1.13	1.41
Cost of Production	2.53	14.02	15.58	17.71

³ It is a Government of India scheme with the purpose of guaranteeing payment against default in micro loans extended to eligible borrowers by banks under Pradhan Mantri Mudra Yojana (PMMY). CGFMU guarantees loans granted to eligible micro units up to the specified limit of Rs. 10.00 Lakhs. The guarantee cover is up to 75% of the loan amount. There is a one-time guarantee fee and an annual service fee payable to the CGFMU scheme.

	<i>Estimated</i>	<i>Projection</i>	<i>Projection</i>	<i>Projection</i>
	Mar-24	Mar-25	Mar-26	Mar-27
Total Cost of Sales	2.53	14.02	15.58	17.71
Selling, General, Admin Expense	0.05	1.62	2.03	2.53
Sub Total	2.58	15.64	17.61	20.24
Operating Profit Before Interest	0.42	2.36	4.89	7.89
Interest	0.07	0.83	0.69	0.53
Operating Profit After Interest	0.35	1.53	4.20	7.36
PBT	0.35	1.53	4.20	7.36
Provision for Taxes	0	0	0	0.6
Net Profit/Loss	0.35	1.53	4.20	6.76
Retained Profit	0.35	1.53	4.20	6.76

(All figures in INR Lakhs)

Exhibit 2
Projected Balance Sheet of Akash Enterprises

	<i>Projected Mar-24</i>	<i>Projected Mar-25</i>	<i>Projected Mar-26</i>	<i>Projected Mar-27</i>
Current Liabilities				
Short-Term Borrowing	0.00	0.00	0.00	0.00
Sundry Creditors	0.05	0.45	0.56	0.7
Instalments of Term Loan (Due Within One Year)	0.97	1.29	1.45	1.63
Total Current Liabilities	1.02	1.74	2.01	2.33
Term Liabilities				
Term Loans (Excluding Instalments Due Within One Year)	6.53	5.24	3.79	2.16
Unsecured Loans	0	0	0	0
Total Term Liabilities	6.53	5.24	3.79	2.16
Total Outside Liabilities	7.55	6.98	5.8	4.49

	Projected Mar-24	Projected Mar-25	Projected Mar-26	Projected Mar-27
Net Worth				
Share Capital	3.58	6.37	9.26	11.96
Reserves	0	0	0	0
Net Worth	3.58	6.37	9.26	11.96
Total Liabilities	11.13	13.35	15.06	16.45
Assets				
Cash and Cash Balances	0.93	0.02	0.61	0.6
Trade Receivables	0.75	4.5	5.63	7.03
Packing Credit	0.15	0.9	1.13	1.41
Other Current Assets	0.02	0.04	0.99	1.71
Total Current Assets	1.85	5.46	8.36	10.75
Fixed Assets				
Gross Block	10.03	10.03	10.03	10.03
Capital Work in Progress	0	0	0	0
Depreciation	0.75	2.14	3.33	4.33
Net Block	9.28	7.89	6.7	5.7
Total Non-Current Assets	0	0	0	0
Investments/Deposits	0	0	0	0
Other Non-Current Assets	0	0	0	0
Total Assets	11.13	13.35	15.06	16.45

(All figures in INR Lakhs)

Exhibit 3
Model for Credit Risk Scoring of Small Value MSME Loans

<i>S. No.</i>	<i>Parameter</i>	<i>Maximum Score</i>	<i>Score Guide</i>	<i>Score Awarded</i>
Demographic Risk				
1	Borrower Age	10		
	Above 25 up to 40		10	
	Above 40 up to 55		8	
	Above 18 up to 25		6	
	above 55		0	

<i>S. No.</i>	<i>Parameter</i>	<i>Maximum Score</i>	<i>Score Guide</i>	<i>Score Awarded</i>
	0 up to 18		NA	
2	Educational Qualification	15		
	Doctorate/Post Graduate		15	
	Graduate		9	
	Diploma		6	
	Higher Secondary		3	
	Below Higher Secondary		0	
3	Marital Status	10		
	Married		10	
	Single		5	
4	Mobility of Individual: Location	20		
	Has not changed location in past 3 years		20	
	Changed location once in past 3 years		6	
	Changed location more than once in past 3 years		0	
5	Number of Dependents (Only Financial Dependents)	10		
	Zero		10	
	One		7	
	Two		4	
	More than two		0	
6	Number of Joint Applicants	15		
	Two or more		15	
	One		8	
	Zero		0	
7	Occupation	20		
	Professional		20	
	Own business		15	
	Others		8	
	Total Score	100		
Business Risk				
1	Demand for Products/Services	25		
	Perishable/non-perishable products, demand is GOOD/or service providers are less than requirement.		25	

<i>S. No.</i>	<i>Parameter</i>	<i>Maximum Score</i>	<i>Score Guide</i>	<i>Score Awarded</i>
	Perishable/non-perishable products, demand is MODERATE/or service providers are equal to requirement.		12	
	Players are more than requirement. Supply is more than demand or service providers are more than requirement.		6	
2	Extent of Competition	20		
	Low level of competition and few players in locality/place		20	
	Moderate competition or no competition since new product or service in locality		10	
	High level of competition and other players in the locality		5	
3	Availability or Proximity of Material/Product or Job Work	15		
	Raw Materials/Products being available or good in job work, no returns from buyers		15	
	Raw Materials/Products being easily available with delay or few job works is returned and satisfactory report		11	
	Raw Materials/Products being easily available with abnormal delay or delay in timely completion of job work		7	
	Poor availability of Raw Material/Products or abnormal delay and returns in job work		2	
4	Nature of Security, Marketability & Credit Guarantee Cover	25		
	Very Good Marketable Security backed by EMT/simple mortgage		25	
	Good Marketability Security backed by EMT/simple mortgage		20	
	Hypothecation with Credit Guarantee Cover		15	
	Hypothecation without Credit Guarantee Cover		5	
5	Relationship with Bank	15		
	All banking done through our bank for more than 4 years with satisfactory repayment track record		15	
	Good repayment track record with our bank (more than 2 years but less than 4 years track record)		10	

S. No.	Parameter	Maximum Score	Score Guide	Score Awarded
	Short-term relationship with satisfactory track record (less than 2 years track record)		2	
	No existing relationship/non-satisfactory track record		0	
	Total Score	100		
Financial Risk				
1	Loan to Value Ratio (loan amount to security offered)	25		
	Less than 0.5		25	
	0.5 and above up to 0.7		18	
	0.7 and above up to 0.9		10	
	0.9 and above		0	
2	TOL/TNW	25		
	Below or equal to 2		10	
	Above 2 and below 3		8	
	Above 3 and below 4		4	
	Above 4		2	
3	Guarantor's Loan to Net Worth Ratio	10		
	Below or equal to 2		10	
	Above 2 and below 3		8	
	Above 3.00 to below 4.00		4	
	Above 4 or not available		2	
4	Stability of Income	15		
	Income has steadily increased over the last 3 years		15	
	Income has been almost the same over the last 3 years		9	
	Income has been unstable (positive and negative) over the last 3 years		0	
	Income has been steadily decreasing over the last 3 years		-5	
5	Working Capital Limits to Sales for WC Limits OR fixed Obligations to Income Ratio/DSCR for Term Loans/Composite Loans	25		
	Upto 20% or above 2:1 (DSCR)		25	
	More than 20% but less than 30% or above 1.50:1 and below/=2:1		18	

<i>S. No.</i>	<i>Parameter</i>	<i>Maximum Score</i>	<i>Score Guide</i>	<i>Score Awarded</i>
	More than 30% but less than 40% or above 1.33:1 and below/=1.50:1		12	
	More than 40% or above/=to 1:1 or below/=1.33:1		8	
	DSCR less than 1		4	
	Total Score	100		
Management Risk				
1	Experience in Business/Services Owner is professionally qualified and/or has 20 years of experience in the business Owner has 20 years to 10 years of experience Owner has less than 10 years of experience or require support from others employees Owner has no prior experience in the business and depends purely on staff	25	 25 20 15 8	
2	Digital Transactions Provides customers digital payment options without charges Provides customers digital payment options with minimum charges Provides customers digital payment options with high charges No digital payment facilities	15	 15 9 5 2	
3	CIC Credit Score Above 750 701-750 651-700 Less than 650	35	 35 20 10 5	
4	Account Information Entire turnover passes through our bank accounts Turnover passed through our bank accounts is not satisfactory with limits granted	25	 25 10	
	Total Score	100		

Risk Categories and Weightage Considered as Given Below in Small Value Model

<i>Risk Category</i>	<i>Score Awarded</i>	<i>Weightage</i>	<i>Score Awarded x Weightage</i>
Demographic Risk		20%	
Business Risk		30%	
Financial Risk		30%	
Management Risk		20%	
Weighted Average Score			

Risk Scoring, Risk Grade and Grade Description of Small Value Loans

<i>Score</i>	<i>Grade</i>	<i>Description</i>	<i>Degree of Safety</i>
Above 85	SVL-1	Low Risk-III	Good
>70 and =85	SVL-2	Normal Risk	Satisfactory
>60 and =70	SVL-3	Moderate Risk-I	Adequate
>50 and =60	SVL-4	Moderate Risk-II	Just adequate and needs monitoring
>40 and =50	SVL-5	High Risk-I	Inadequate and needs very close watch and monitoring
>30 and =40	SVL-6	High Risk-II	Poor and needs very close watch and monitoring
Equal to 30 and 20	SVL-7	High Risk-III	Poor
Less than 20	SVL-8	Default	Default