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ACG WEBINAR: DATA ANALYTICS – BOTTOM UP APPROACH TO FINANCIAL DUE DILIGENCE



## DATA ANALYTICS – BOTTOM UP APPROACH TO FINANCIAL DUE DILIGENCE



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# AGENDA

- Due Diligence & Lower Middle Market
- What Is “Bottom Up” Due Diligence?
- Data Analytics – Four-Step Process
- Case Studies

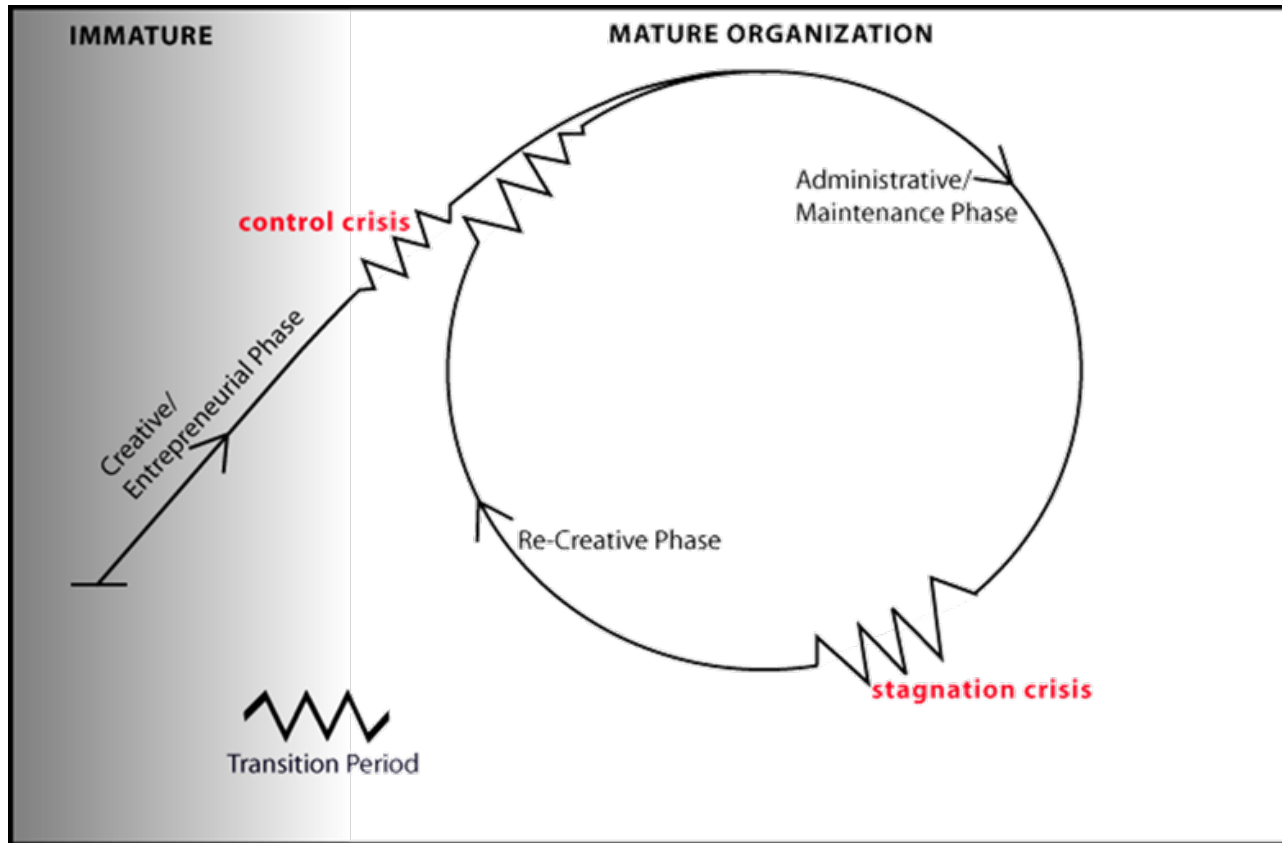


# DUE DILIGENCE & LOWER MIDDLE MARKET (LMM)

- Working definition of LMM
- Messy business (or) diamond in the rough
- Incomplete businesses
  - Processes
  - Org chart
  - Information systems
  - INFORMATION
- Valuation dynamics in LMM deal



# BUSINESS EVOLUTION CYCLE



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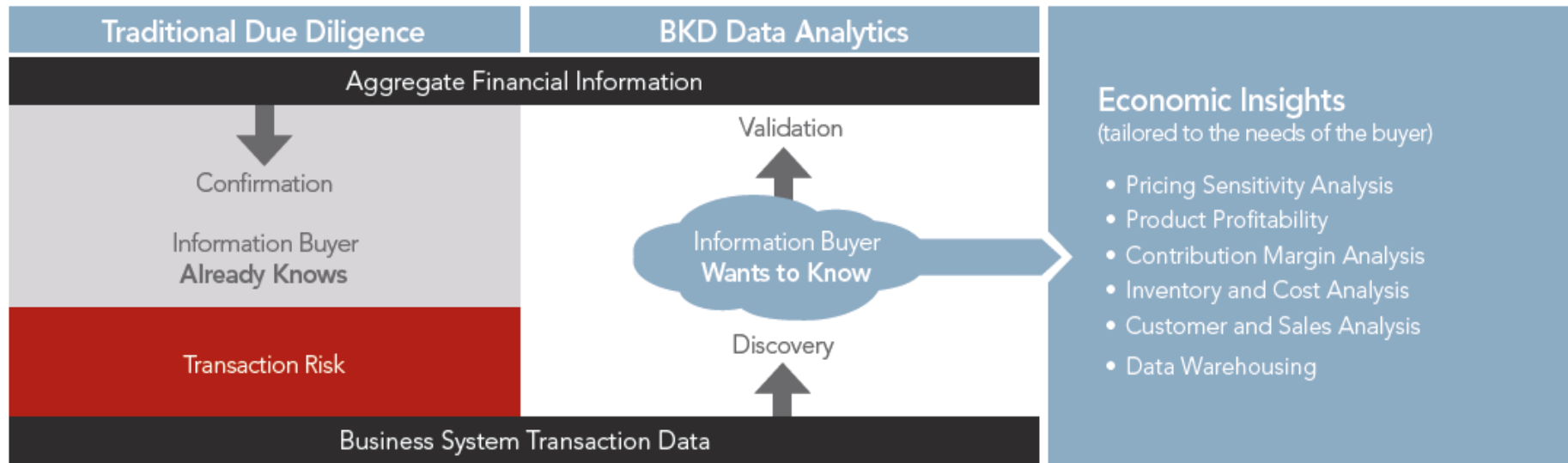
# WHERE IS THE TARGET IN THE EVOLUTION CYCLE?

- What do I know about them?
  - Accidental successes
  - “It’s all about me”
  - Lack of understanding about internal economics
  - Undefined or incomplete market strategy
- “Sun & planets” organizational structure
- Unpolished – “Classic entrepreneurial business”



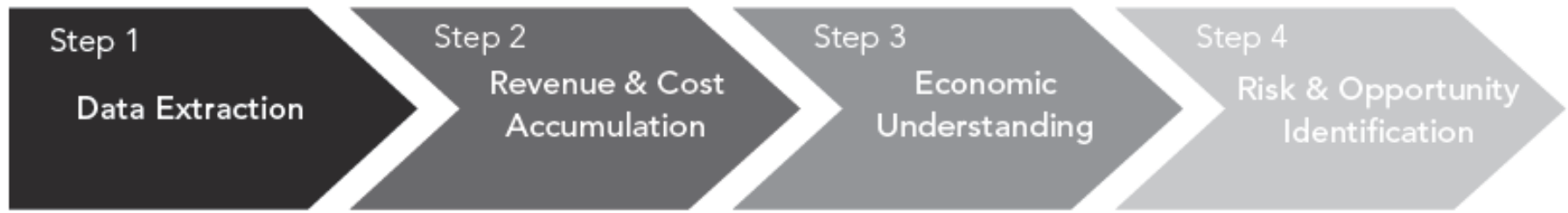
# UNDERSTANDING THE RED X

## What Is Bottom Up Due Diligence?





# DATA ANALYTICS – FOUR-STEP PROCESS







# TECHNICAL TERMS

Building understanding

- SQL (Structured Query Language) & Relational Data Base
- ODBC/Open Data Base Connectivity
- Data base structure
  - Transaction data: Headers & lines
  - Master data
  - Primary data keys



## Step 1

# Data Extraction

- Middle Market ERP (Enterprise Resource Planning systems)  
What is unique/What is not
- Understanding the plumbing



# DATA DICTIONARY

- Sale Order
- Purchase Order
- Invoice
- Bill of Material
- Routing Steps
- Customer Master Data
- Vendor Master Data
- Item Master Data



## Step 2

# Revenue & Cost Accumulation

- Balancing act
- Baseline period/Historical period
- Building the cube
  - “Data warehousing on the fly”

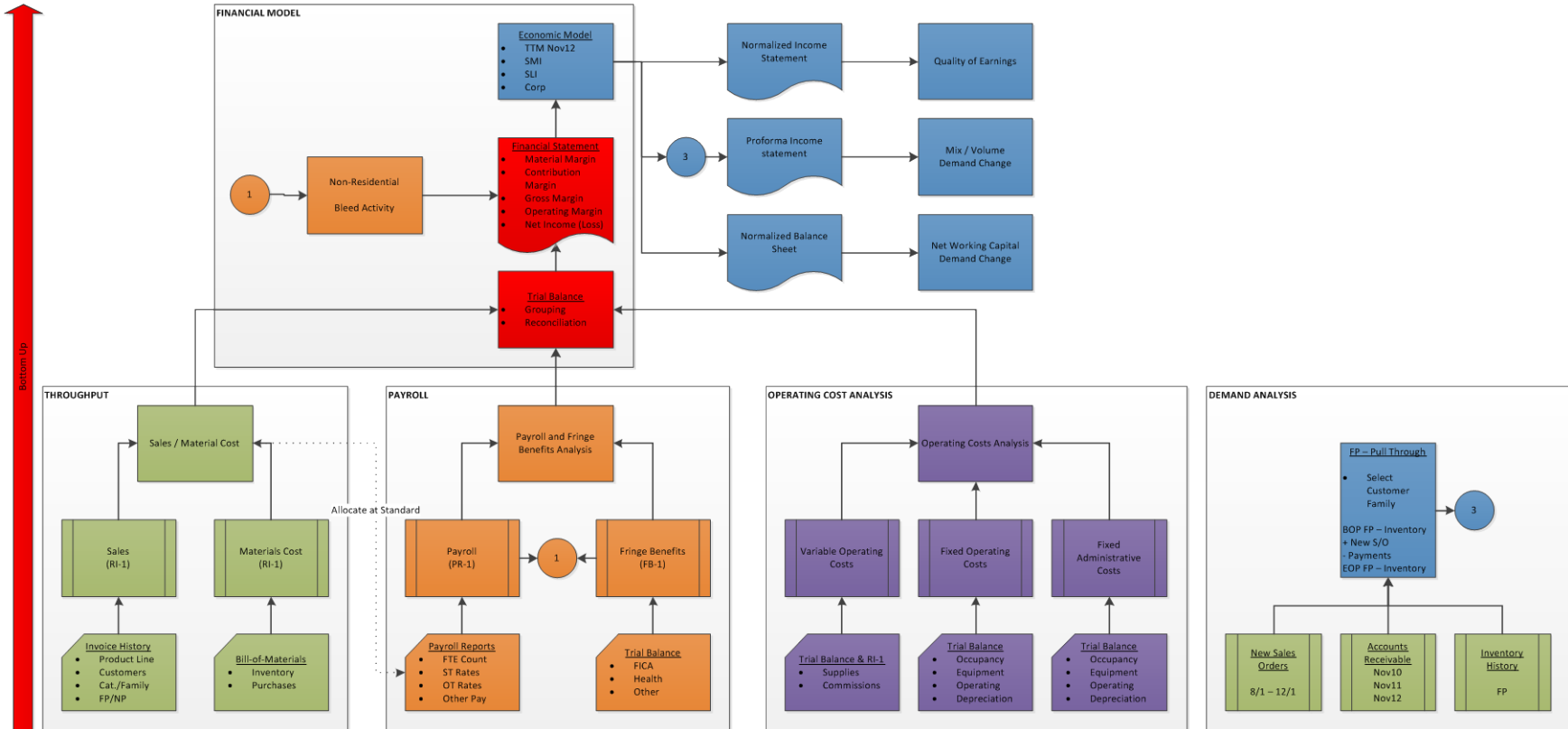
## Step 3

# Economic Understanding

- Building the financial model
- Defining economic relationships
  - Throughput (material) margin
  - Contribution margin
  - Gross margin
  - Operating margin
- Carve out considerations



# COST FLOW – DIAGRAM





## Step 4

# Risk & Opportunity Identification

- Predictive analytics – Turning data into information
- Concluding on the RED X



Freight, Logistics & 3PL (Power Lanes)

# CASE STUDY EXAMPLE 1



# FREIGHT, LOGISTICS & 3PL (POWER LANES)

## SIGNIFICANT CUSTOMERS PER POWER AND NON-POWER LANES - TTM12

POWER LANES											Narrative
Customer Number	Customer Name	Revenue	% Revenue	Cost	Margin	Margin %	Pounds	Revenue/LE	Cost/LB	Margin/LB	
AABBASOM001	Division 1	\$ 6,502	23.1%	\$ 1,799	\$ 4,703	72.3%	13,834	\$ 0.47	\$ 0.13	\$ 0.34	A
AABBASOM006	Division 2	258	0.9%	877	(619)	-239.9%	7,479	0.03	0.12	(0.08)	
AABBASOM008	Division 3	19	0.1%	8	11	57.9%	26	0.73	0.31	0.42	
AABBASOM004	Division 4	6	0.0%	4	2	33.3%	3	2.00	1.33	0.67	
AABBASOM005	Division 5	6	0.0%	4	2	33.3%	3	2.00	1.33	0.67	
AABBASOM002	Division 6	6	0.0%	39	(33)	-550.0%	121	0.05	0.32	(0.27)	
AABBASOM003	Division 7	2	0.0%	1	1	50.0%	3	0.67	0.33	0.33	
<b>AABBA total</b>		<b>6,799</b>	<b>24.1%</b>	<b>2,732</b>	<b>4,067</b>	<b>59.8%</b>	<b>21,469</b>	<b>0.32</b>	<b>0.13</b>	<b>0.19</b>	
SHOCELAX001	Customer E	922	3.3%	618	304	33.0%	2,940	0.31	0.21	0.10	B
AMELEADFw002	Customer B	467	1.7%	278	189	40.5%	974	0.48	0.29	0.19	
BONWADOLS001	Customer K	308	1.1%	174	134	43.5%	865	0.36	0.20	0.15	
HILCTSMEM001	Customer D	299	1.1%	259	40	13.4%	1,671	0.18	0.15	0.02	
USAIRWCLT001	Customer J	277	1.0%	90	187	67.5%	2,032	0.14	0.04	0.09	
PENWILMSP001	Customer G	222	0.8%	171	51	23.0%	610	0.36	0.28	0.08	
EXPSCRPHX001	Customer P	138	0.5%	-	138	100.0%	2,989	0.05	-	0.05	
HERMATPHX001	Customer Q	47	0.2%	17	30	63.8%	142	0.33	0.12	0.21	
DOLLLPDFw001	Customer D	41	0.1%	13	28	68.3%	37	1.11	0.35	0.76	
JSUZETDFw001	Customer R	33	0.1%	20	13	39.4%	75	0.44	0.27	0.17	
SOUAIRDFw002	Customer NI	31	0.1%	2	29	93.5%	14	2.21	0.14	2.07	
FPASSOLAX002	Customer I	30	0.1%	25	5	16.7%	210	0.14	0.12	0.02	B
UNIWORMCI001	Customer S	24	0.1%	-	24	100.0%	2,989	0.01	-	0.01	
STRSUSPHX001	Customer T	22	0.1%	11	11	50.0%	231	0.10	0.05	0.05	B
SPOAPPPHX001	Customer U	19	0.1%	-	19	100.0%	91	0.21	-	0.21	
TEMPERSPK001	Customer V	19	0.1%	-	19	100.0%	650	0.03	-	0.03	B
SOUAIRPHX001	Customer N	15	0.1%	-	15	100.0%	481	0.03	-	0.03	
FLEXPRPHX001	Customer W	14	0.0%	5	9	64.3%	22	0.64	0.23	0.41	B
COUGRAPHX001	Customer X	10	0.0%	9	1	10.0%	1,027	0.01	0.01	0.00	
SCAGAMDFw002	Customer Y	8	0.0%	6	2	25.0%	13	0.62	0.46	0.15	
All other customers	All Other Customers	61	0.2%	11	50	82.0%	882	0.07	0.01	0.06	
<b>Customer total</b>		<b>3,007</b>	<b>10.7%</b>	<b>1,709</b>	<b>1,298</b>	<b>43.2%</b>	<b>18,945</b>	<b>0.16</b>	<b>0.09</b>	<b>0.07</b>	
<b>Total power lane:</b>		<b>\$ 9,806</b>	<b>34.8%</b>	<b>\$ 4,441</b>	<b>\$ 5,365</b>	<b>54.7%</b>	<b>40,414</b>	<b>\$ 0.24</b>	<b>\$ 0.11</b>	<b>\$ 0.13</b>	C

# FREIGHT, LOGISTICS & 3PL (POWER LANES)

SIGNIFICANT CUSTOMERS PER POWER AND NON-POWER LANES - TTM12

NON POWER LANES												Narrative
Customer	Customer Name	Revenue	% Revenue	Cost	Margin	Margin %	Pounds	Revenue/LB	Cost/LB	Margin/LB		
AABBASOM001	Division 1	\$ 4,114	14.6%	\$ 4,182	\$ (68)	-1.7%	14,352	\$ 0.29	\$ 0.29	\$ (0.00)	A	
AABBASOM006	Division 6	336	1.2%	422	(86)	-25.6%	1,143	0.29	0.37	(0.08)		
AABBASOM008	Division 5	88	0.3%	65	23	26.1%	207	0.43	0.31	0.11		
AABBASOM004	Division 7	72	0.3%	58	14	19.4%	120	0.60	0.48	0.12		
AABBASOM005	Division 8	48	0.2%	70	(22)	-45.8%	121	0.40	0.58	(0.18)		
AABBASOM002	Division 4	40	0.1%	26	14	35.0%	125	0.32	0.21	0.11		
AABBASOM003	Division 3	16	0.1%	8	8	50.0%	21	0.76	0.38	0.38		
AABBASOM009	Division 2	15	0.1%	18	(3)	-20.0%	76	0.20	0.24	(0.04)		
<b>AABBA total</b>		<b>4,729</b>	<b>16.8%</b>	<b>4,849</b>	<b>(120)</b>	<b>-2.5%</b>	<b>16,165</b>	<b>0.29</b>	<b>0.30</b>	<b>(0.01)</b>		
LECCHACHA001	Customer C	2,028	7.2%	1,641	387	19.1%	9,385	0.22	0.17	0.04		B
AMELEADF002	Customer B	1,777	6.3%	1,338	439	24.7%	5,936	0.30	0.23	0.07		
DOLLLPDF001	Customer D	1,304	4.6%	791	513	39.3%	2,190	0.60	0.36	0.23		
NYPHEASAN002	Customer F	1,131	4.0%	827	304	26.9%	2,079	0.54	0.40	0.15		
ENCMEDMFE001	Customer H	933	3.3%	748	185	19.8%	2,243	0.42	0.33	0.08		
PENWILMSP001	Customer G	871	3.1%	699	172	19.7%	2,107	0.41	0.33	0.08		
RPASSOLAX002	Customer I	737	2.6%	589	148	20.1%	2,371	0.31	0.25	0.06		
WORNGEBOS001	Customer L	360	1.3%	230	130	36.1%	1,028	0.35	0.22	0.13		
MTDSOUPH002	Customer M	352	1.2%	261	91	25.9%	2,089	0.17	0.12	0.04		
USAIRWCLT001	Customer J	274	1.0%	291	(17)	-6.2%	3,031	0.09	0.10	(0.01)		
SOUAIRDFW002	Customer NI	273	1.0%	222	51	18.7%	609	0.45	0.36	0.08	B	
SHIOCELAX001	Customer E	260	0.9%	208	52	20.0%	881	0.30	0.24	0.06		
BFGOODJAX001	Customer Z	243	0.9%	182	61	25.1%	716	0.34	0.25	0.09		
SCAGAMDFW002	Customer Y	212	0.8%	121	91	42.9%	462	0.46	0.26	0.20		
SMINEPANR001	Customer AA	205	0.7%	179	26	12.7%	1,125	0.18	0.16	0.02		
JOHCRAPFX001	Customer BB	161	0.6%	121	40	24.8%	1,174	0.14	0.10	0.03		
BONWAROLS001	Customer K	159	0.6%	114	45	28.3%	348	0.46	0.33	0.13		
PINGPHX001	Customer CC	141	0.5%	78	63	44.7%	628	0.22	0.12	0.10		
FLEXPRPHX001	Customer W	141	0.5%	73	68	48.2%	321	0.44	0.23	0.21		
GOONETDFW001	Customer DD	131	0.5%	57	74	56.5%	510	0.26	0.11	0.15		
All other customers	All Other Customers	2,020	7.2%	1,397	623	30.8%	12,078	0.17	0.12	0.05		
<b>Total customers</b>	<b>Total customers</b>	<b>13,713</b>	<b>48.7%</b>	<b>10,167</b>	<b>3,546</b>	<b>25.9%</b>	<b>51,311</b>	<b>0.27</b>	<b>0.20</b>	<b>0.07</b>	C	
<b>Total non power lanes</b>	<b>Total non power</b>	<b>\$ 18,442</b>	<b>65.4%</b>	<b>\$ 15,016</b>	<b>\$ 3,426</b>	<b>18.6%</b>	<b>67,476</b>	<b>\$ 0.27</b>	<b>\$ 0.22</b>	<b>\$ 0.05</b>	D	



Fleet Rental (ROI)

# CASE STUDY EXAMPLE 2

# FLEET RENTAL (ROI)

Category	Item No	Description	Purchase Date	Purchase Price	TTMNov12 Revenue	TTMNov12 Rental HR	Util % (8,760Hr)	IRR %
Category 0001	33213	Rental Item # 1311	NULL	\$ -	\$ 21	50,616	578%	
Category 0002	54456	Rental Item # 1312	4/18/2011	1	1	2,695	31%	94%
Category 0003	56163	Rental Item # 1313	5/27/2011	7	1	750	9%	13%
Category 0004	65982	Rental Item # 1314	4/17/2012	5	2	399	5%	42%
Category 0005	598	Rental Item # 1315	4/28/2007	187	214	5,841	67%	114%
Category 0006	15953	Rental Item # 1316	6/20/2007	169	42	3,763	43%	25%
Category 0007	15954	Rental Item # 1317	6/20/2007	169	88	6,854	78%	52%
Category 0008	17839	Rental Item # 1318	11/3/2007	167	96	5,842	67%	57%
Category 0009	18211	Rental Item # 1319	11/19/2007	168	113	5,686	65%	67%
Category 0010	18245	Rental Item # 1320	11/12/2007	217	73	5,332	61%	34%
Category 0011	24440	Rental Item # 1321	3/31/2008	217	108	5,386	61%	50%
Category 0012	26336	Rental Item # 1322	6/13/2008	194	106	6,643	76%	55%
Category 0013	26685	Rental Item # 1323	6/13/2008	173	78	4,352	50%	45%
Category 0014	30428	Rental Item # 1324	12/12/2008	192	54	3,296	38%	28%
Category 0015	33155	Rental Item # 1325	4/20/2009	211	98	5,920	68%	46%
Category 0016	48388	Rental Item # 1326	11/9/2010	182	93	6,864	78%	51%
Category 0017	57128	Rental Item # 1327	7/8/2011	239	137	6,760	77%	57%
Category 0018	57130	Rental Item # 1328	NULL	-	13	844	10%	
Category 0019	58124	Rental Item # 1329	8/12/2011	247	167	7,943	91%	67%
Category 0020	58380	Rental Item # 1330	NULL	-	22	1,943	22%	
Category 0021	58749	Rental Item # 1331	NULL	-	20	1,255	14%	
Category 0022	58823	Rental Item # 1332	NULL	-	26	1,716	20%	
Category 0023	58925	Rental Item # 1333	NULL	-	21	1,490	17%	
Category 0024	66092	Rental Item # 1334	4/20/2012	198	57	7,188	82%	29%
Category 0025	66149	Rental Item # 1335	4/24/2012	259	26	1,853	21%	10%



Add-on accretion

# CASE STUDY EXAMPLE 3

# ADD-ON ACCRETION

	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012
<b>Revenue:</b>										
Gross sales	103,666,342	(17,912,935)	-	-	85,753,407	-	85,753,407	-	85,753,407	111.5%
Reconciliation allocation	136,523	(23,590)	-	-	112,932	-	112,932	-	112,932	0.1%
Sales returns and allowances	(2,349,035)	14,499	-	-	(2,334,536)	103,905	(2,230,630)	-	(2,230,630)	-2.9%
Discounts	(90,137)	-	-	-	(90,137)	-	(90,137)	-	(90,137)	-0.1%
Freight out	(91,177)	7,545	-	-	(83,632)	-	(83,632)	-	(83,632)	-0.1%
Royalties	(2,045,438)	-	-	-	(2,045,438)	-	(2,045,438)	-	(2,045,438)	-2.7%
Advertising	(4,493,884)	4,393	-	-	(4,489,491)	-	(4,489,491)	-	(4,489,491)	-5.8%
Commissions	-	-	-	-	-	-	-	-	-	0.0%
<b>Net revenue</b>	<b>94,733,195</b>	<b>(17,910,088)</b>	<b>-</b>	<b>-</b>	<b>76,823,106</b>	<b>103,905</b>	<b>76,927,011</b>	<b>-</b>	<b>76,927,011</b>	<b>100.0%</b>
<b>Material cost:</b>										
Materials	72,621,594	(12,749,724)	-	-	59,871,870	-	59,871,870	-	59,871,870	77.8%
Variances	(3,495,199)	665,764	-	-	(2,829,435)	-	(2,829,435)	-	(2,829,435)	-3.7%
Markdown	532,703	(15,337)	-	-	517,366	-	517,366	-	517,366	0.7%
Seconds	785,007	(345)	-	-	784,662	-	784,662	-	784,662	1.0%
<b>Total material costs</b>	<b>70,444,105</b>	<b>(12,099,642)</b>	<b>-</b>	<b>-</b>	<b>58,344,462</b>	<b>-</b>	<b>58,344,462</b>	<b>-</b>	<b>58,344,462</b>	<b>75.8%</b>
<b>Material margin</b>	<b>24,289,090</b>	<b>(5,810,446)</b>	<b>-</b>	<b>-</b>	<b>18,478,644</b>	<b>103,905</b>	<b>18,582,549</b>	<b>-</b>	<b>18,582,549</b>	<b>24.2%</b>
<b>Material margin percentage</b>	<b>25.6%</b>	<b>32.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>24.1%</b>	<b>100.0%</b>	<b>24.2%</b>	<b>0.0%</b>	<b>24.2%</b>	<b>0.0%</b>
<b>Direct operating costs:</b>										
Direct labor standards	5,974,852	(890,591)	-	-	5,084,261	-	5,084,261	-	5,084,261	6.6%
Variances	(381,271)	(319,949)	-	-	(701,219)	-	(701,219)	-	(701,219)	-0.9%
Fringe benefits	1,242,509	(185,204)	-	-	1,057,305	-	1,057,305	-	1,057,305	1.4%
<b>Total direct operating costs</b>	<b>6,836,090</b>	<b>(1,395,743)</b>	<b>-</b>	<b>-</b>	<b>5,440,347</b>	<b>-</b>	<b>5,440,347</b>	<b>-</b>	<b>5,440,347</b>	<b>7.1%</b>
<b>Contribution margin</b>	<b>17,453,000</b>	<b>(4,414,703)</b>	<b>-</b>	<b>-</b>	<b>13,038,297</b>	<b>103,905</b>	<b>13,142,202</b>	<b>-</b>	<b>13,142,202</b>	<b>17.1%</b>
<b>Contribution margin percentage</b>	<b>18.4%</b>	<b>24.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>17.0%</b>	<b>100.0%</b>	<b>17.1%</b>	<b>0.0%</b>	<b>17.1%</b>	
<b>Fixed operating costs:</b>										
Indirect labor	4,666,954	(1,098,019)	-	(1,197,278)	2,371,657	-	2,371,657	(172,140)	2,199,517	2.9%
Fringe benefits	1,036,676	(250,660)	-	(270,154)	515,862	-	515,862	(27,281)	488,581	0.6%
<i>Total indirect labor and fringe benefits</i>	5,703,630	(1,348,678)	-	(1,467,432)	2,887,520	-	2,887,520	(199,421)	2,688,099	3.5%
Occupancy	2,009,425	(491,896)	-	(676,772)	840,758	-	840,758	(134,400)	706,358	0.9%
Equipment	1,050,579	(563,533)	-	(150,192)	336,854	-	336,854	(1,171)	335,684	0.4%
Operating expenses	1,145,314	(210,476)	-	(366,857)	567,980	(148,201)	419,779	(20,271)	399,508	0.5%
Burden allocation	(488,615)	84,694	-	98,180	(305,742)	-	(305,742)	-	(305,742)	-0.4%
<b>Total fixed operating costs</b>	<b>9,420,333</b>	<b>(2,529,889)</b>	<b>-</b>	<b>(2,563,073)</b>	<b>4,327,370</b>	<b>(148,201)</b>	<b>4,179,169</b>	<b>(355,262)</b>	<b>3,823,906</b>	<b>5.0%</b>
<b>Gross margin</b>	<b>8,032,667</b>	<b>(1,884,813)</b>	<b>-</b>	<b>2,563,073</b>	<b>8,710,927</b>	<b>252,107</b>	<b>8,963,033</b>	<b>355,262</b>	<b>9,318,296</b>	<b>12.1%</b>



Inventory (Demand Level SKU Analysis)

# CASE STUDY EXAMPLE 4



# INVENTORY (DEMAND LEVEL SKU ANALYSIS)

Category	Number of Months On-Hand Inventory (Based on FY12 Usage)									Last Year of Demand		Total
	0-3	3-6	6-9	9-12	12-24	24-36	36-48	48-60	>60	FY11	<FY10	
Machines	\$ 164	\$ 117	\$ 34	\$ 61	\$ 122	\$ 15	\$ 1	\$ 14	\$ 39	\$ 3	\$ 6	576
Filters	110	119	33	30	23	30	6	2	36	3	20	412
Levers	40	52	11	10	15	12	4	9	36	1	4	194
Clamps	27	25	11	30	21	9	5	3	10	-	4	145
Motors	37	27	24	36	24	1	12	1	23	3	10	198
Power Cords	7	61	23	11	19	1	-	-	4	-	2	128
Belts	41	23	11	37	27	8	4	2	10	-	4	167
Attachments	48	82	30	14	31	11	7	6	20	2	10	261
Other parts	26	7	12	3	24	2	1	1	12	3	47	138
Housings and wheels	11	6	7	10	19	3	3	-	8	1	6	74
Chemicals	22	15	2	3	8	3	-	-	2	-	10	65
Handles	5	6	1	1	2	-	1	1	12	-	6	35
Switches	3	4	7	1	2	-	-	-	2	1	1	21
<b>Grand total</b>	<b>\$ 541</b>	<b>\$ 544</b>	<b>\$ 206</b>	<b>\$ 247</b>	<b>\$ 337</b>	<b>\$ 95</b>	<b>\$ 44</b>	<b>\$ 39</b>	<b>\$ 214</b>	<b>\$ 17</b>	<b>\$ 130</b>	<b>2,414</b>
<b>Cumulative</b>	<b>\$ 2,414</b>	<b>\$ 1,873</b>	<b>\$ 1,329</b>	<b>\$ 1,123</b>	<b>\$ 876</b>	<b>\$ 539</b>	<b>\$ 444</b>	<b>\$ 400</b>	<b>\$ 361</b>	<b>\$ 147</b>	<b>\$ 130</b>	

