



COMMODITY SOFTWARE SOLUTIONS

A low-angle, upward-looking photograph of several modern skyscrapers with glass facades against a clear blue sky. The buildings are slightly out of focus, creating a sense of depth and height.

# Implementing a proven risk management strategy

Dr Robert Brady  
Founder and CTO  
Brady plc

# Introducing myself



- Former Academic and Rocket Scientist  
(Cambridge and US Office of Naval Research)
- Former Derivatives Quant
- ‘Proven risk management’ - a Quant’s view
  - Go away from the City on a cloudless night
  - Look up at the sky
  - See the Milky Way (our galaxy)
  - Contains  $10^{10}$  stars
  - \$70 for each star
  - Risk management problem solved

# Introducing Brady Plc



- Commodity Software solutions
  - integrating trading, risk, operations, logistics
- 53 clients worldwide and over 800 users
- System of choice for Market professionals
  - 50% of LME ring-dealing companies use a Brady solution
- System of choice for metal Producers & Fabricators
  - 50% of revenue

# Some challenges in Metals



- **Market professionals**
  - LME is going electronic (SMART, SELECT)
  - Enables new volume-based business models
  - Paper-based systems no longer adequate
  - “For every two new customers, I need to hire an extra back-office person”
- **Producers**
  - Industry re-structuring to a global scale
  - Stand-alone systems not integrated
  - Logistics tied in with risk management
  - “I have \$500M worth of metal ....
  - ... somewhere around the world”



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# Finance meets real transactions

Risk management Challenges in the supply chain

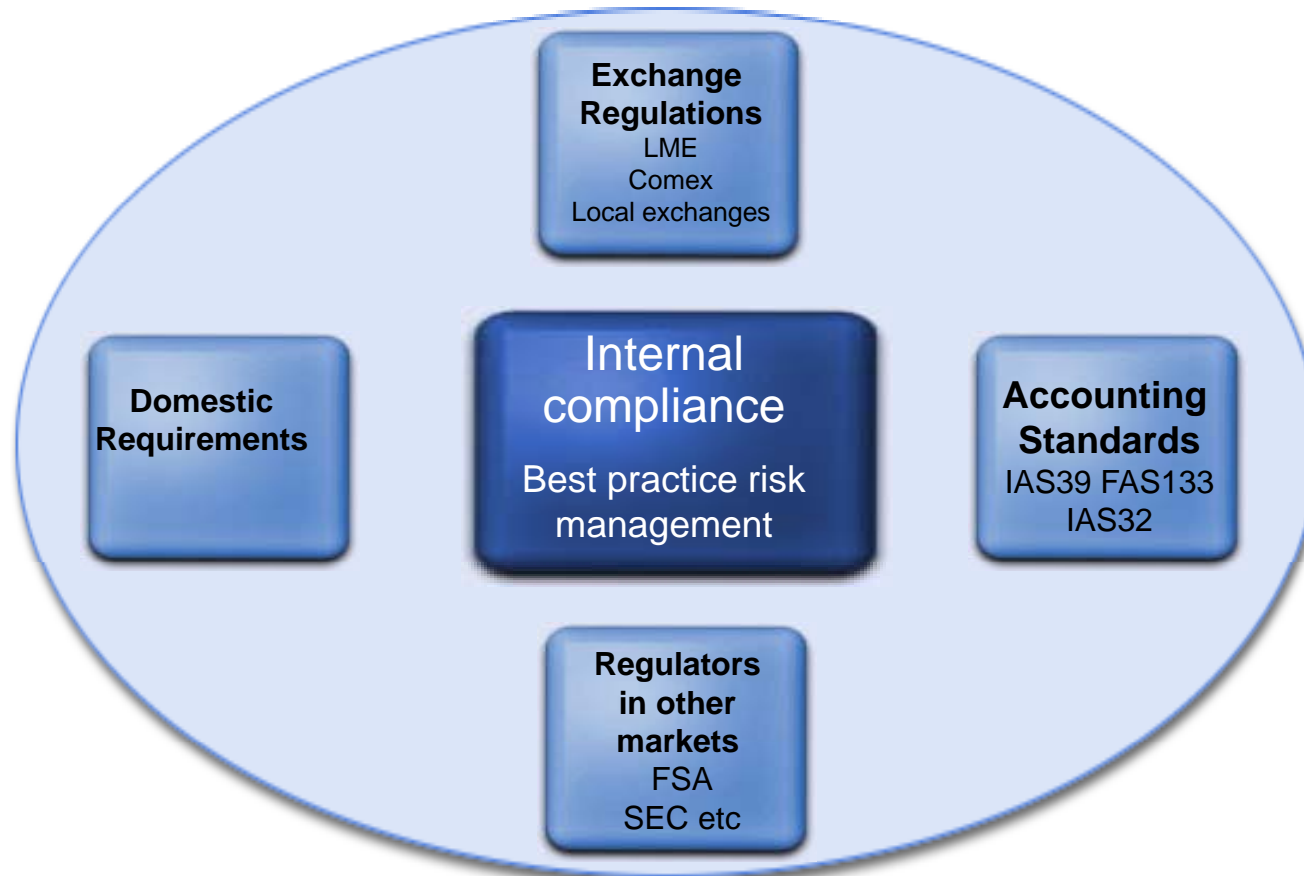
- Large percentage of value is raw material
- Need to hedge



## **Challenge 1**

### Regulation and Accounting standards

# Specific standards framework



## IAS39 standard vs risk management



Common objective: don't inadvertently have exposure to the hedge instrument

IAS adds specific tests:

Many to many linkages of hedge to physical transactions

Ability to designate & de-designate hedges

Hedge gains and loss report for IAS 39 compliant reporting

## Other accounting requirements



All transactions captured at source with comprehensive audit trail

Ability to trace all reported figures back to source within the application

Elimination of spreadsheets & other ad hoc systems

Comprehensive reporting tools to support regulatory requirements



**Challenge 2**  
Operational Risk  
“Doing More with Less”

## Typical risk management environment



### Disparate data sources

Spreadsheets  
– Databases

### Inefficient processes

Potential to streamline

### Over-reliance on key personnel

### Data entered into multiple systems

Risk of errors  
Inefficient use of time



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## Commodity Risk – key difference

Similar to risk for money

- Track daily/monthly/yearly P&L changes
- Stress testing
- Counterparty exposure
- VaR etc.

But add delivery issues

- Location, quantities, dates not fungible

# Daily P&L



BRADYCS5 Console - Citrix Presentation Server Client

Date Settings: Current 08-Apr-2008 including changes up to 08-Apr-2008

	Portfolio	Reval T (Total)	Reval T-1 (Total)	P&L (Total)
1	51000	-243,829,633.33	-69,716,540.77	-44,915,589.68
2	ACCENTURE			
3	AGRICULTURALS	44,706,844.10	-188,576,835.11	19,964,171.13
4	AKM DEFAULT	-129,024.62	-129,024.62	-0.00
5	AL - 29-06	-220,771,745.48	-165,087,048.98	-55,684,696.51
6	ALUMINIUM	-310,957,346.38	-438,925,058.25	120,599,609.16
7	ALUMINIUM AVG	98,674.52	3,523.28	95,151.24
8	ALUMINIUM PHYSICALS	82,894,360.92	40,932,699.35	26,706,340.43
9	ALUMINIUM TRADING	11,876,867.18	10,689,617.18	1,187,250.00
10	BACK2BACK	625.00	625.00	0.00
11	BAUXITE	64,010,110.03	102,844,160.71	-62,076,998.79
12	CALYON - DISCRETIONARY	-1,080,452,428.87	-1,108,283,585.12	27,831,156.25
13	COAL	1,730.00		
14	CONCENTRATES	-7,363,559.53		
15	COPPER	122,567,932.48	118,301,215.21	4,008,996.35
16	COPPER (SALES DESK)	256,773,912.82	165,586,399.82	15,312,546.00
17	COPPER 2	46,874,783.86	8,895,685.95	37,979,097.91
18	COPPER ANY			
19	COPPER AVG	1,237,896.45	41,938.13	1,195,958.32
20	COPPER CONCENTRATES	14,508,592.22	-1,066,533.19	15,575,125.41
21	COPPER CONCENTRATES NO 2	-41,314,203.42	-41,659,687.32	345,483.90
22	COPPER CONCENTRATES NO 3	165,879,800.15	62,586,070.37	103,293,729.78

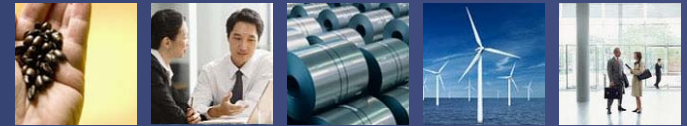
# Position Maturity Summary



Curr1 = XAL

	Metal	Maturity	tonnes (Total)	Net Forward Value (Total)
1	XAL	18-Mar-2009	1,200.00	29,688.01
2	XAL	18-Feb-2009	1,200.00	24,576.29
3	XAL	21-Jan-2009	1,200.00	19,464.58
4	XAL	17-Dec-2008	1,200.00	13,074.93
5	XAL	19-Nov-2008	1,200.00	7,963.22
6	XAL	15-Oct-2008	1,200.00	1,573.57
7	XAL	17-Sep-2008	2,200.00	1,883,494.52
8	XAL	20-Aug-2008	1,300.00	-8,649.86
9	XAL	05-Aug-2008	400.00	595,444.69
10	XAL	16-Jul-2008	1,300.00	-144,430.56
11	XAL	03-Jul-2008	200.00	16,051.12

# Position Revaluation



Portfolio = **ALUMINIUM**

	Month	Reval (Total)	Delta S (Total)	Delta F (Total)	Delta Fut (Total)	Gamma (Total)	Vega (Total)	Theta (Total)	Ic (Total)
1	Oct-2005	-290,400.00	-550.00	-550.00	-550.00	0.0	0.00	-36.30	
2	Dec-2005	-680,000.00	-1,000.00	-1,000.00	-1,000.00	0.0	0.00	-85.00	
3	Jan-2006	-445,375.00	-625.00	-625.00	-625.00	0.0	0.00	-55.67	
4	Feb-2006	-551,375.00	-1,125.00	-1,125.00	-1,125.00	0.0	0.00	-68.92	
5	Mar-2006	-1,381,375.00	1,625.00	1,625.00	1,625.00	0.0	0.00	-172.67	
6	Apr-2006	-1,124,500.00	-1,125.00	-1,125.00	-1,125.00	0.0	0.00	-140.56	
7	May-2006	40,000.00	375.00	375.00	375.00	0.0	0.00	5.00	
8	Jun-2006	-126,481,022.85	94,875.00	94,875.00	94,875.00	0.0	0.00	-15,832.94	
9	Jul-2006	-44,005,750.00	29,125.00	29,125.00	29,125.00	0.0	0.00	-5,500.72	
10	Aug-2006	-36,862,375.00	23,250.00	23,250.00	23,250.00	0.0	0.00	-4,607.80	
11	Sep-2006	-3,974,375.00	2,500.00	2,500.00	2,500.00	0.0	0.00	-496.80	
12	Oct-2006	-37,113,625.00	25,250.00	25,250.00	25,250.00	0.0	0.00	-4,639.20	
13	Nov-2006	-37,106,325.00	25,260.00	25,260.00	25,260.00	0.0	0.00	-4,638.29	
14	Dec-2006	-38,094,077.01	35,120.00	35,120.00	35,120.00	0.0	0.00	-4,761.76	
15	Jan-2007	-8,220,400.00	30,550.00	30,550.00	30,550.00	0.0	0.00	-1,027.55	
16	Feb-2007	-41,616,500.00	54,000.00	54,000.00	54,000.00	0.0	0.00	-5,202.06	
17	Mar-2007	-42,353,843.75	56,550.00	56,550.00	56,550.00	0.0	0.00	-5,294.23	
18	Apr-2007	-36,866,500.00	29,000.00	29,000.00	29,000.00	0.0	0.00	-4,608.31	
19	May-2007	-41,046,500.00	52,500.00	52,500.00	52,500.00	0.0	0.00	-5,130.81	
20	Jun-2007	-4,654,000.00	27,750.00	27,750.00	27,750.00	0.0	0.00	-581.75	
21	Jul-2007	-4,752,500.00	28,250.00	28,250.00	28,250.00	0.0	0.00	-594.06	
22	Aug-2007	-4,853,000.00	29,375.00	29,375.00	29,375.00	0.0	0.00	-606.63	
23	Sep-2007	-4,791,250.00	28,625.00	28,625.00	28,625.00	0.0	0.00	-598.91	
24	Oct-2007	-4,645,734.38	28,650.00	28,650.00	28,650.00	0.0	0.00	-580.72	
25	Nov-2007	-5,009,941.25	29,100.47	29,100.00	29,100.00	0.0	0.00	-722.04	
26	Dec-2007	-14,491,875.00	25,950.00	25,950.00	25,950.00	0.0	0.00	-1,811.48	
27	Jan-2008	-126,484.38	-1,175.00	-1,175.00	-1,175.00	0.0	0.00	-24.56	
28	Feb-2008	1,571,859.38	3,675.00	3,675.00	3,675.00	-0.0	0.00	-9.21	
29	Mar-2008	1,215,766.68	51,750.00	51,750.00	51,750.00	0.0	0.00	151.97	
30	Apr-2008	-66,118.38	375.10	375.00	373.62	0.0	0.00	-8.26	
31	May-2008	84,919,855.13	-138,239.59	-175,625.00	-174,176.38	0.0	0.00	10,614.98	
32	Jun-2008	-399,777.43	431.33	550.00	543.46	0.0	0.00	-49.97	
33	Jul-2008	122,925.55	-91.60	-175.00	-171.69	0.0	0.00	15.37	
34	Aug-2008	201,021.91	-291.68	-375.00	-367.50	0.0	0.00	25.13	
35	Sep-2008	200,287.89	-290.61	-375.00	-366.16	0.0	0.00	25.04	
36	Oct-2008	200,614.38	-289.06	-375.00	-364.75	0.0	0.00	25.08	
37	Nov-2008	199,643.66	-287.66	-375.00	-362.99	0.0	0.00	24.96	
38	Dec-2008								
39	Jan-2009								
40	Feb-2009								
41	Mar-2009								
42		23,105,580.60	9,095.75	9,095.75	9,095.75	0.0	0.00	-42,506.50	

# LME Market Card



Commodity: XSN  Square Card Total Position: 7346.5 Data: Current  
 Exchange: <ALL>  Units: metric tonnes

<b>Forward</b>	<b>Position</b>
Start Date	Avg. Cumulative
<input type="text"/>	<input type="text"/>
Forward	Maximum
<input type="text"/>	<input type="text"/>
End Date	Minimum
<input type="text"/>	<input type="text"/>
Forward	Total Long
<input type="text"/>	<input type="text" value="7696.5"/>
Average	Total Short
<input type="text"/>	<input type="text" value="-350"/>
Spread	Total Cumulative
<input type="text"/>	<input type="text" value="7346.5"/>
<b>Stock</b>	<input type="button" value="Graph"/>
Amount	<input type="button" value="Close"/>
<input type="text" value="596.5000"/>	

## Daily Breakdown

	Day	Jul-08 Net Pos +	Jul-08 Net Pos -	Jul-08 Cum Pos	Day	Aug-08 Net Pos +	Aug-08 Net Pos -	Aug-08 Cum Pos	Day	St No
	1	3,596.50		3,596.50	1			4,346.50	1	
	2			3,596.50	2			4,346.50	2	
	3			3,596.50	3			4,346.50	3	
	4			3,596.50	4			4,346.50	4	
	5			3,596.50	5			4,346.50	5	
	6			3,596.50	6			4,346.50	6	
	7			3,596.50	7			4,346.50	7	
	8			3,596.50	8			4,346.50	8	
	9			3,596.50	9			4,346.50	9	
	10			3,596.50	10			4,346.50	10	
	11			3,596.50	11			4,346.50	11	
	12			3,596.50	12			4,346.50	12	
	13			3,596.50	13			4,346.50	13	
	14			3,596.50	14			4,346.50	14	
	15			3,596.50	15			4,346.50	15	
	16	1,100.00		4,696.50	16			4,346.50	16	
	17		-100.00	4,596.50	17			4,346.50	17	
	18		-100.00	4,496.50	18			4,346.50	18	
	19			4,496.50	19			4,346.50	19	



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