



CANDEAL

Electronic Trading in OTC Markets:
A Risk Management Windfall
PRMIA, Toronto
February 18, 2009

WHERE THE MARKET COMES TO TRADE



Agenda

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- OTC Markets
- Electronic Trading
- Risk Management Opportunities
- Trade Life-Cycle
- Trade Record
- What Can I Do Today?



OTC Markets

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1. Market Structure
 - Principal-based trading
2. Opaque
 - Lack of information
 - Confidential interactions
 - Incomplete trade records
3. Dynamic
 - Volatile
 - Leveraged positions
 - Inconsistent liquidity
 - Correlated trading
4. Operational Challenges
 - Latency
 - Redundancy & Human Error
 - Backward-looking Risk Management processes
5. Malfeasance
 - Opportunity, means and motivation
 - Burden on Risk Managers to protect individuals from themselves



Electronic Trading

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- Paradigm shift impacts organizations at all levels:
 - Trading
 - Governance
 - Operations
 - Infrastructure
 - Resources
 - Strategy
- Globally adopted by multiple-asset groups:
 - Equities
 - Fixed Income
 - Futures & Options
 - Foreign Exchange
 - Money Market
 - Swaps
- Tangible Benefits:
 - Performance
 - Productivity
 - Efficiency
 - Risk Management
 - Compliance
 - Settlements

WHERE THE MARKET COMES TO TRADE



Risk Management Opportunities

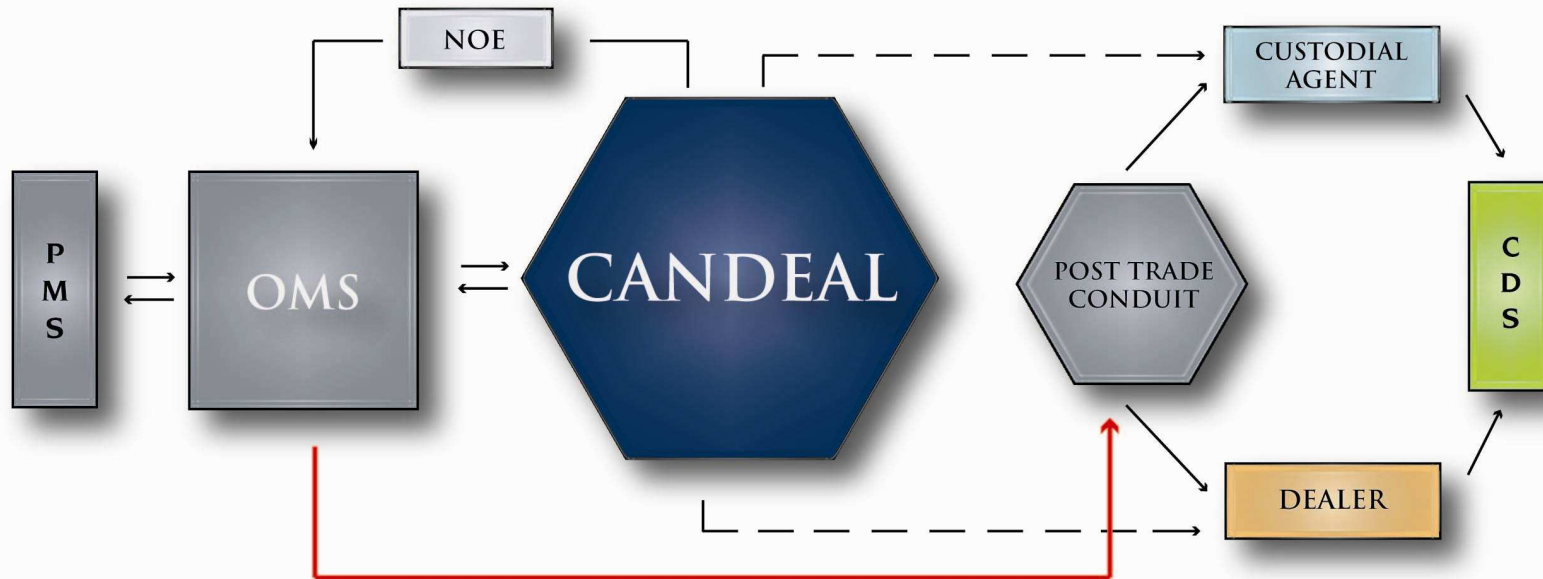
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- Crystallize trades at Point of Execution
- Contain the dealing environment
- Move processes forward into real-time
- Introduce Post-trade Review



Trade Life-Cycle

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WHERE THE MARKET COMES TO TRADE



Price Discovery

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- **Composite Price Screen**
 - Aggregates mark-to-market prices
 - Validated by institutional trades
- **Commingled Offering Page**
 - Displays dealer offering levels
- **Weighted Average Yield Page**
 - Calculated from dealer offerings
 - Sorted by Rating and Maturity



Composite Prices Screen

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TW CanDeal Canada Bonds (COMPCAN1) (phitw-Tradeweb) TradeWeb W7.05VS USDEMO1

1.5Sec One Sec myBESTX C\$0 USDEMO1

CanDeal Canada Bonds 0-4 Year

Yield PrcChg Sprd SprdChg

PROV	Iss	Coupon	Mty	Price	Yield	Iss	Coupon	Mty	Price	Yield
CAN	CAN	4.250	D08	100.056-060	1.953-810	CAN	4.000	910	103.557-578	1.951-940
US	CMB	4.100	D08	100.115-124	2.223-089	CMB	3.550	910	102.076-103	2.373-358
TRSY	CAN	11.500	309	102.658-687	1.855-755	CAN	8.750	010	112.323-391	1.967-933
MBS	CMB	3.550	309	100.475-486	2.035-000	CAN	2.750	D10	101.656-669	1.913-907
AGCY	CAN	3.750	609	101.012-021	1.812-795	CAN	9.000	311	115.385-422	2.045-030
CORP	CAN	5.500	609	101.923-937	1.818-792	CMB	4.050	311	103.425-447	2.516-507
CONV	CAN	11.000	609	104.798-831	1.814-754	CAN	6.000	611	109.669-692	2.054-045
IRS	CAN	4.250	909	101.900-906	1.772-764	CAN	8.500	611	115.793-847	2.055-035
CDS	CMB	4.650	909	102.098-107	2.038-027	CAN	3.750	911	104.145-168	2.202-193
CP	CAN	10.750	009	107.624-657	1.771-735	CMB	4.600	911	105.170-207	2.680-666
ADN	CAN	4.250	D09	102.447-456	1.834-825	CMB	3.950	D11	103.399-442	2.782-768
REPO	CAN	9.750	310	109.800-882	1.934-873	CAN	3.750	612	104.349-364	2.452-448
Europe	CMB	3.750	310	101.993-013	2.202-187	CAN	5.250	612	109.388-415	2.449-442
EUGV	CAN	3.750	610	102.737-747	1.923-916	CMB	4.000	612	103.497-497	2.957-957
COVRD	CAN	5.500	610	105.350-367	1.928-917	CMB	4.800	612	106.161-181	2.962-956
SUPRA	CAN	9.500	610	111.342-381	1.928-903	CMB	4.550	D12	105.540-566	3.086-080
IRS		2 yr		101.656-669	1.913-907	10 yr			105.903-946	3.515-510
CDS		5 yr		103.612-641	2.647-640	30 yr			115.278-369	4.088-083

Main OTR Bills Swaps Prov **TRA** 4-30 CAN COMM

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WHERE THE MARKET COMES TO TRADE



Commingled Offerings

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TW (CMM) (philw-Tradeweb) TradeWeb W7.05VS USDEMO1

myBESTX C\$29,800
USDEMO1

CanDeal Canadian Money Market (CMM)

View: CMM Defau Offerings: 95 Filter: Issuer

Maturity: 1-15 29-32 43-47 60-61 90-91 120-125 180-200 0 0 1->95

Quantity	Dealer	Issuer	Maturity	Yield	SD	DBRS	Sec Type
7,000	CIBC	PACCAR FINANCIAL LTD	12/08/08	4.32		R1M	CP
15,000	TDS	FB FUNDING COMPANY	12/08/08	4.33		R1M	CP
20,000	CIBC	SOUND TRUST	12/08/08	4.33		R1H	CP
21,000	CIBC	CUC ONTARIO	12/08/08	4.35		R1L	CP
50,000	TDS	US BANK NA	12/08/08	4.33		R1H	CP
2,473	RBC	RBC BA	12/09/08	4.28		R1H	BA
5,000	CIBC	HSBC BA	12/09/08	4.32		R1H	BA
25,400	RBC	BMO BA	12/10/08	4.29		R1H	BA
75,000	RBC	RBC BA	12/10/08	4.29		R1H	BA
10,000	BCI	BANK OF AMERICA NA BA	12/15/08	4.29	3	R1H	BA
11,000	CIBC	JP MORGAN CHASE BANK NA BDN	12/15/08	4.33		R1M	BDN
12,000	CIBC	SHELL CANADA LIMITED	12/15/08	4.31		Other	CP
12,000	CIBC	TERASEN PIPE (CORRIDOR)	12/15/08	4.32		R1L	CP
13,000	BCI	DEUTSCHE BANK AG BA	12/15/08	4.29	3	Other	BA
13,000	BCI	BNP PARIBAS CANADA BA	12/15/08	4.29	3	Other	BA

Sort: All Offerings On Configure

Offerings Main Issuer List Mat Mon CMM Rates QuickTkt CMM RFQ COMM

Securities loaded.

Up 16:16:46 IFR US GOVTS: TradeWeb Recap - Only Bills and Bond See Decent Flow

ALL
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WHERE THE MARKET COMES TO TRADE



Composite Rates Screen

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TW (CAMMVM) (pwright4-Tradeweb) TradeWeb W7.05VS

Main Lists Blot Book Msg Pmon Pref Admin Window Print Help AXE

1.5Sec One Sec myBESTX C\$0

Favorites
MBLOT
Canada
CAN GVT
PROV
CAMM

Select Issuer List: All Issuers

Rating	Maturity	Size	WAY	Prior WAY	WAY Diff	High	Low
	25 to 45	1,760,361	2,240	2,350	-0.110	2,720	2,000
US							
TRSY	R1H 46 to 79	1,358,000	2,220	2,350	-0.130	2,800	1,750
MBS	80 to 105	1,424,000	2,230	2,380	-0.150	2,850	1,750
AGCY	106 to 199	308,000	2,170	2,370	-0.200	3,380	1,700
IRS	200 to 366	150,000	2,400	2,330	0.070	2,450	2,290
CORP	1 to 7	5,000	2,430			2,430	2,430
CONV	8 to 24	78,000	2,660	2,650	0.010	3,000	2,500
CDS	25 to 45	139,000	2,790	2,480	0.310	3,250	2,480
CP	R1M 46 to 79	156,000	2,830			3,300	2,530
ADN	80 to 105	181,000	2,620			3,350	2,050
REPO	106 to 199						
Europe	200 to 366						
EUGV	1 to 7	27,000	2,920			3,100	2,700
COVRD	8 to 24	142,000	2,640	3,000	-0.360	3,050	2,500
SUPRA	25 to 45	71,000	2,880	2,870	0.010	3,100	2,700
IRS	R1L 46 to 79	128,000	2,780	2,750	0.030	2,950	2,650
CDS							
EUCR							

Offerings Main Issuer List Mat Mon CAMM Rates QuickTkt CAMM RFQ COMM

Up ALL AXE Dn

WHERE THE MARKET COMES TO TRADE



Trade Execution

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1. Request For Quote (RFQ) Model

- Live multi-dealer auction
- Simultaneous not sequential
- Suitable for liquid securities

2. Inventory-based Model

- Commingled display of dealer offerings
- Negotiate one-on-one with dealer
- Suitable for off-the-run instruments



Trade Ticket

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TW (TKT) (philw-Tradeweb) TradeWeb W7.05VS USDEMO1

myBESTX C\$29,800
USDEMO1

YOU BUY CAN 4.250 06/01/18 10yr CUSIP: 135087YL2 Flip Buy/Sell

Current Quote 105.920 -967 6- 5 3.513-507 BUY

Quantity (m) 10,000
Price 105.967
Yield 3.507
Settlement Date 11/24/2008 T+3

Request Offer

Account #Accts 1 Id PIN TO ALL

Add To BOOK Send Cancel

Up 16:16:46 IFR US GOVTS: TradeWeb Recap - Only Bills and Bond See Decent Flow

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WHERE THE MARKET COMES TO TRADE



LIVE Dealing Screen

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BUY 10,000 CAN 2.750 12/01/10 2yr ON 11/24/08

Current Quote: 101.783 -795 1.846-840 **CUSIP: 135087YPS** 0:08
Submitted Quote: 101.794 1.841

Trd	Dlr	State	Quantity	Yld(strt)	Price	Action	End	Time
32	TDS	Dlr-Quote	10,000	1.826	101.824	LIFT	END	0:04
32	SCI	Dlr-Quote	10,000	1.811	101.854	LIFT	END	0:04
32	RBC	Dlr-Quote	10,000	1.841	101.794	LIFT	END	0:02
32	CIBC	Dlr-Quote	10,000	1.846	101.784	LIFT	END	0:04

Dealer: _____ Message: _____

Ln Up
Ln Down

Send MSG To: ALL _____

END TRADING

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WHERE THE MARKET COMES TO TRADE



Trade Record

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- Electronic Trade Blotter – for any date
- Transaction Detail – all you need
- Transaction RECAP – trade snap-shot
- Transaction History – trade time-line
- Transaction Summary - online report



Trade Blotter

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TW (BLOT) (philw-Tradeweb) TradeWeb W7.05VS USDEMO1

Main Lists Blot Book Msg Pmon Pref Admin Window Print Help AXEIt

2Sec CAN 8.750 10/01/10 CAN 2.750 12/01/10 2yr myBESTX C\$80,523 USDEMO1

Favorites Trade Blotter

Canada

CAN GVT Product ALL Dealer ALL All TW Phone Update

PROV

CAMM Date 11/19/2008 - + State Acc Filter ALL Page 1 of 1

US

Trd	State	Dir	B/S	Quantity	Security-Description	Price/Yield	Settle	Time
TRSY	3 Acc	BMO	BUY	31,404	CAN 2.750 12/01/10 2	101.562/ 1.960	11/21/2008	16:34:14
MBS	2 Acc	BMO	SELL	32,000	CAN 8.750 10/01/10	112.387/ 1.935	11/21/2008	16:34:14
AGCY	8 Acc	CIBC	BUY	25,000	PACCAFIN 11/24/08	99.940/ 4.35	11/19/2008	16:33:12
CORP	3 Acc	CIBC	BUY	10,000	CAN 6.000 06/01/11	109.632/ 2.068	11/21/2008	16:25:41
CONV	2 Acc	RBC	SELL	8,000	CAN 6.000 06/01/11	109.749/ 2.023	11/21/2008	16:25:18
IRS	1 Acc	DESJ	BUY	25,000	CAN 2.750 12/01/10 2	101.559/ 1.962	11/21/2008	16:21:59

CDS
CP
ADN
REPO

Europe

EUGV
COVRD
SUPRA
IRS
CDS
EUCR
ECP

MBlot TrdXprs Summary Download C Customer Pg Up Pg Dn

Trades loaded. Help

WHERE THE MARKET COMES TO TRADE



Trade Detail

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Test Trade Detail - CanDeal

myBESTX C\$20,000
USDEMO1

State	Accepted	Trade Date	11/19/2008	Company	Tradeweb	
PROV	Dealer DESJ(NI)/4	Settlement	11/21/2008	Customer	Phil Wright	
CAMM	Trade # 1	Time	16:21:59-16:22:09	LogonID	philw	
US				Sales		
TRSY	Buy	Issue	CAN 2.750 12/01/10 2yr			
MBS		Cusip	135087YP3 CAN			
AGCY		Quantity(m)	25,000			
CORP		Price	101.559 CAD			
CONV		Yield	1.962			
IRS						
CDS						
CP						
ADN		Principal	25,389,750.00			
REPO		Accrued / Days	325,856.16 / 173			
Europe		Net	25,715,606.16			
EUGV						
COVRD						
SUPRA		Customer Confirm ?	Cover Quote 101.639	Customer Account		
IRS		Dealer Confirm ?	Trader a trader	#Accounts	1	
CDS		Description				
EUCR		Detail	Tran	Brkdn	Msg Trade	Recap
ECP						

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WHERE THE MARKET COMES TO TRADE



Transaction RECAP

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Trade Recap

Trade Date: 11/19/2008 Trade Time: 16:21:59 EST

BUY: CAN 2.750 12/01/10 2yr 25,000 ON 11/21/2008

Composite Quote: 101.656 -669 1.913-907 CUSIP: 135087YP3 **0:09**

Submitted Quote: 101.669

Trade	Dlr	State	Quantity	Yld(strt)	Price	Action	End	Time
1	TDS	Dlr-Quote	25,000	1.922	101.639	LIFT	END	0:02
1	RBC	Dlr-Quote	25,000	1.922	101.639	LIFT	END	0:02
1	CIBC	Dlr-Quote	25,000	1.917	101.649	LIFT	END	0:02
1	DESJ	Accepted	25,000	1.962	101.559			0:05

BESTX: CAD 20,000.00.

Detail Tran Brkdn

Up 16:16:46 IFR US GOVTS: TradeWeb Recap - Only Bills and Bond See Decent Flow

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WHERE THE MARKET COMES TO TRADE



Transaction History

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Transaction History

myBESTX C\$20,000
USDEMO1

CAN GVT	State Accepted	Trade Date 11/19/2008	Company Tradeweb
PROV	Dealer DESJ(NY)/4	Settlement 11/21/2008	Customer Phil Wright
CAMM	Trade # 1	Time 16:21:59-16:22:09 EST	LogonID philw
US	Issue CAN 2.750 12/01/10 2yr		Test Trade Yes

TRSY 101.669

MBS	16:21:59.640 Trade sent: Buy 25,000 @ 101.669 stl: 11/21/2008
AGCY	COMP:101.669
CORP	16:21:59.706 Trade received by Dealer
CONV	16:22:07.175 Dealer Quote received: Good for 6 secs
IRS	16:22:07.234 Quote received by Customer: 25,000 @ 101.559/ 1.962
CDS	16:22:08.453 Customer LIFTS offer
CP	DESJ:25,000 @ 101.559, COMP:101.669, TDS:25,000 @ 101.639
ADN	RBC:25,000 @ 101.639, CIBC:25,000 @ 101.649
REPO	16:22:08.472 Customer response received by Dealer
Europe	16:22:09.222 Dealer ACCEPTS trade
EUGV	16:22:09.250 Dealer response received
COVRD	16:22:09.375 Trade confirmation sent
SUPRA	DESJ:25,000 @ 101.559, COMP:101.669, TDS:25,000 @ 101.639
IRS	RBC:25,000 @ 101.639, CIBC:25,000 @ 101.649
CDS	16:22:09.422 Dealer ACCEPT received by Customer

EUCR Detail Tran Broken Recap Ln Up Ln Dn Pg Up Pg Dn
ECP

Up 16:16:46 IFR US GOVTS: TradeWeb Recap - Only Bills and Bond See Decent Flow

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WHERE THE MARKET COMES TO TRADE



Transaction Summary

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TW (BLOTSTATS) (philw-Tradeweb) TradeWeb W7.05VS USDEMO1

Main Lists Blot Book Msg Pmon Pref Admin Window Print Help AXE

myBESTX C\$80,523
USDEMO1

Blotter Summary

From: 11/19/2008 To: 11/19/2008 Product: All

Dealer	Inq	Inq Vol	Acc Trd	Acc Vol	Hit%	* BESTX	Tied	Cover	Pass	Ended
BMO	3	73,404	2	63,404	67	50,723	0	1	0	0
CIBC	4	68,000	2	35,000	50	5,000	0	1	0	0
DESJ	1	25,000	1	25,000	100	20,000	0	0	0	0
NBF	3	71,404	0	0	0	0	0	0	0	0
RBC	5	106,404	1	8,000	20	4,800	0	1	0	0
SCI	2	63,404	0	0	0	0	0	2	0	0
TDS	3	43,000	0	0	0	0	0	2	0	0
User	6	131,404	6	131,404	100	80,523				0

*BESTX is the savings between the proceeds at the accepted price and the cover price
Hit% is accepted trades as a percentage of completed inquiries

1 of 1 PgUp PgDn

Up 16:43:18 IFR CAD BRIEFING: Loonietics Looking For Asylum
ALL 16:16:46 IFR US GOVTS: TradeWeb Recap - Only Bills and Bond See Decent Flow
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WHERE THE MARKET COMES TO TRADE



What Can I Do Today?

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1. Crystallize trades in a Trade Record
2. Develop a policy for e-Trading
3. Integrate Systems Infrastructure
4. Introduce a Trade Review process