

Providing Industrial Strength Analysis in a Real-Time Trading Environment

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Graham Mansfield, Managing Director, Kalahari



COMPANY OVERVIEW

For more than 20 years, Kalahari has been delivering real-time analytics to trading rooms around the world. As a global provider of real-time price discovery, analytics and data publishing software, Kalahari’s products are tailored for financial market professionals working in the money market, foreign exchange, fixed income, emerging and energy markets. Kalahari’s products are trusted by some of the world’s leading banks, inter-broker dealers, utility companies, corporations and other trading institutions – driving trading decisions across the markets. Clients include some of the world’s global financial players including KBC, Bank Of Montreal, BayernLB, ICAP, FTSE, and Tullett Prebon.

KALAHARI AND FINCAD – PARTNERS SINCE 1997

Kalahari has enjoyed a long and fruitful partnership with FINCAD since 1997. In fact, Kalahari was FINCAD’s first alliance partner. “Over the years of working with FINCAD, there has been mutual trust and respect between our companies,” said Graham Mansfield, Managing Director of Kalahari. “I believe part of what adds to the longevity of our partnership is that FINCAD has incorporated our feedback and requests for additional instrument cover-

age allowing us to meet the evolving needs of our clients. It’s great when you can achieve this type of symbiotic relationship.”

FINCAD’s derivatives pricing library is embedded in Kalahari’s flagship product, kACE²™ (Kalahari Advanced Calculation Environment), an analytics production platform for use across the enterprise. kACE²™ is designed to create an integrated solution to replace the diverse applications and calculation methodologies that crowd the typical financial institution. Using one common framework, its powerful and robust analytics production environment allows technical and non-technical professionals in various business roles and units to combine their knowledge and expertise to roll-out advanced pricing solutions.

THE NEED

To price specific instruments, a typical trading floor employs a mix of software programs and tools provided by its IT department and various data vendors and third-party specialists. However, trying to support and control these various systems proves often difficult and expensive for IT departments to maintain, particularly the management of spreadsheets due to their inherent operational risks, from user errors to lack of version control.

Kalahari wanted to provide a way for their

customers to take control of their financial instrument pricing technology. The company developed a real-time price discovery system that sought to meet the needs of its customers, including:

- Coverage for a wide range of multi-asset financial securities
- A standard calculation platform that could be applied to an entire trading room or specific trading desks
- A customizable solution that could easily integrate with other systems
- A solution that enabled developers to build systems in a rapid development environment using drag and drop graphical capabilities
- A solution that would help satisfy regulatory authorities, such as MiFID in the EU, regarding source control of the models used
- A solution that met the needs of both traders and IT personnel

As part of their real-time price discovery system, Kalahari wanted to provide its clients access to a comprehensive set of industry standard financial analytics with coverage for OTC derivatives and fixed income instruments. Since this would require significant development time, resources and costs to build the financial models in-house, Kalahari sought to partner with a third-party vendor who specializes in the provision of industry standard financial analytics.

THE FINCAD SOLUTION

The company chose to partner with FINCAD, integrating the FINCAD Analytics library in kACE^{2™} very early on its development cycle for three primary reasons:

1. FINCAD Analytics were widely accepted and trusted in the marketplace.

When Kalahari first partnered with FINCAD in 1997, FINCAD Analytics were widely used and accepted in the marketplace. Since that time, FINCAD has continued to build on this reputation by continually expanding and evolving its analytics library with feedback and input from clients and partners. Today, over 4,000 organizations use FINCAD Analytics in more than 80 countries. In addition, over 70 FINCAD Alliance Partners embed FINCAD Analytics within their solutions.

2. FINCAD Analytics contained comprehensive coverage.

FINCAD's comprehensive cross-asset coverage was important for Kalahari as it allowed them to provide their clients the same coverage for a wide range of financial securities including OTC derivatives and fixed income instruments, including the yield curves, date handling and par swap functions. "FINCAD's extensive math library has come in useful as our clients can take advantage of everything from simple bond functions to more exotic options," said Mansfield. "Incorporating FINCAD Analytics in kACE^{2™} has saved us tremendous amount of time and money by not having to build the models ourselves."

3. FINCAD Analytics could be easily integrated in the kACE^{2™} platform.

With complementary technologies (the FINCAD analytics library was available in the same programming and development environments as kACE^{2™}), this made it easy to integrate the FINCAD functions (refer to the Technology section for more details on the kACE^{2™} environment). FINCAD Analytics are applied consistently across functions, which makes it easy for

Bond Definition

ShortName	THA 6H APR03	Ex_Dividend	7 working days (UK Gilt)
Coupon	6.5000	ExDividendDays-UK	0.00
CountryConvention	Generic bond	YieldMethod-GER	1 use ISMA yield
Frequency	1 annual	BondType-FR	1 Dat
Accrual	1 actual/365 (fixed)	BondType-IR	1 annual
BusinessDay	compounded otherwise	RedemptionValue-ITL	100.00
DatedDate	23 Apr 1993	OddFirstCoupon	23 Apr 1994
CouponDateAfterDate	23 Apr 1994	OddLastCoupon	23 Apr 2003

Settle: 27 Jun 2001
 DeliveryDate: 10 Sep 2001
 DelivDays: 75
 Contract: 1 i

CTD Index: 1
 CTD Yield Shift: 30.152
 Shifted CTD Yield: 7.0431
 Shifted Price: 99.50

	Bid	Ask	Mid	Select	Ref.
Bond Future	100.00	101.00	100.50	Mid	100.00

	ISIN	Maturity	Price	BMPrice	PriceShift	P. Factor	Imp Repo	Yield	Shifted Y	Shifted P
1	DE0001134898	22 Apr 2003	100.00	0.00	50.00	1.0000	-2.0771	6.7416	7.0431	99.48
2	DE0001090033	23 Apr 2003	100.00	0.00	50.00	1.0000	-2.0895	6.4822	6.7837	99.50
3	DE0001141273	19 May 2003	100.00	0.00	50.00	1.0000	-2.1843	4.5018	4.8033	99.45
4	DE0001090041	11 Jun 2003	100.00	0.00	50.00	1.0000	-2.0713	6.8697	7.1712	99.47
5	DE0001090058	09 Jul 2003	100.00	0.00	50.00	1.0000	-2.0829	6.6311	6.9327	99.43
6	DE0001134906	15 Jul 2003	100.00	0.00	50.00	1.0000	-2.0883	6.5041	6.8056	99.42
7	DE0001141281	26 Aug 2003	100.00	0.00	50.00	1.0000	-2.2198	3.7503	4.0518	99.38
8	?	#na	0.00	0.00	50.00	0.0000	0.0000	0.0000	0.0000	0.00
9	?	#na	0.00	0.00	50.00	0.0000	0.0000	0.0000	0.0000	0.00
10	?	#na	0.00	0.00	50.00	0.0000	0.0000	0.0000	0.0000	0.00

A sample Bond page in kACE^{2™}

Component Properties for SwapStrip

- 0. par swap rate list
- 1. value (settlement) date
- 2. interest rate swap value table
- 3. structure
- 4. interpolation method
- 5. exchange of principal
- 6. margin above or below a floating rate
- 7. FX spot - pay / receive
- 8. business day convention (see Glossary) - pay leg
- 9. direction for date generation - pay leg
- 10. cash flow frequency - pay leg
- 11. odd date list - pay leg
- 12. accrual method - pay leg
- 13. holiday list - pay leg
- 14. notional principal - pay leg
- 15. discount factor curve - pay leg

Format Reference As: Source Target

Modifiers: Truncate at 1st zero Enforce Reference Allow Zeros Ignore Dependency Skip Zeros

Reference: Del(Date,1,100,(Currency))

Properties of a component using the FINCAD swap function in kACE^{2™}

developers to use and learn. "Unlike other analytics providers, FINCAD is the only one that applies its functional model consistently across all financial functions," said Gautam Dixit, Chief Technology Officer at Kalahari. "For our company to be able to offer a structured and easily implementable model, this is an absolute must!"

BENEFITS

kACE^{2™} incorporates a structured modeling technique, which makes it extremely flexible and reusable. Within the system, spreadsheets and functions are treated as objects that can be added to a model tree, ready-to-use without having to rebuild the whole application. The

Case Study *continued*

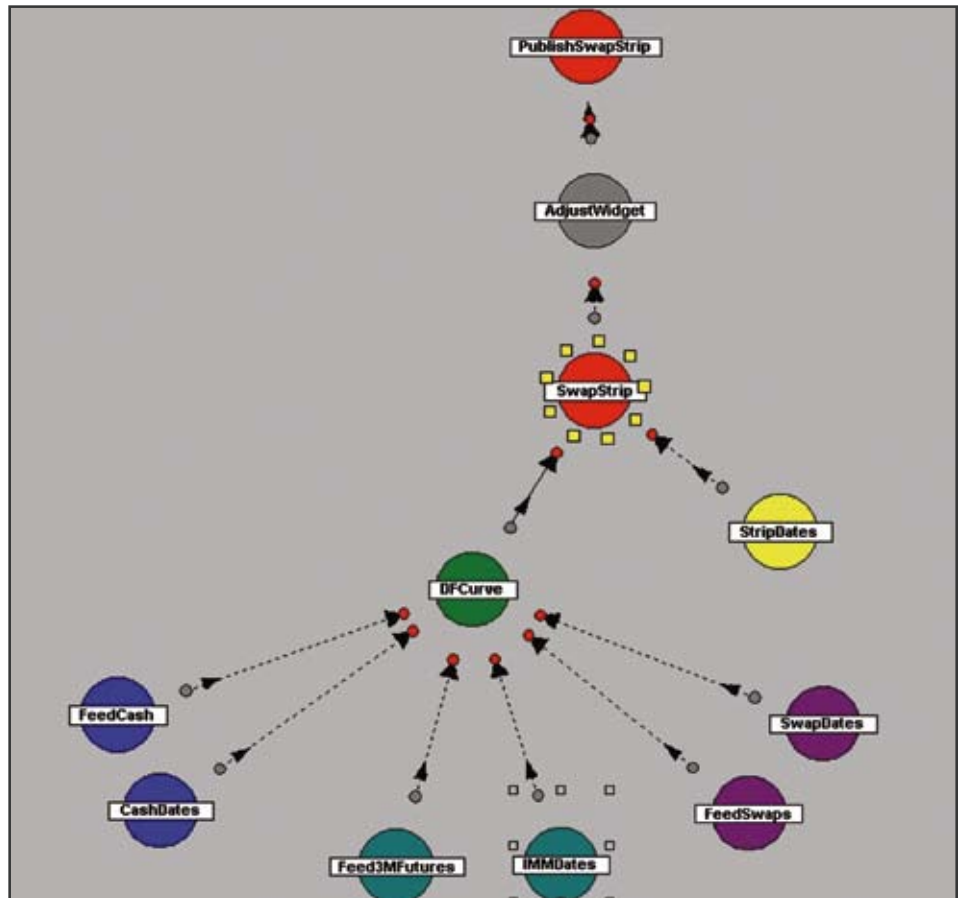
system's drag and drop functionality enables programmers to save significant time by not having to code.

An important component of kACE^{2™} is that it allows developers to integrate third-party and in-house pricing libraries as well as Excel models. The broad spectrum of calculations covered within kACE^{2™} means that only one system is needed and all calculations are routed through it. This allows tightly controlled management of the way traders price their deals, leading to better accuracy and reducing risk. FINCAD provides the key third-party pricing library that is embedded in kACE^{2™} with its ready-to-use, industry standard analytics.

"By partnering with FINCAD, we are able to provide our clients access to timely, accurate and proven derivatives valuation and risk assessment tools," said Mansfield. "In addition, FINCAD Analytics are backed with comprehensive documentation of the models and methods used, providing our clients the transparency they need to meet investor scrutiny and regulatory requirements such as MiFID."

TECHNOLOGY

kACE^{2™} is a Microsoft® Windows product and runs on all major market platforms, with real time data being collected by the system. kACE^{2™}'s underlying program is written in C++, and it exposes VB, Java and COM



A sample model of a discount factor curve in kACE^{2™}

objects, enabling developers to build distributed applications. Developers can use Microsoft XL formulas, JavaScript, Visual Basic Script as objects, and their application is network enabled using TCIP addressing. kACE^{2™} can

be run as a client/server or peer-to-peer application. kACE^{2™} is embedded with FINCAD's industry standard financial analytics through FINCAD Analytics Suite for Developers.

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