Loan PRICING **ACCELERIS** FACT SHEET

BRINGING PRECISION AND CONTROL INTO YOUR LENDING PROCESS



Loan PRICING ACCELERIS

Our solution provides a fully controlled, high precision and efficient process for loan **rating** and **pricing**. It first calculates a accurate client *rating* grade and corresponding *PD*. Then, the loan pricing is calculated based on the PD and incorporating *LGD*, *EAD*, *financial* and *operational* costs and detailed *transaction characteristics*

Additionally, client and loan performance status is tracked to permit an effective management of assets and clients

CONFIGURATION TO BANK'S PORTFOLIO

Loan PRICING **ACCELERIS** can be configured to the bank's portfolio of lending assets, permitting the **rating** and **pricing** management of any type of credit exposure including retail, SME, project finance and corporate

Features that can be configured include:

- Credit rating factors and weights specific to the loan type and segment
- Risk parameters: Rating/scoring model, PD, LGD, EAD and capital calculations
- Cost structure: funding costs, operational costs, capital cost and more
- Income structure: loan balance projection and interests, fees and more
- Loan and client life cycle workflow

VALUABLE RISK MANAGEMENT OUTPUTS

Loan PRICING ACCELERIS provides multiple valuables risk management metrics:

- End-to-end web platform for loan origination, rating, PD calculation, pricing and post approval facility management
- Loan rating grade and PD
- Loan pricing: spread and reference rate
- Transaction profitability: RAROC, expected loss, interest rates paid, present value from economic and accounting views, transaction cost structure and more
- Audit trail of client and loan life cycle status evolution
- Model validation data for the backtesting of PDs, evaluation of loan pricing precision, rating/scoring models validation and recalibration and more
- Loan portfolio's ratings, PDs, LGDs and EADs for capital requirement calculations
- Strategic reports defined based on two sources:
 - Portfolio composition: reports on any information captured or calculated during the rating and pricing including ratings, statuses, expected loss, profitability metrics (NPV, average RAROC and other) and so on
 - Log of actions: reports on the activity and/or activity quality by user/group.
 For instance, the number of loans transacted by user/group, or the average
 PD assigned by user/group, or the number of rating iterations by user

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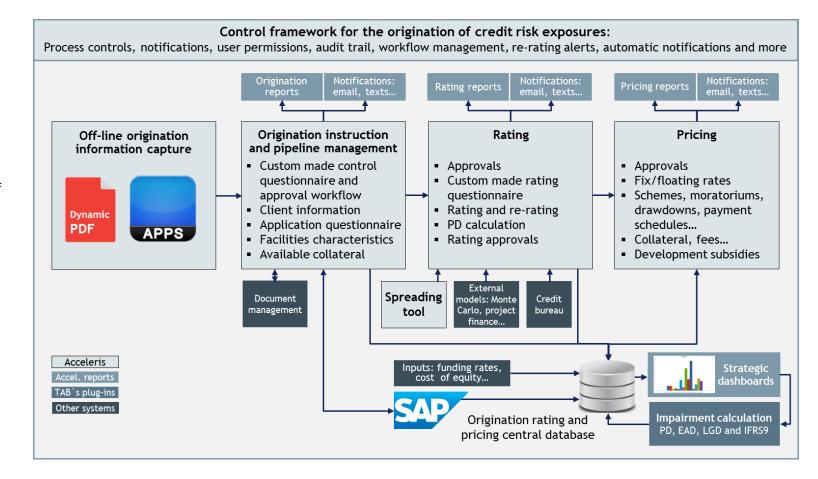


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End to end loan management system

Loan PRICING **ACCELERIS** provides a flexible framework to manage any type of loans in an organization:

- Origination: front-end permitting to capture all data to trigger the loan application, on-line and off-line, for submission
- Credit rating: fully flexible module to define rating, rerating and PD calculation processes for any type of loan
- Loan pricing: fully flexible module to risk based price any type of loan, including debt, guarantees, equity and so on
- Strategic dashboards: portfolio composition, credit analysts and risk department performance, credit risk parameters and other defined by user dashboards
- Loan approval documentation: generation of rating and pricing reports for loan submission
- Origination to disbursement workflow: definition of workflow, controls and approvals for the deal origination pipeline until the actual disbursement
- Control framework: notifications, user permissions, audit trail, automatic alerts and notifications, workflow permitting to manage facilities all along its life cycle: under review, life, default, quarantine, workout and so on



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THE ANALYTICS BOUTIQUE Accelerating your analytics

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Loan PRICING ACCELERIS

Loan PRICING **ACCELERIS** provides a highly flexible environment to create credit rating and loan pricing questionnaires, adapting these to the internal control and management processes and culture. The rating results is translated into PD and fed into the pricing module with the rest of the transaction structure to determine a loan pricing that is consistent with the borrower risk and institution's cost structure and profitability targets

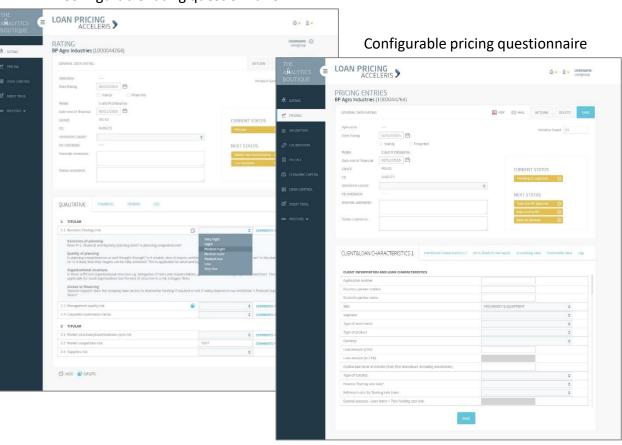
This permits to introduce control, efficiency and precision into the lending process of the institution.

Ecosystem

Loan PRICING **ACCELERIS** The Analytics Boutique provides an ecosystem of tools and services that complement the risk management process:

- Rating/Scoring building, validation and maintenance
- IRB parameters: PD, LGD and EAD
- Credit economic and regulatory capital calculation
- Integrated stress testing and macroeconomic model development tool
- Other: operational risk modelling and stress testing

Configurable rating questionnaire



Loan PRICING ACCELERIS FACT SHEET

BRINGING PRECISION AND CONTROL INTO YOUR LENDING PROCESS



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Loan cash flows projection for precise pricing

Loan PRICING **ACCELERIS** performs a detailed projection of all cash flows of the transaction and estimates the present value, including:

- **FX Rate**: allows different currencies and uses the forward curve of the exchange rate
- Contract balance: models multiple loan amortization standard schemes as well as bespoke amortization schedule
- Operational expenses: incorporates all operational costs implicit in the lending activity, i.e. loan evaluation, administration and other
- Credit risk: adds the expected loss and capital costs including:
 - Probability of default as corresponds to the credit quality of the borrower
 - Loss given default of the type of deal and the collateral
 - Exposure at default
- Funding: the funding cost of the institution
- Fees and commissions: Agreement/Amendment/Establishment fee,
 Commitment fee and others
- Interest income: spread and reference rate
- Income and cash flows specific to the institution

Conceptual representation of the pricing analytics performed by Acceleris, in C#

			VERDADERO	VEFDADERO	VERBADERO 4	VERDADERO 5	VERDADERO 6	VERBADERO 7	VERDADERO	VEFENDERO	VERDADERO 10	VERDADERO	VEFENDERO	VERBAGERO 13	VERDADERO	VERDADERO 15	VERDADERO 10	VERDADERO	VEFEADERO	VERDADERO 13	VERDADERO 20	VEFENDERO 21	VERDADERO 22	VERDADERO V
FX Rate FX rates															2									
Contract balance calculations Contract balance calculations Contract Contract Captul Contract		Opening capital and capitalised interest Opening capital and capitalised interest PV desenter capital and capitalised interest interest earned interest paid interest paid factors paid capital drawn capital drawn capital and capitalised interest paid capital and capitalised interest paid capital and capitalised interest paid capital and capitalised interest paid	100 9,640,000 9,640,000 9,571,984 92,661	1,00 1,610,000 9,660,000 9,474,391 92,661 92,661	100 5.661,000 5.663,000 5.794,452 52,661 92,661	100 9.643,000 9.643,000 9.243,596 10.661	3,693,000 3,693,000 3,993,600 3,993,603 92,661	100 5.661,000 5.663,000 5.066,035 52,661	3,693,000 9,669,000 9,694,000 9,004,591 92,661	100 3,669,000 9,669,000 8,90,470 52,661 92,661	100 3,643,000 9,643,007 8,623,007 92,661	3,650,000 9,660,000 9,794,000 9,794,000 92,661	1,00 3,603,000 3,663,000 6,665,003 32,661 32,661	100 5,661,000 9,669,000 8,508,65 92,661 1294,596 1294,596 1294,596	100, 9,534,709, 9,534,009, 9,363,899, 91,374, 91,374, 91,374, 91,374, 91,374, 154,272, 394,292	3,400,417 9,400,417 9,400,417 8,62,697 90,067 90,067 90,067 90,067 134,232 134,232	100 8,296,125 7,996,126 98,800 98,800 98,800 98,800 754,230	100 5 (01.83) 5 (01.83) 7 780.891 67.512 67.513 87.513 87.513 87.513 104.232	0,937,542 8,997,542 7,566,397 96,226 96,226 96,226 95,226 114,252 134,252	100 6.063,250 8.863,250 7.805,803 94,939 94,939 94,939 94,939 74,252 34,252	100 8.720,998 8.720,998 7.96,207 00,653 00,653 00,653 154,232 394,282	100 0.594,667 0.594,667 7,092,666 02,366 02,366 02,366 52,366 52,366 52,366 52,366	0.460,275 8,460,375 8,803,490 91,079 81,079 81,079 81,079 81,079	9.326.003 9.326.003 9.326.003 9.696.007 79.792 79.792 79.792 79.782 79.782 34.282
		Closing capital and capitalised interest Closing capital and capitalised interest	9,669,000	9,669,000 9,669,000	9,869,000	9,669,000	9,669,000	9,869,000 9,869,000	9,669,000 9,669,000	9,869,000	9,669,000	9,669,000 9,669,000	9,869,000	9,534,708 9,534,708	9,400,417 9,400,417	9,266,525	9,131,833 9,131,833	8,997,542 8,997,542	8,863,250 8,863,250	8,728,958 8,728,958	8,594,667 8,594,667	8,460,375 8,460,375	8,306,083 8,306,083	8,191,792 8,191,792
Costs	OpEx	Operational costs	71,663	71,683	11,683	1,683	11,683	11,683	71,663	71,683	11,683	11,663	71,663	71,683	11,521	11,369	11,197	T.034	10,872	10,710	10,547	10,365	10,223	10,061
		Operational costs PV Operational costs	C98.FF	11,683	11,680	11,603	11,683	11,683	11,603	71,683	11,600	11,603	11,683	11,600	9,521	11,069	15,197	11,034	10,872	10,710	10,547	10,365	10,223	10,001
	Credit risk	Expected loss: Business partner risk premium Expected loss: Business partner risk premium	1(505 101,313 16(513	1(448 101,013 61,015	11,332 81,313 Mr;313	11,218 101,313 101,813	1(104 101,013 101,013	10,992 10,013 100,013	10,801 101,010 101,010	10,770 101,513 101,513	10,661 67,313	10,854 101,512 101,512	10,447 101,013 101,013	10,341 90,322 90,322	10,094 00,044 06,642	9,851 00,044 06,044	9,612	9,377 00,322 86,842	9,946 00,N4 00,N4	0,918 00,044 00,044	8,694 00,344 86,344	8,474 00,344 98,344	8,257 91,344 96,644	8,044 99,044 86,044
		PV Expected loss: Business partner risk premi Expected loss: Country risk premium Expected loss: Country risk premium PV Expected loss: Country risk premium	0.00 0.00 16.00	10,343 10,343 10,344 10,344	0.50 6.50 6.50	0.30 16,80 W650	0.00 0.00 100,00 100,00	0.5v0 10.6v0 10.6v0	0.00 0.00 16.00 W.257	10,343 10,343 10,043	0.340 10.840	0.303 0.303 0.305 0,865	10.343 10.343 10.343 10.063	10,340 10,340 10,360	0.021 2080 3660	78,567 74,004 74,567	14,011 14,011 14,011 6,306	M, MOD M, MOD M, MOD	6254 94,285 94,285 94,285	PUIDO	0.041 0.041 0.041	10,000	13.500 12.600 Notice	13,465 13,465 63,5467
		Maturity yrs, Ceofficient of correlation [R] Maturity adjustment factor [b] Capital requirement (in %) [K1	W.d VSO0 3500	9.00 V.00 V.00	6000 0.000 9.00	5:00 Vi20 9:20 7:20	73.30" JUER A ED P IM	5.00 0.05 0.05	9.026 9.026	50.50. ,0.150. ,0.10.	W 78.70 7800 7800	5720' 0758 - 7.68 2.00	6.00c	70.00 70.00 0.00 9.00	55.00 76.00 5.00 5.00	73-92 7/709 7/709 9/70	0.000 0.000 9.00	5.W 1027 0.634 25.65	70'90' 70'09 . 70'60 . 71'60 .	95.80 0.005 0.707 9.90	5.00 V/20 0.035 25.65	70.90. JUDO. - 6.150. 2.00	52.00 0.034 0.050 7.00 7.00	52-90" 01/09 7. 68 2:M
		Regulatory capital Regulatory capital Cost of equity Cost of equity Capital benefit Capital benefit Net cost of capital Net cost of capital	2,5 (2,539 2,6 (2,539 26,500 26,500 5,125 6,529 0,179	2,312(60) 2,012(60) 20(34) 20(34) 35,42 35,42 15,773 56,079	2,01,037 2,01,037 20,030 3,123 3,123 11,173 12,175	2,910,639 2,910,639 20,909 60,909 b, 25 80,173 0,173	2,312,659 2,012,659 26,540 8,123 8,123 12,773 13,679	2,512,638 2,632,638 26,936 6,525 6,528 13,773 13,775	2,3 6,503 2,8 6,503 28,005 28,006 30,623 30,623 6,173 6,173	2(.50) 2(.50) 2(.50) 2(.50) 3(.50) 3(.50) 3(.50)	2,512,639 2,512,639 (0,300 60,300 6,325 6,325 0,775	2,312,613 2,312,613 20,310 80,310 8,42 9,42 13,773 10,773	20,500 20,500 20,500 20,500 20,500 20,500 20,500 20,500 20,500	2,285,00A 2,655,00A 26,54U 26,54U H, 5,0 H,	90,002 90,005 0,000 0,000 0,000 1,000 1,000	000,000,000,000,000,000,000,000,000,00	2,35,200 2,35,200 26,540 96,540 94,530 94,530 11,630 13,600	2,003,004 2,003,004 (0,34) (0,004) A,336 A,336 A,336 (0,004	2,265,00A 2,265,00A 20(5M) 20(5M) N.556 N.566 L(10)A	2,263,20W 2,263,20W 20,544/ 20,544/ H,336 H,336 H,336W 13,60W	2,007,004 2,005,004 (0,040 40,040 8,205 8,206 0,004	M.S.85.2 W.S.85.2 W.S.85 W.S.85 W.S.86 M.S.8	2,00,000 2,00,200 20,540 20,540 4,336 4,336 11,600 12,600	2,265,00A 2,265,00A 20,000 N,555 N,556 L,564 L,564 L,560
	Funding	PV Net cost of capital Cost of funding (in %) Cost of funding Cost of funding PV Cost of funding	0,040 10001 10001	6 (5/8) 6.5,25) 0.000 0.000	#3,351	6591 6591 6591 8699	0.65% 0.65% 6.5,250 6.6,250	12,996 0,000 10,001 10,001	6,003 0,005 6,020 6,020 6,020	63,251 63,251 63,251	A0201 A0201 A0201 need	6.0,000 6.0,000 0.000 0.000	0,007 0,007 0,007 0,007	12,041 U 60% 63,251 63,261	1098 92375 92375 54,986	25,534 6 (434 7 (434 7 (436 7 (436	11,679' 0,005 50,6 %	19601 196791 196791	1,666 U.60% '96,660 '96,660 '45,5A'	0,526 0,60% 57,960 57,960 95,281	97,62 97,62 97,62	0,340 06,223 96,223 45,616	0,386 0,345 55,345 56,346 94,302	9,000 19,000 19,000 19,000
Revenue	Fees	Agroment / Amendment / Establishment few Agroment / Amendment / Establishment few Committement fee Committement fee Crandown fee Hairing fee Rairing fee Restructuring fee Restructuring fee Restructuring fee																						.0000000000000000000000000000000000000
		Total fee revenue Total fee revenue PV Total fee revenue																						
	Interest	Rate Amount Amount	11365	H. BADS	HMDS	11965	HIMPL	HME	11,9466	III. SALPS	HIMPL	H.buts	II.MDL	1200306	2034 2034 11202	H.M.P.S - (A,O,R)?	HUMPS BEAUT	11,90% 16,00%	96,226 96,226	H.505 94,535	11,905	0.50% 0.50%	,617514 . 11745?	UCUS.
Profit or Loss Accounting profit or Systematic prof		Accounting profit or loss Accounting profit or loss Accounting profit or loss FY Accounting profit or loss Systamatic profit or loss Systamatic profit or loss Systamatic profit or loss FY Sextamatic profit or loss FY Sextamatic profit or loss	-277.817 -277.817 -276.808 -296.506 -296.646	-277,817 -277,817 -272,223 -271,596 -291,596 -296,725	-277.817 -277.817 -283.468 -271.536 -281.936 -282.834	-217 817 -277,817 -286,742 -291,536 -291,536 -278,872	-277,017 -271,017 -204,063 -291,100 -291,500 -277,000	-277.811 -277.811 -261.271 -291.596 -291.596 -274.335	-277,817 -277,817 -276,727 -276,766 -276,966 -276,966	-277.017 -277.017 -276.309 -211.506 -211.506 -266.011	-277,817 -277,817 -273,517 -291,596 -291,596 -286,001	-277,817 -277,817 -270,062 -291,591 -291,596 -280,299	-277.617 -277.617 -249.413 -211.536 -211.536 -230,734	1101,030 1101,030 905,92 101,426 1012,426 896,19	-65,535 -65,535 -75,256 -70,543 -90,543 -97,245	-05,972 -95,972 -93,983 -93,576 -93,576 -94,362	-86,006 -96,006 -72,027 -75,070 -93,070 -95,576	-96,039 -96,039 -72,195 -91,643 -94,660	-06,073 -06,073 -72,407 -79,577 -99,677 -60,861	-00.006 -00.006 -71.702 -91.710 -91.710 -91.008	-00,340 -00,340 -11,004 -50,744 -90,744 -90,218	-99, TF4 -95, TF4 -70, 213 -93, 770 -93, 770 -91,434	-90,207 -96,207 -90,629 -90,071 -90,071 -90,077	-96,247 -96,267 -96,267 -93,845 -73,850

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Loan PRICING ACCELERIS

provides multiple befits to your loan origination process

Fully governed end-to-end rating and pricing processes

Single centralized rating and pricing algorithms

User friendliness

Flexibility and scalability

Unified rating/pricing platform for all products

Direct single point and automatic feed for inputs and parameters

Consolidation of rating and pricing data into a single repository

Robust technology supporting a critical process

- Audit trail and user control and highly specific user permissions
- Strong workflow management with multiple controls to manage the facility life end-to-end
- The same centralized algorithms are used by all users for all facility rating and pricing
- No model version issues. Being web based, there is only a single application (no local installation)
- The tool is easy to navigate with web pages designed for usability
- Tooltips and multiple controls for help and avoiding errors and inputs inconsistency
- Changing questionnaire and weights for rating can be easily done in the configuration module
- Flexible workflow and controls configuration
- The tool accepts an unlimited number of different pricing and rating questionnaires and models
- Can handle the rating and pricing of any product and each product may have its own workflow
- Changing of parameters and inputs is done centrally rather than in each calculation model
- Products share inputs (ie, funding rates) which are fed automatically and once for all
- All rating and pricing information is consolidated into a single data model. This information can be used to generate portfolio reports as well as to calculate risk parameters such as PD, LGD...
- Underlying code is .Net which is highly robust, scalable, flexible and easy to integrate with other systems. Robust database that supports the model, SQL Server