

CardProfit is an analytics and recommendation application designed to increase credit card profitability and opportunity discovery for Issuer and Acquirer portfolios.

CardProfit is an analytics, business intelligence and strategic recommendation application for the integral administration of payments portfolios. It is used to increase profitability and opportunity discovery in Issuer portfolios in multi-dimensional cross-segmented markets, and to derive unit indicators and profitability benchmarks in order to support profitability and performance goal setting, valuation and monitoring. It is also used to promote portfolio product development and performance and facilitate studies of tendencies and life cycle issues. There is no similar or remotely comparable technology in the market today, because analytics without profitability extraction and optimization will not address the customers' bottom line.

With CardProfit, bank-specific market segmentations can be created. For example, the Issuer business can be segmented by product, brand, product type, geographical regions, cardholder activity, credit limit usage, consumption volume, etc. CardProfit proposes a paradigm shift to a competitive emphasis where segmentations can be profiled in terms of unit indicators so that their performance can be isolated, compared and new opportunities identified. In particular, cross or intersected segmentations are essential to the understanding of the roles played by intersecting, independent market factors in opportunity discovery. For Issuer this leads to the discovery of opportunities and the realignment, redistribution and redesign of the product performance and profitability. The CardProfit profitability methodology has been applied extensively and has resulted in profitability increases between 25% and 50%.

Each variable or unit indicator in the Issuer (or Acquirer) model can be visualized historically and through time periods of any duration. Notice that the values shown in the following examples are not realistic because the data has been generated randomly.

1 Issuer

TISSUEL		
	1.1	Increasing Profitability with Benchmarks and Goals
	1.2	Profitability Tendency Analysis
	1.3	Segmented Profitability Results
	1.4	Issuer's Perspectives
	1.5	Multidimensional Segmentations and Cross-Segmentations
	1.6	Geographic Visualization
	1.7	Issuer's Functional Activity
2 Acquire	r	
3 Combin	ed Issue	er and Acquirer
1 Clinatio	Duranta	

4 Client's Running Environment

1 Issuer

1.1 Increasing Profitability with Benchmarks and Goals

It is not possible to optimize profitability without optimizing the individual segments and cross-segments and their value sources. Without profitability unit indicators, it is not possible to profile or compare these segments and their value sources. **Unit indicator benchmarks** offer a frame of reference with which to make decisions towards **profitability goal setting**. External unit benchmarks, when available, are beneficial but their use limited to average comparisons and not to profitability optimization. It is considered necessary then for a bank to have the ability to automatically generate a wide variety or catalog of internal unit benchmarks in order to properly characterize the range and behavior of the bank's very own business experience.

Creation of Unit Benchmarks

The next example shows profitability unit indicators for segment *Visa Classic*, located within a simple brand hierarchy. Such panel also shows two of the benchmarks in the bank's catalog, which place *Visa Classic* within a frame of reference. The composite indicator benchmarks shown in the table simply refer to indicators derived from others, such as profitability indicators wich are produced from income minus cost indicators. Any of the indicators shown in the main table rows can be studied in depth at the hierarchy level selected in the tool bar. This hierarchy is very simple, with only two levels, *Brands* and *Products*, but other hierarchies may additionally include geographical regions, countries, and newly acquired bank subsidiaries. The selected *Income per Own Purchase* indicator is shown in a line chart against a benchmark and in additional bar and dial chart comparisons with other segments in the level *Products*. Notice that the values shown in the following examples are not realistic because the data has been generated randomly.

Edit Search View Tools Win	dows Help					Period Monthly	Curre	ncy Local	
	Issuer's Segmentation Level By Credit Card Brand	Jurisdiction: USA				Start Date	Jul 2010 Scale	Unit Paint Re	set Scale
tability Perspectives Functional A	ctivity								
sults Tendency Benchmarks Goa	Valuation Goal Monitoring								
- Durift		Profitability Benchm	arks and Goals B	y Credit Card Brand					Indicator
Profit Visa Visa Classic Visa Gold Visa Platinum		Visa Classic m	By C Best F	Periodic Product redit Card Brand Periodic Benchmark Atomic Indicators		By Cr Best H	listoric Product edit Card Brand istoric Benchmark ability Composite Indi		Visa Gold \$6.19 Visa Classic \$3.71
MasterCard		Profitability		Benchmark's	Origin	by Monthly Pron	Benchmark's		Amex Gold Credit \$3.19
		Indicators	Atomic Benchmarks	Segment	Period	Composite Profitability Benchmarks	Segment	Period	Amex Green Credit \$2.55 Visa Platinum \$2.36
Amex Gold Payme	Profitability Benchmarks and Goals	\$0.93	\$2.78				Visa Platinum	Jul 2010	\$2.36 MasterCard Standard \$1.68 MasterCard Gold
	Profitability per Purchase Transaction Profitability per Own Purchase	\$1.52 \$2.76	\$2.21 \$5.30			\$5.42	Amex Green Credit Amex Gold Credit	Jan 2008 Jun 2007	\$1.48 Amex Gold Payment
	O Income O Expenses	\$3.71 \$0.95	\$0.89	/isa Gold	Jul 2010	\$1.19	Amex Gold Credit Amex Gold Credit	Jun 2007 Jun 2007	\$0.87 Amex Green Payment
	O Direct Operational Expenses by Functional Ar O Indirect Expenses	\$0.40 \$0.55	\$0.34 \$0.55	/isa Classic	Jul 2010		Amex Gold Credit Amex Gold Credit	Jun 2007 Jun 2007	Amex Green Payment
	Total Expenses	\$0.95 490,541		MasterCard Standard	Jul 2010	191,375	Amex Gold Credit Amex Gold Credit	Jun 2007 Jun 2007	
	ROI	290.07% \$2.76	596.06% \$5.30			\$5.42	Amex Gold Credit Amex Gold Credit	Jun 2007 Jun 2007	
	Profitability per National Transaction Profitability per International Transaction Profitability per International Transaction	\$0.63 \$1.69 \$1.52	\$2.63 \$3.29 \$2.21			\$10.19	Visa Classic Amex Green Paymen Amex Green Credit		
۰ III)	Profitability per Cash Transaction Average Profitability per Transaction	\$0.38 \$0.93	\$2.65 \$2.78			\$2.90 \$2.04	Amex Gold Credit Visa Platinum	Oct 2006 Jul 2010	
	Regular Interest Profitability per Transaction Late Interest Profitability per Transaction	\$0.26 \$0.23	\$0.52 \$0.44			\$0.44	Visa Platinum MasterCard Gold	Apr 2008 Jul 2007	
New Benchmark	Returned Checks Profitability per Transaction Profitability per Account Profitability per Active Account	\$0.25 \$89.16 \$178.67	\$0.50 \$171.44 \$317.82			\$173.88		Jun 2007	
Edit Benchmarks	Percent of Transactional Income Number of Accounts	52.70% 73,257	76,8591	MasterCard Gold	Jul 2010	92,295	Amex Green Paymen		
Show Benchmarks	Number of Active Accounts Percent of Active Accounts	36,555 49.90%	45,451/	Amex Green Paymen	t Jul 2010	47,305	Amex Green Paymen	t May 2006	Indicator Come (per Own Purcha For Segment Visa Classi
Create Goal	- O Total Profitability	\$6,531,314.83						1	Comparison Dial
Edit Goals	2		tor Income (<i>pe</i> egments <mark>Visa Cla</mark> nark Best Perio	assic					2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Show Goals See Goal Coverage Goal Monitoring	\$5.00							~~	

These two panels in the next example show how benchmarks can be created, stored in the bank's catalog, and visualized in tables and charts, as shown in the previous example. Notice that budgets are also considered benchmarks.

S New Benchmark		
r r	By Credi Best Histo	duct All-Time It Card Brand Dric Benchmark nic Indicators
Name: Best Product All-Time Author: R. Murphy, Regional Mgr Time Span	Sensitivity	Benchmark Population
Historic Cyclic Per Period	Image: Construction of the second	 Restricted to Hierarchy: By Credit Card Brand Restricted to Segment: Visa Classic USA ✓ Visa ✓ Visa Gold ✓ Visa Gold ✓ Visa Gold ✓ Wisa Classic ✓ Visa Gold ✓ MasterCard
Indicators Benchmarked Atomic Composite Profitability ROI Volume	Performance Levels ✓ Best Average Worst	Amex
-	Save in Catalog	Cancel
		Benchmark Catalog External Benchmarks
		Show Benchmarks in Table Cancel

Cascading Goals Setting and Partial Coverage

The next step consists of the establishment of cascading goals for the Issuer business. Goals can be established for any unit indicator and volume multiplier. These goals are called cascading goals because they can be applied to segment groups in a hierarchy and unless overridden, they will apply to all segments in that hierarchy group. So for example, certain goals can be applied to all classic cards in the country of South Korea except for different goals that apply only to Visa Classic Advantage in the region of Ulsan. Goals can be specified manually or be selected from benchmarks in the bank's benchmark catalog. Goal valuations can be ranked for every level in a hierarchy, so that we can identify the best or worst performers at every level, as shown below.

In the table below we can see an example of such goal setting. Notice that of all the goals applicable to *Visa Classic*, some goals were inherited in cascade from its enclosing group segments, the *Visa* brand group and the business root *USA* (show in light blue), while other goals were assigned specifically to this segment, *Visa Classic* (in light orange). We can also observe that some goals come directly from benchmarks in the catalog, while others (such as *Number of Accounts*) were created manually. CardProfit is most flexible in that it is not necessary to "cover" all unit indicators with goals, nor all segments in the hierarchy. We could for example, establish goals only for processing expenses per transaction, and leave the rest of the indicators, such as incoming interchange income, regular interest income, other costs, number of transactions per account, etc., uncovered (without goals). Likewise, "group goals", such as processing expenses per transaction, can be used to cover more detailed goals, such as processing expenses per own, national and international transactions. CardProfit was designed to offer full goal valuation and monitoring functionality of partially covering goals.

Profitability Perspectives Functional Activity

Results Tendency Benchmarks Goal Valuation Goal Monitoring

	Visa Classic -				Goals for 20 Cascading G For Visa Clas	oal		-	Best
				Goal Details					
	Profitability Indicators	Cascading Goals				Be	-	Best P	
	Indicators		Assigned to Segment	Author	Origin	Name	Segment	Period	by A
Profitability Benchmarks and Goals									
Profitability per Transaction	\$1.07	\$3.76							
😑 🔘 Profitability per Purchase Transaction	\$1.19	\$3.81							
📄 🔘 Profitability per Own Purchase	\$1.43	\$5.30							
Income	\$2.61	\$6.19	Visa Classic	R. Murphy, .	Benchmark	Best Periodic	Visa Gold	Jul 2010	
😑 🔘 Expenses	\$1.18	\$0.89							
📃 🔘 Direct Operational Expenses by Functional Area	\$0.50	\$0.34							
Transaction Processing	\$0.13	\$0.10							
- O Cardholder Billing	\$0.05	\$0.03	USA	R. Murphy, .	Benchmark	Best Periodic	Amex Green Credit	Jul 2010	
- O Payment Processing	\$0.06	\$0.05	Visa	R. Murphy, .	Benchmark	Best Historic	Visa Classic	Dec 2009	
Cardholder Servicing	\$0.05	\$0.03	USA	R. Murphy, .	Benchmark	Best Periodic	Amex Green Credit	Jul 2010	
Promotion and Retention	\$0.03	\$0.03	Visa Classic	R. Murphy, .	Benchmark	Best Periodic	Amex Gold Paym	Jul 2010	
Collections and Overlimits	\$0.14	\$0.08							
Fraud Investigation	\$0.01	\$0.01	Visa	R. Murphy, .	Benchmark	Best Periodic	Amex Gold Paym	Jul 2010	
O Issuer Center Administration	\$0.03	\$0.02	USA	R. Murphy, .	Benchmark	Best Periodic	Amex Gold Paym	Jul 2010	
Contract Expenses	\$0.50	\$0.34							
- O Indirect Expenses	\$0.69	\$0.55	USA	R. Murphy, .	Benchmark	Best Historic	Visa Classic	Jun 2009	
Total Expenses	\$1.18	\$0.89							
Total Number of Own Purchase Transactions	500,635	963,957							
(O) ROI	121.04%	596.06%							
Profitability	\$1.43	\$5.30							
Profitability per National Transaction	\$0.95	\$2.63							
Profitability per International Transaction	\$1.41	\$3.29							
🗄 🔘 Average Profitability per Purchase Transaction	\$1.19	\$3.81							
🕀 🔘 Profitability per Cash Transaction	\$0.94	\$3.70							
Average Profitability per Transaction	\$1.07	\$3.76							
🗄 🔘 Regular Interest Profitability per Transaction	\$0.22	\$0.52							
🗄 🔘 Late Interest Profitability per Transaction	\$0.20	\$0.44							
🗄 🔘 Returned Checks Profitability per Transaction	\$0.28	\$0.50							
Profitability per Account	\$85.13	\$79.02							
Profitability per Active Account	\$167.24								
Percent of Transactional Income	56.53%								
Number of Accounts	75,473	75,500	Visa Classic	R. Murphy, .	Manual				1
Number of Active Accounts	38,418								
Percent of Active Accounts	50.90%								
🗝 🔘 Total Profitability	\$6,425,040.86								

Goal Valuation

Once created, these unit goals must be valuated in such a way that for each unit goal we can obtain the total monetary increase that such goal will represent for each segment to which it was assigned, or conversely, the total monetary increase of all goals assigned to each segment or segment group. So for example, if we assign a goal to the unit indicator *Processing Expenses per Own Purchase Transaction* to a segment representing an entire geographical region in a multi-national bank (perhaps because we have established that such processing must from now on be guided by the same standards), we will be able to immediately see the total monetary impact of such a goal for each product, country and the region as a whole. The example below illustrates the concept of goal valuation.

k's Profile Credit Card Dashboard Issuer Acquirer				I a ca facati		
e Edit Search View Tools Windows Help				Period Monthly Period	Currency	Local 🔻
Issuer's Segmentatio		ucts	Jurisdiction:	Start Date	Jul 2010 Scale	Unit Reset Scale
ofitability Perspectives Functional Activity						
esults Tendency Benchmarks Goal Valuation Goal Monitori	ng					
				Actual Profitabil	ity vs. Projected Goals By Credit	Card Brand
	(±	ŧ			MasterCard	
			Ŧ	MasterCard Sta		-
	Total	📃 🔳 Visa	Total	Profitability 🔳	Goals for 2011 🔳	
			MasterCard	Unit Indicators, Actual Values	Unit Cascading Goals and Projected Totals	Goal Contribution in Total Figures
Actual Profitability vs. Projected Goals						
Profitability per Transaction	\$1.09	\$1.04	\$1.12	\$1.07		\$5,331,222.3
Profitability per Purchase Transaction	\$1.23	\$1.09	\$1.21	\$1.26		\$2,149,777.8
🗄 🚹 Profitability per Cash Transaction	\$0.95	\$0.99	\$1.03	\$0.86		\$3,181,444.5
🗄 📙 Average Profitability per Transaction	\$1.09	\$1.04	\$1.12	\$1.07		\$5,331,222.3
🗄 📗 Regular Interest Profitability per Transaction	\$0.22	\$0.22	\$0.22	\$0.21	\$0.38	
🕀 🚹 Late Interest Profitability per Transaction	\$0.21	\$0.20	\$0.23	\$0.23	\$0.43	
🗄 🕌 Returned Checks Profitability per Transaction	\$0.22	\$0.21	\$0.23	\$0.20	\$0.38	
Profitability per Account	\$88.18	\$85.40	\$95.03	\$95.69	\$80.83	
Purchase Profitability per Account	\$30.32	\$28.05	\$31.57	\$36.36		\$887,958.5
Cash Transaction Profitability per Account	\$24.55	\$24.65	\$27.82	\$24.45		\$810,269.9
😑 🕌 Regular Interest Profitability per Account	\$11.33	\$11.30	\$11.45	\$12.21	\$24.14	
Income	\$20.98 \$9.65	\$20.68 \$9.38	\$21.50 \$10.05	\$21.68	\$30.43	
Expenses Direct Operational Expenses by Functional Area	\$9.05	\$3.65	\$10.05	\$9.47	\$0.25	
Cardholder Billing	\$0.48	\$0.47	\$0.46	\$0.51	\$2.13	
Payment Processing	\$0.57	\$0.56	\$0.40	\$0.51		
Cardholder Servicing	\$0.55	\$0.50	\$0.53	\$0.59	\$0.20	the second se
Promotion and Retention	\$0.39	\$0.40	\$0.37	\$0.39	\$0.20	
Collections and Overlimits	\$1.33	\$1.25	\$1.68	\$1.21	\$0.83	
Fraud Investigation	\$0.11	\$0.11	\$0.11	\$0.11	\$0.08	
Issuer Center Administration	\$0.32	\$0.32	\$0.30	\$0.32	\$0.21	
Total Direct Expenses	\$3.74	\$3.65	\$4.00	\$3.68	\$2.13	
Indirect Expenses	\$5.91	\$5.73	\$6.05	\$5.79	\$4.16	\$113,060.9
Total Expenses	\$9.65	\$9.38	\$10.05	\$9.47	\$6.29	
• ROI	117.34%	120.40%	113.97%	128.92%	383.75%	
Profitability	\$11.33	\$11.30	\$11.45	\$12.21	\$24.14	
E Late Interest Profitability per Account	\$10.84	\$9.93	\$11.95	\$12.96		
Handling Fees Profitability per Account	\$0.04	\$0.83	\$0.13	(\$1.72)	\$18.68	
Returned Checks Profitability per Account	\$11.10	\$10.65	\$12.12	\$11.44	\$18.83	
Total Profitability per Account	\$88.18	\$85.40	\$95.03	\$95.69	\$80.83	\$4,876,905.8
Profitability per Active Account	\$149.85	\$147.88	\$147.07	\$150.82		
Percent of Transactional Income	59.91%	59.06%	60.13%	60.08%	74 75	60 EC0 000 0
Number of Accounts Number of Active Accounts	643,787 378,854	220,816	132,849 85,846	69,190 43,900	79,727	\$2,562,933.2
Number of Active Accounts Percent of Active Accounts	378,854	57.75%	64.62%	63.45%		
Percent of Active Accounts Total Profitability	\$56,769,896,02		04.02%	\$6,621,075,27	2	1

Goal Monitoring

Once these goals have been valuated and approved, these goals' progress must be monitored through the goals' term, at any level of detail in the segment hierarchy, and for each segment or group. The fact that a given segment may meet its assigned accumulative goal, is not an implication that its individual unit goals are exempt from scrutiny, because some unit indicators may be outperforming their goals, thus suggesting a goal reassessment towards better performance, while others may be drastically underperforming their goals, thus triggering the necessary functional corrective measures to meet such goals and further improve the segment's performance. Therefore, it is necessary that goal monitoring includes separate reviews of adverse, favorable and complete goal contributions for each individual and accumulated goals. The following example shows the process of goal configuration.

al Name: Goals for 2011		Hierarchy to be Monitored
Goal Contribution Type Adverse Contributions Favorable Contributions Complete Contributions	Levels to Monitor Image: Brands Image: Products Image: Unit Indicators	Restricted to Hierarchy: By Credit Card Brand Restricted to Segment: Visa Classic USA Visa Classic Visa Gold Visa Platinum MasterCard Amex
Goal Monitoring Alarm Configur		
Performance inferio	or to average by 10 percent.	
Performance superi	ior to average by 20 percent.	

The following example shows goal monitoring for adverse contributions at all levels in the given hierarchy. These tables are prioritized from high to low adversity and illustrate the need to produce such tables for each level in the hierarchy. For example, even though the brand with most adverse contributions is *Amex*, we can observe that the product with most adverse contributions is *Visa Classic*, which does not belong to the most adverse brand. Similarly, the most adverse indicator, *Amex Gold Payment, Number of Accounts*, does not belong to the most adverse product. Analysis at each level of detail encourages the use of different corrective strategies for the management teams at each level, while providing the bank's global management with a complete X-ray of the entire business.

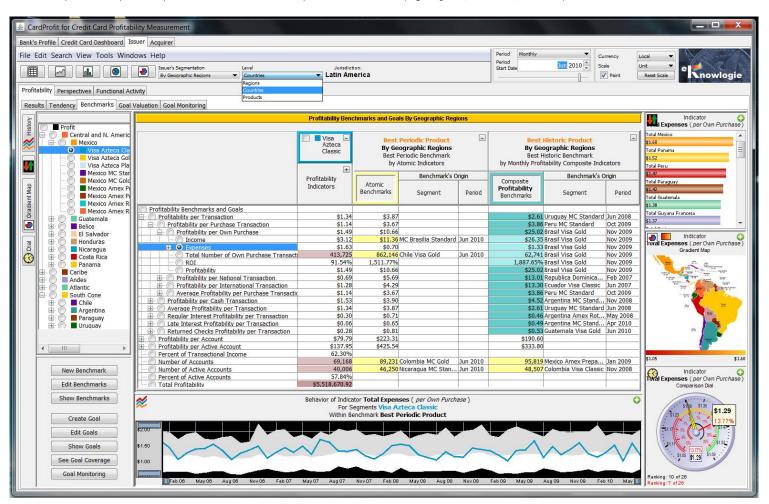
Level Products	•	Jurisdiction: USA	Period Monthly Period Jul 2010	Currency Loc Scale Unit		
Products			Period Jul 2010	Scale Unit	• e 🥑	and the second s
Products	_		Period Jul 2010	Scale Unit	• e 🥑	alla a la
Products						ROW
		USA		Paint R		
Goals					eset Scale	owlogie
Goals						
Goals						
			Prioritized List of Advers	e Contributions	to the Goals	
obuls				el Products	to the Obals	
						%
		Prioritized	Products		and the second se	-43.54%
					(\$4,028,519.85)	-6.45%
					(\$3,631,942.25)	-5.82% =
						-5.64%
						-5.32% -5.29%
						-4.68%
					(\$2,912,636.26)	-4.67%
	-0.65%				(\$1,891,895.55)	-3.03%
(\$344,385.69)	-0.55%				(\$1,650,773.10)	-2.64%
						-0.53%
						-0.51% -0.50%
						-0.27%
	-0.02%			per riccou	(\$160,452.42)	-0.26%
(\$9,447.41)	-0.02%				(\$86,639.10)	-0.14%
(\$9,244.05)	-0.01%	e Inc	come (per International Cash Transa	ction)	(\$62,477.28)	-0.10%
Prioritized L					Adverse Ceptribui	tions
						%
					(\$27,182,261.49)	-43.54%
					(\$27,182,261.49)	-43.54% 🚥
						-2.77%
						-2.33% -2.21%
						-1.95%
					(\$1,217,842.91)	-1.95%
					(\$1,052,468.69)	-1.69%
	15	1	11 3		(\$817,280.19)	-1.31%
						-1.22%
			ansacuun			-1.08% -1.06%
or negun	2. 2. 10. 001 per				(\$626,586.56)	-1.00%
					(\$576,199.93)	-0.92%
	nt					-0.92%
count						-0.86%
					(\$520,120.16)	-0.0370
	Goal Monito	ring Alarms				
				h Transaction)		
	bsolutes 7,182,261.49) 2,787,694.47) 4,953,430.15) 3,302,657.05) (\$437,702.99) (\$575,232.63) (\$437,702.99) (\$257,163.87) (\$244,4810.53) (\$244,4810.53) (\$24,4810.53)(\$24,	7,182,261.49) -43.54% 2,787,694.47) -20.48% 9,441,136.87) -15.12% (\$437,280.19) -1.31% (\$575,232.63) -0.92% (\$437,702.99) -0.70% (\$434,385.69) -0.55% (\$344,385.69) -0.55% (\$344,385.69) -0.55% (\$344,385.69) -0.55% (\$344,385.69) -0.65% (\$257,163.87) -0.41% (\$24,810.53) -0.06% (\$24,810.53) -0.06% (\$24,810.53) -0.06% (\$24,810.53) -0.06% (\$24,410.53) -0.01% Prioritized List of Advers for Level I Prioritized List of Adverse for Level I Direct Operational Expenses pr Nu penses of Regular Interest per cons per Account count	bsolutes % 7,182,261.49) +33,54% 2,787,694.47) -20,48% 9,741,136.87) -15,12% 4,953,430.15) -7,93% 3,302,657.05) -5,29% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$817,280.19) -1,31% (\$844,753.31) -0,65% (\$30,3432.23) -0,49% (\$27,163.87) -0,41% (\$15,332.21) -0,02% (\$15,332.21) -0,02% (\$15,332.21) -0,02% (\$15,332.21) -0,02% (\$16,41,53) -0,01% (\$17,52,52,63) -0,01% (\$18,24,60,53) -0,01% (\$18,332,21) -0,02% (\$19,47,41) -0,02% Prioritized List of Adverse Contribut for Level Unit Indicator Direct Operational Expenses per National Cash Tr penses of Regular Interest per Account)<	bisolutes 7,182,261.49) 7,182,261.49) 7,287,694.47) 2,287,694.47) 2,204.49) 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,953,430.15) 7,293% 4,943,4385.69) 7,029% (\$34,564.33) 1,004% (\$24,810.53) 1,004% (\$24,810.53) 1,004% (\$24,810.53) 1,004% (\$24,410.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% (\$24,105.5) 1,004% 1,004	bisolutes 7.182, 261.49 7.182, 261	besolutes 96 7.182,261.49) -43.54% 9.441,136.87) -15.12% 9.441,136.87) -15.12% 9.441,136.87) -15.12% 9.441,136.87) -15.12% 9.441,253.401 (\$2,7182,261.49) 9.441,253.401 (\$2,728,214.91) 9.478,543.401 (\$2,520,721.48) 9.478,543.401 (\$2,520,721.48) 9.478,543.401 (\$2,520,721.48) 9.478,543.401 (\$2,520,721.48) 9.478,542.25 9.478,702.99 (\$2,721.28) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,702.99 (\$2,721.28) 9.478,702.99 (\$2,721.28) 9.478,542.401 (\$2,520,721.48) 9.478,542.401 (\$2,520,721.48) 9.478,553,201 (\$2,520,721.48) 9.478,574,803 (\$1,72,843,78) 9.478,574,803 (\$1,72,843,78) 9.478,574,803 (\$1,77,843,78) 9.478,574,803 (\$1,377,843,78) 9.478,574,803 (\$1,377,843,78) 9.478,574,800 (\$1,72,67,450.1) 9.478,574,800 (\$1,72,67,450.1) 9.478,574,800 (\$1,72,67,450.1) 9.478,574,800 (\$1,72,67,450.1) 9.478,574,800 (\$1,72,67,450.1) 9.478,574,800 (\$1,72,67,450.1) 9.478,474,41 (\$1,72,67,450.1) 9.478,474,41 (\$1,72,67,450.1) 9.478,474,41 (\$1,72,743,78) 9.478,474,401 (\$2,576,135.1) 9.478,401 (\$1,72,67,450.1) 9.478,401 (\$1,72,6

A simple example of using benchmarks and goals consists of creating a historic average benchmark for all products. With one click, all unit indicators in this benchmark can be assigned to the root of the product hierarchy, and that's it. These goals are automatically propagated in cascade to all the products in the hierarchy. Goal progress can then be monitored by inspecting negative goal deviation reports and alarms for the hierarchy levels, products and indicators within products. Because we selected an average benchmark, we know that about half of the indicators will have a performance superior to the benchmark, and thus we are not interested in positive or consolidated (positive plus negative) deviations. We are interested in having negative deviations (below average) improve to at least the average. If we use this strategy in consecutive years, the average will improve gradually but significantly. The example above can be extended by assigning individual goals from different benchmarks which would override the propagation in cascade of the average benchmark. Comparative studies to understand differences between segments with best performance according to different benchmarks, would result in the assignment of more insightful and beneficial goals specific to these segments.

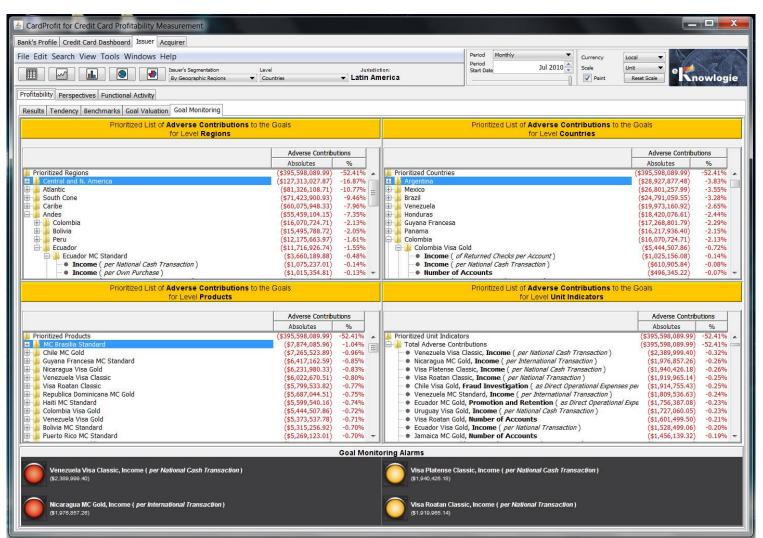
CardProfit offers the concept of **jurisdictions**. The jurisdiction for each user is the level of model visualization for such user. This way, users can have geographical jurisdictions which allow each user access only to the model of the country or region relevant to that user, while at the same time maintaining access to the global indicators and standards automatically generated by CardProfit with the purpose of establishing anonymous performance comparisons and benchmarking. Global company executives can of course have full access to the global model. Other jurisdictions of interest include jurisdictions by product family brand, such that a specific brand jurisdiction could be shared with that brand's executives, allowing other brands in the model to remain anonymous. This concept of jurisdictions is extremely useful to multinational banks.

Multi-National Banking

Banks which offer credit card products through their newly-acquired banks or regional or country-based bank subsidiaries may want to create a segmentation that reflects that organization, such as the one shown in the examples below for a Latin American multi-national bank. Every indicator can still be compared in depth at any of the levels in the hierarchy for the entire bank (e.g. *Regions, Countries, Products*).



Goals can still be monitored throughout the entire global structure in the bank, and for all levels in the hierarchy. Again, notice how the single indicator with the most adverse goal contribution does not belong to the product with the most adverse contribution, which in turn does not belong to the country or region with the most adverse contribution, thus emphasizing the need for corrective measures through proper management relationships between the levels in this hierarchy.



1.2 Profit Tendency Analysis

The following example shows an Issuer profitability tendency dashboard where the profitability tendencies can be analyzed in detail.



1.3 Segmented Profitability Results

The following example shows the Income Statement for the Issuer business. The hierarchy in the columns allows visiting the chosen segmentation at any level of detail. Similarly, the hierarchy in the rows allows visiting the Income Statement at any level of detail. This allows the use of one given table for executive strategic purposes as well as for detailed operational purposes. Once again, the values shown in these examples are not realistic because the data has been generated at random in order to avoid any similarities to specific scenarios.

nk's Profile Consumer Banking Credit Card Bu	siness Strategy	Issuer Marketing	Issuer Acquirer								
Edit Oceant Man Taska Mindaus Hala		-				ĺ.		-1	-		M. Maraka.
Edit Search View Tools Windows Help						Period	Weekly	Currency	Local		
	uer's Segmentation					Period Start Date	15, 6 Apr 08	 Scale 	Unit		
	Credit Card Brand						101010100	Paint	Rese	t Scale	nowlogi
											A She All
ssuer Dashboard Functional Activity Functional	Activity (Collection	s) Profitability	Performance Iss	suer Comparative	Portfolio						
			Drofit	ability By Credit (ard Brand						
			From	ability by creak c	ai u Di allu						
	(H	(±				Mae	sterCard				
	100 C	and the second sec	Tabal 🕀	D Martin Car	d Characterial	Mu	ACT CUT U			-	
	🔲 🔳 Total	🗌 📕 Visa	Total MasterCard	MasterCar							Master
			- MasterCard	Absolutes +	Per Account 🛨	Per Transaction +	% Income 🛨	% Balance +	% Billing 🛨	% Expenses 🛨	-
Profitability											
- 🔚 Income	\$1,356,857,112.91	\$425,094,203.42	\$306,928,369.47	\$154,471,284.25	\$15,814.01	\$203.22	100.00%	957.42%	152.16%	1,853.90%	\$153
- 🗂 Direct Operational Expenses by Functional Area	\$80,693,301.28	\$30,939,386.63	\$18,004,849.12	\$8,332,232.83	\$853.01	\$10.96	5.39%	51.64%	8.21%	100.00%	\$
🔶 🗂 New Account Acquisition	\$2,989,549.37	\$966,621.88	\$362,357.12	\$316,139.73	\$32.36	\$0.42	0.20%	1.96%	0.31%	3.79%	
🔶 🔚 Credit Processing	\$2,922,165.55	\$1,250,072.90	\$201,681.26	\$171,580.16	\$17.57	\$0.23	0.11%	1.06%	0.17%	2.06%	
- T Plastics Issuing	\$5,979,571.23	\$2,134,709.06	\$1,263,564.44	\$749,036.47	\$76.68	\$0.99	0.48%	4.64%	0.74%	8.99%	
- Transaction Processing	\$10,833,405.39	\$3,605,151,84	\$2,288,418,46	\$1.231,115.64	\$126.04	\$1.62	0.80%	7.63%	1.21%	14.78%	\$
Cardholder Billing Cardholder Bi	\$6.218.845.26	\$3,709,153,53	\$1,459,212,40	\$391,865,13	\$40.12	\$0.52	0.25%	2.43%	0.39%	4,70%	\$
Salaries and Benefits	\$1,467,928,14	\$875.527.63	\$344,439,98	\$92,497,86	\$9.47	\$0,12	0.06%	0.57%	0.09%	1.11%	
🗢 🗂 Data Processing	\$1,409,640,44	\$840,762,65	\$330,763,14	\$88,825.00	\$9.09	\$0.12					
- D Postage	\$2,403,724.69	\$1,433,671,93	\$564.018.67	\$151,464.76	\$15.51	\$0.20			S		
Telephone and Telecom	\$87,951.81	\$52,457,77	\$20,637,33	\$5,542.07	\$0.57	\$0.01	2 (The second				
 Physical Space Occupancy 	\$127.079.25	\$75,794,85	\$29,818.33	\$8,007.58	\$0.82						
- Furniture and Equipment	\$284,549.40	\$169.715.98	\$66,767,70	\$17,930.18	\$1.84	\$0.02					
- Stationery	\$387,870.61	\$231,340.64	\$91.011.37	\$24,440,71	\$2.50						
Travel and Representation	\$40,108,28	\$23,922.09	\$9,411,15	\$2,527.32	\$0.26						
- Credit Report Agencies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			1 7 7 7 7 7		<u>.</u>
- Collection Agencies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00					
- Internal Support	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00					
External Processing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00						
Other Direct Expenses	\$9.992.64	\$5.959.99	\$2.344.71	\$629.66	\$0.00	\$0.00					
Ciller Direct Expenses Payment Processing	\$7.854.088.42		\$1.683.948.12	\$859,738,77	\$88.02				S		
									1 7 1 7 1 7 1 7		\$
Cardholder Servicing F Promotion and Retention	\$6,888,108.30	\$4,108,327.21 \$1.819.539.10	\$1,616,250.70	\$434,037.09 \$488.370.23	\$44.43 \$50.00	\$0.57 \$0.64					1
	\$4,974,046.82		\$1,128,381.22								
Collections and Overlimits	\$26,185,000.04	\$8,880,709.18	\$6,674,276.44	\$3,116,120.29	\$319.01	\$4.10					\$
Fraud Investigation	\$1,504,534.11	\$550,368.49	\$341,309.22	\$147,720.70	\$15.12						
• 📑 Issuer Center Administration	\$4,343,986.79		\$985,449.74	\$426,508.62	\$43.66				(1) 20 (17)		
Direct Operational Expenses by Natural Expense		\$30,939,386.63	\$18,004,849.12		\$853.01	\$10.96					\$
	\$1.276.163.811.63		\$288.923.520.35	\$146.139.051.41	\$14,961.00	\$192.26					\$14
	ect Operational Exp			antonone That is t	\$1,069.37	\$13.74					\$1
			ed by natural expense (\$2
			his section represents			\$178.51	87.84%	841.04%	133.66%	1,628.54%	\$12
			ese expenses are a re								
			I Expenses by Function	nai Area and there	etore						
	produce the same										

The following example shows the Income Statement for the Issuer business segmented by socioeconomic strata cross-referenced with geographical regional segments.

CardProfit for Credit Card Profitability Measurement								_ 7
ank's Profile Consumer Banking Credit Card Business S	trategy Issuer Mar	keting Issuer Acquirer						
ile <u>E</u> dit <u>S</u> earch <u>V</u> iew <u>T</u> ools <u>W</u> indows <u>H</u> elp				Period	Weekly	Currency	Local 💌	
Image: Segregation of the se				Period St	art Date 14, 30 Mar	D8 Scale	Unit Reset Scale	Nowlogie
Issuer Dashboard 🎽 Functional Activity 🎽 Functional Activity (Collections) Profit	tability Performance Issuer	Comparative Portfolio]				
		Profitability	By Socioeconomic Stra	ata				
	÷		Stratum A (Inc	come > \$200K)				
	🔲 🔳 Total	Pacific A		±		•	🔲 📒 Stratum B	🔲 📕 Stratum C
	l l	📃 📕 Pacific A Urban 主 📃 🛛	Pacific A Rural 主	North A	Central A	Atlantic A		
Profitability				Name and Address of the				
	\$1,360,916,004.25	\$156,287,442.25	\$136,684,528.29	\$300,504,811.21	\$165,866,266.58	\$150,711,786.12	\$601,423,389.10	\$667,326,414
 Incoming Purchase Commissions Cash Advance Commissions 	\$396,995,799.49 \$425,728,952,70	\$45,008,446.96 \$51,807,042,13	\$48,902,349.50 \$21,527,364,56	\$73,906,255.10 \$90,355,272.16	\$54,417,158.96 \$50,724,935.62	\$34,497,623.38 \$45,129,606,44	\$182,106,724.25 \$182,731,878.59	\$207,273,162 \$195,813,323
Cash Advance Commissions Annual Fees	\$144.157.862.75	\$15,300,892.77	\$16,747,490.60	\$35,984,621,33	\$16.605.578.48	\$15.628.608.93	\$44.605.776.05	\$55,202,685
- Regular Finance Charges	\$142,994,716.30	\$19,255,832.80	\$14,934,827,21	\$33,979,539,14	\$21,865,029,12	\$17,102.607.45	\$68,353,696,69	\$70.083.066
Integration interest	\$142,872,019,21	\$11.162.924.07	\$12,755,567.79	\$28,233,869,90	\$11.054.288.90	\$15.649.204.28	\$58.805.639.62	\$77.676.765
- CReturned Check Fees	\$108,166,653,81	\$13,752,303,53	\$21,816,928,62	\$38.045.253.57	\$11,199,275,49	\$22,704,135.65	\$64.819.673.89	\$61,277,410
🗝 🗂 Direct Operational Expenses by Functional Area	\$64,304,305.35	\$3,727,953.10	\$3,079,002.76	\$4,278,911.40	\$1,461,110.54	\$4,507,702.12	\$15,859,658.43	\$16,930,414
Direct Operational Expenses by Natural Expense Category	\$64,304,305.35	\$3,727,953.10	\$3,079,002.76	\$4,278,911.40	\$1,461,110.54	\$4,507,702.12	\$15,859,658.43	\$16,930,414
	\$1,296,611,698.90	\$152,559,489.14	\$133,605,525.53	\$296,225,899.81	\$164,405,156.03	\$146,204,084.00	\$585,563,730.67	\$650,395,999
🛏 🛅 Indirect Expenses	\$124,044,321.49	\$5,201,541.05	\$5,640,718.75	\$12,078,132.25	\$5,029,165.13	\$7,899,974.59	\$28,878,707.33	\$33,378,87
– 🗋 Total Expenses	\$188,348,626.84	\$8,929,494.15	\$8,719,721.51	\$16,357,043.65	\$6,490,275.68	\$12,407,676.70	\$44,738,365.76	\$50,309,28
Profit Before Taxes	\$1,172,567,377,42	\$147.357.948.09	\$127,964,806,78	\$284,147,767,56	\$159.375.990.90	\$138,304,109,42	\$556,685,023,34	\$617,017,12

1.4 Issuer's Perspectives

A line of business can be managed from different **perspectives**, where each offers a particular analytical emphasis. The main perspective supported is profitability, but other perspectives include marketing, risk-management, CRM, and operations. CardProfit offers **executive perspectives** which are consolidated perspectives across multiple lines of businesses.

CardProfit's multidimensional market segmentation is uniquely suitable for CRM analysis, because it allows the evaluation of CRM segments from the profitability perspective. CRM tools for the credit card and payments industry do not support profitability measurement, rendering them unable to classify segments by their impact on the profitability of the business. This suggests that market segmentation for profitability measurement and CRM are inseparable, given that in order to carry out CRM impact studies on the bottom line, it is necessary that such a study be supported with a profitability and financial performance infrastructure.

Issuer Portfolio

The following example shows a high-level view of the Issuer's consolidated portfolio segmented by credit card brands. Notice that this is a comparative panel where the indicators are shown graphically as percent bars. This same consolidated portfolio can be shown for any of the other Issuer segmentation models, for example, by credit card type, by socioeconomic strata or by geographic region, etc.

Bank's Profile Consumer Banking	Credit Card Busines	s Strategy Issuer Ma	arketing Issuer	Acquirer		
le Edit Search View Iools Win	Issuer's S	egmentation Card Brand	Period Period Start Date	Weekly Currer 3, 13 Jan 08 Currer Veekly P:	Unit	e Knowlogi
Issuer Dashboard Functional Activi	ty Functional Activi		fitability Perform		ve Portfolio	
		Issuer Comparat	tive Portfolio By Cre	dit Card Brand		
	Profit	+ Income	+ Billing	+ Balance	Delinquent Balance	Expenses
Issuer Comparative Portfolio						
🗠 🖬 Visa	33.36%	28.51%	30.97%	32:23%	36.60%	32.56%
📃 📕 Visa Classic	12.41%	<mark>10</mark> .60%	10.95%	10.17%	14.47%	9.64%
— 🔲 📒 Visa Gold	8.89%	7.60%	<mark>10.</mark> 89%	12.45%	12.24%	<mark>11.</mark> 32%
🔄 🔲 Visa Platinum	12.06%	10.31%	9.12%	9.61%	9.89%	11.60%
MasterCard	23.72%	20:27 <mark>%</mark>	24.99%	22.05%	23.27%	23.83%
— 🔲 📕 MasterCard Standard	12.33%	10.54%	12.46%	11.02%	10.64%	8.68%
📃 📕 MasterCard Gold	11.39%	9.73%	12.52%	11.03%	12.63%	15.15%
- 🗹 📕 Amex	42.91%	36.67%	44.04%	45.72%	40.13%	43.61%
— 🔲 📕 Amex Green Payment	11.41%	9.75%	10 <mark>.66%</mark>	8.38%	9.61%	10.77%
— 🔲 📕 Amex Gold Payment	10.51%	8.98%	11 <mark>.</mark> 24%	14.10%	10. <mark>50%</mark>	10.20%
— 🥅 📕 Amex Green Credit	<mark>9.9</mark> 9%	8.53%	12. <mark>08%</mark>	13.73%	10. <mark>20%</mark>	<mark>13.</mark> 06%
Amex Gold Credit	11.00%	9.40%	10.06%	9.50%	9.82%	9.59%

1.5 Multi-Dimensional Segmentations and Cross-Segmentations

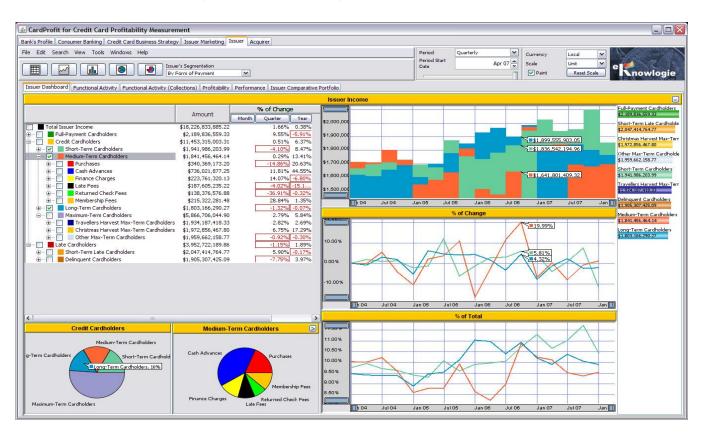
A market, like the Issuer market, can be segmented according to any arbitrary criteria. Issuer can be segmented by credit card product, by geographic regions, by cardholder transactional frequency ranges, by credit limits, by credit limit utilization, by cardholder consumption habits (if available), by promotional campaigns, by account acquisition harvests, etc. CardProfit can be used to model a given segmentation in order to obtain a comparative profiling and differentiation of its segments in order to improve performance and profitability. For example, we will know via unit indicators the ways a classic product A might be under-performing a similar classic product B.

We can also *cross* these segmentations in order to obtain much more revealing insights that can further improve performance. For example, if we cross products with geographic regions and cardholder transactional ranges, we could discover that high transactor cardholders in a product Visa Gold in geographic region A are outperforming the high transactors for the same product in socio-economically similar geographic region B. Cross-segmentation can also allow us to differentiate delinquent cardholders according to the acquisition harvest or marketing campaign to which they

Is Windows Help Issuer's Segmentation By Geography By Brand By Card Type Cross-Segmentat By Cardholder Transactional Ranges By Credit Limit By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment	Profitability M	easurement		
Bv Geography Countries tional Activity By Geography By Gard Type I Monitoring Cross-Segmentat By Cardholder Transactional Ranges By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment Countries	board Issuer A	Acquirer		
By Geography Countries tional Activity By Geography By Geography By Geography By Grad Type I Monitoring Cross-Segmentat By Card Type By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment Image: Strate Strate	ls Windows H	Help		
By Geography By Brand By Card Type Cross-Segmentat By Cardholder Transactional Ranges Pro By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment				
tional Activity By Brand Cross-Segmentat By Card Type By Cardholder Transactional Ranges Pro By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment				Countries
By Card Type I Monitoring By Cardholder Transactional Ranges I Monitoring Prd By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment		By Geography		
Cross-Segmentat By Cardholder Transactional Ranges By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment	tional Activity	By Brand		
Pro By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment		By Card Type	4	1.1.1
Pro By Credit Limit By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment	Cross-Segment	By Cardholder Transactional Ranges	101	Monitoring
By Credit Limit Usage By Socio-Economic Strata By Consumption Habits By Balance Payment	L F	By Credit Limit		
By Consumption Habits By Balance Payment				
By Balance Payment		By Socio-Economic Strata		
		By Consumption Habits		-
		By Balance Payment		
By Annual Marketing Harvests		By Annual Marketing Harvests		
By Promotional Marketing Harvests		By Promotional Marketing Harvests		

belong. This allows us to answer numerous questions which we could not answer if we viewed every single segmentation separately. Then we can find out, for example, what percent of travelling cardholders pay their balance in full or revolving or become delinquent and further subdivide these segments by geographical regions. The example to the right shows a menu with some possible Issuer segmentations. Only the segmentation by product and product brand is required for Issuer. Other segmentations are optional.

The following example shows the Issuer Income for the Forms of Payment segmentation. Notice how the maximum-term cardholders segment (i.e. card holders that extend their credit by making only the minimum monthly payments) is cross-referenced by the marketing campaign harvests. These market segmentations allow us to analyze the campaigns' effectiveness in selecting new credit-oriented cardholders with low incidence of delinquency.



The next example shows the Issuer Income for the Marketing Campaign Harvests segmentation, using a hierarchy that classifies them by type of promotional campaign.

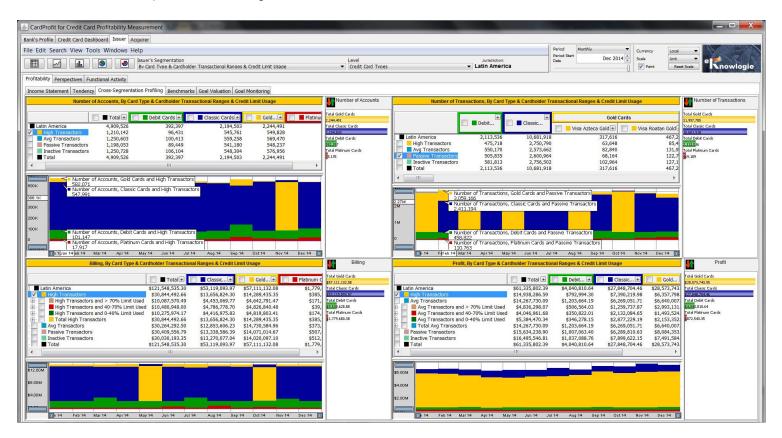


Intersecting or Crossing Credit Cards by Type with Cardholders by Transactional Frequency Ranges

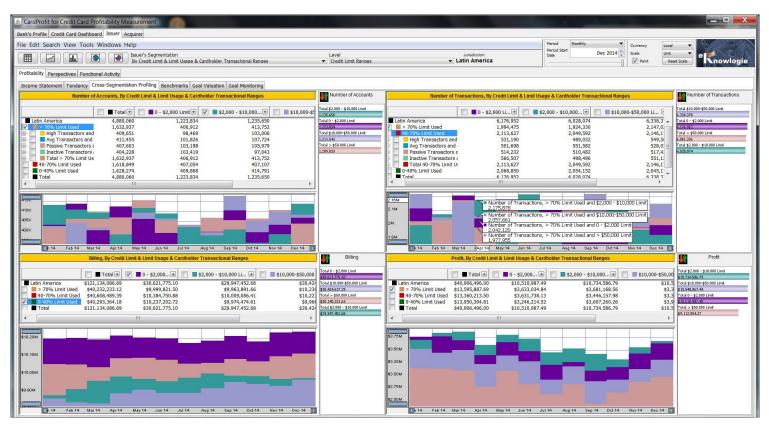
T

Product types (e.g. classic, gold, platinum) can be profiled by the expected percentage of cardholders in different transactional volume ranges (e.g. high transactors are cardholders who use the given card for most of their transactions and they contribute the majority of the transactional volume for that given product). The panel below shows the intersection or crossing of three segmentations, by product type, by cardholder transactional ranges, and by credit limit usage. Then we can readily identify how effective these products are in maximizing transactional volume according to their intended markets, and what cardholder population redistributions are necessary in order to increase these volumes towards the expected profiles.

Because of the hierarchical nature of these tables, card type columns such as Classic and Gold can be opened up so that specific products can be analyzed. Similarly, ranking bars can be shown for any level in the intersection, e.g. by card types, by card types per cardholder transactional type, or by product per cardholder transactional type. This hierarchical level management is conducive to the presentation of detailed insights which illustrate the comparative essence of these product populations and leads to informed recommendations and decision making. Again, figures in the example below are random and do not reflect the realistic expectations of these segment intersections.



In addition, other market segmentations such as cardholders by balance and credit limit utilization can be used to make these redistribution recommendations by identifying opportunities to retarget these cardholder populations. The panel below shows the intersection or crossing of three segmentations, by credit limit, by credit limit usage and by cardholder transactional ranges.

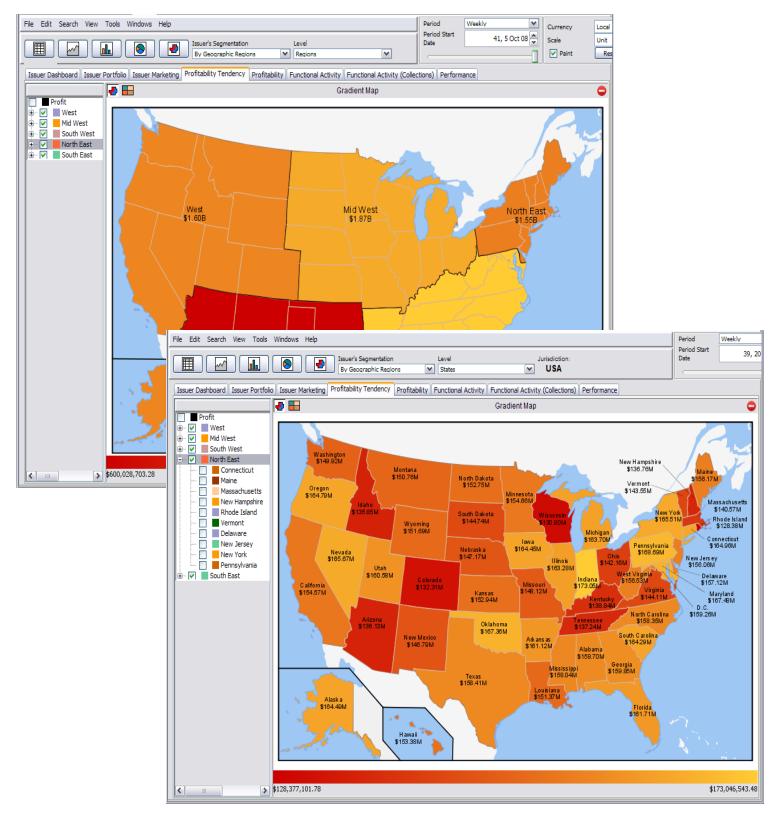


These segmentation crossings or intersections shown above are designed and configured by the user interactively using the panel below. This panel allows the user to cross or intersect any number of segmentations, in any order, and to specify the levels and segments that will be visible for each segmentation. This is an example of the power of this technology.

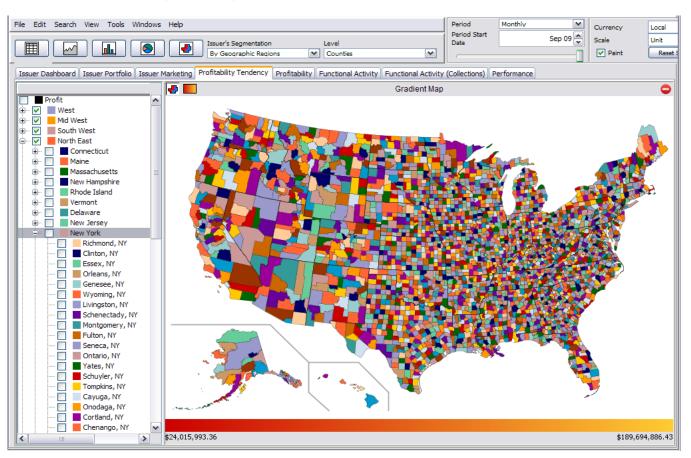
New Edit Delete	By Brand By Credit Limit By Socio-Economic Strata By Consumption Habits By Balance Payment By Annual Marketing Harvess By Promotional Marketing H	Add >> Remove << Save Cancel	Name: By Card Type X Carl By Card Type By Cardholder Transactional By Credit Limit Usage By Geography	Regions Countries Products Segments Included By Geography ▼ - Latin America ▼ ✓ Central and N. America ▼ ✓ Caribe ▲ Andes ▼ ▲ Atlantic ▶ ■ Brazil
-----------------------	---	---------------------------------------	---	---

1.6 Geographic Visualization

The panels below show CardProfit's scalable choropleth maps (color-coded statistical maps) displaying profitability indicators segmented geographically, where performance is visualized in a chromatic scale from red (lowest performance) to yellow (highest performance). As shown below, geographical segmentations can be visualized at their various hierarchical levels of detail.



Maps can also be used for color encodings other than gradient performance.



Profitability can be measured through a wide array of indicators as shown by the thumbnails in the following example.

	Comparison of Profitability Indicators By Geographic Regions				
Absolute Values	Per Active Account	Per Account			
Image: Section of the section of t	Russia Austria Slovakia Slovakia Bilovakia Bilovakia	Dzech Rop. Muthia Austria 11/12/L S Glovakla Moldova 00/22/L 4 Moldova 338 661.81 11/12/L S 00/22/L 4 Moldova 00/22/L 4 Moldova 42/10.38 € 11/12/L S 00/22/L 4 Moldova 00/22/L 4 Moldova Glovakla 00/22/L 4 Macdova Glovakla 00/22/L 4 Macdova Glovakla 00/22/L 4 Macdova Glovakla			
As % Income	As % of Accounts Balance	As % Billing			
Status Status Status Status <td< td=""><td>Slovařia 5 464.57 % Latvia 2 685,17 % Spain 2 686,28 % Azerbaijan 1 399,02 % Vatican Citi 1 295,86 % Azerbaijan 1 399,02 % Vatican Citi</td><td>Moldova 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 %</td></td<>	Slovařia 5 464.57 % Latvia 2 685,17 % Spain 2 686,28 % Azerbaijan 1 399,02 % Vatican Citi 1 295,86 % Azerbaijan 1 399,02 % Vatican Citi	Moldova 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 % 9 528.83 %			

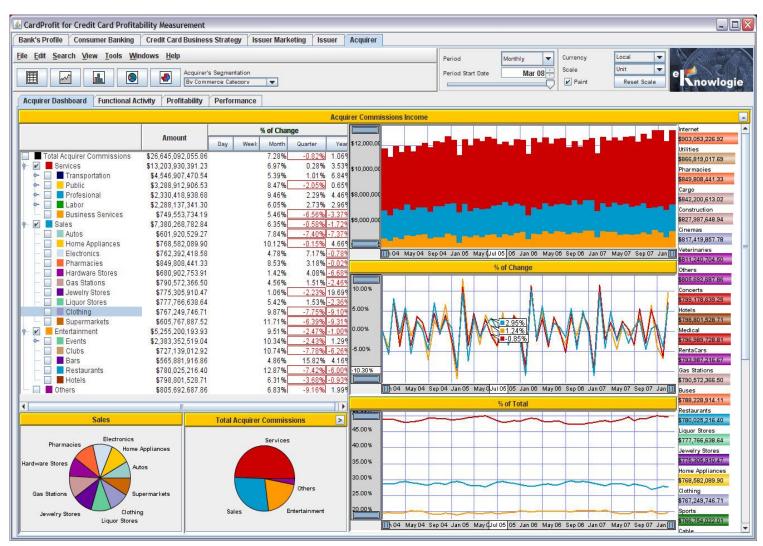
1.7 Issuer's Functional Activity

The following example shows in detail the indicators and variables of the Issuer's functional activity segmented by credit card brand. Observe how the popup help window explains the "Collections and Overdraft" category. These pop-up help windows exist not only to explain the CardProfit functionality, but also to describe each of the more than 1,100 indicators in the credit card business

nk's Profile Consumer Banking Credit Card Business Strategy	Issuer Marketing	Issuer Acquirer					
Edit Search View Tools Windows Help			Period	Weekly	Currency Loc	cal 💌	AND REAL PROPERTY.
							5 3
Issuer's Segmentation Bv Credit Card Brand			Period Star	rt Date 16, 13 Apr 08		e 🛛	nowlogi
suer Dashboard Functional Activity Functional Activity (Collecti	ons) Profitability	Performance Issu	er Comparative Portfolio				
		Issuer Function	onal Activity				
	(IIII)	Visa - +					
	Total	Total Visa +	Visa Classic +	Visa Gold +			Amex
Functional Activity							
🗂 1. New Account Acquisition	377,061	140,645	47,812	42,887	49,946	99,215	137
— D Total Number of Captured Credit Applications	377,061	140,645	47,812	42,887	49,946	99,21 <mark>5</mark>	137
 — D Initial Inventory of Credit Applications (without Processing) 	88,040	31,803	17,127	7,344	7,332	27,462	28
 Number of Credit Applications Captured by Promoters 	82,592	46,094	13,886	14,815	17,393	6,432	30
 Number of Credit Applications Captured by Preapproved Mailin 		22,970	Projected Val	12.406	1.011	13,005	21
 Number of Credit Applications Captured Via Telemarketing 	67,597	19,923		his variable for this specifi	nariad has not hean ve	21,347	26
Number of Credit Applications Captured Indirectly	80,976	19,855		databases and has been p		30,909	30
2. Credit Processing	89,547	27,011	-10 TT	0,000	1.010.01	23,388	39
3. Card Plastic Issuing	374,178	138,762	45,758	39,012	53,992	80,320	155
4. Transaction Processing	\$421,540,735.57	\$167,677,471.36	\$72,792,457.89	\$44,430,340.24	\$50,454,673.23	\$88,502,044.75	\$165,361,21
e 📑 Incoming Interchange	\$421,540,735.57	\$167,677,471.36	\$72,792,457.89	\$44,430,340.24	\$50,454,673.23	\$88,502,044.75	\$165,361,21
Coming Purchases	\$394,204,197.55	\$125,146,657.12	\$45,319,778.92	\$42,771,778.03	\$37,055,100.17	\$101,322,865.21	\$167,734,63 \$40,934,81
 Control of the set o	\$114,157,515.67 \$152,468,106,86	\$38,057,847.43 \$56,005,302.82	\$14,448,041.97 \$16,703,709,34	\$3,737,519.47 \$23,299.784.45	\$19,872,285.99 \$16,001,809,04	\$35,164,853.93 \$35.028,295,21	\$61,434,5
The international Incoming Purchases	\$127,578,575.01	\$31,083,506.86	\$14,168,027.61	\$15,734,474,12	\$1,181,005,14	\$31,129,716.07	\$65,365,36
- Amount	\$127,578,575.01	\$31,083,506.86	\$14,168,027.61	\$15,734,474.12	\$1,181,005.14	\$31,129,716.07	\$65,365,35
Average Amount	\$91.99	\$58.88	\$57.60	\$61.94	\$42.31	\$89.12	\$00,300,30 \$12
- Number	1.386.812	527.888	245,960	254.016	27,912	349.286	509
Total Incoming Purchases	\$394,204,197,55	\$125,146,657,12	\$45.319.778.92	\$42,771,778.03	\$37.055.100.17	\$101.322.865.21	\$167,734.67
Garmoning Parchases Incoming Credit Vouchers	\$395.865.604.09	\$116,572,955.03	\$30,466,441.27	\$49.211.005.23	\$36.895.508.53	\$100,335,685,63	\$178,956,96
Incoming Cash Advances	\$423,202,142,11	\$159,103,769,27	\$57,939,120,24	\$50,869,567,44	\$50,295,081.60	\$87,514,865,18	\$176,583,50
Total Incoming Interchange	\$1,213,271,943	\$400.823.381.43	\$133,725,340.42	\$142,852,350.70	\$124,245,690.30	\$289,173,416.01	\$523.275.14
C Total Incoming Interchange T Total Net Incoming Operations	\$421.540.735.57	\$167,677,471,36	\$72,792,457,89	\$44,430,340,24	\$50.454.673.23	\$88,502,044,75	\$165.361.2
		#1013013#11:00	W12,102,401.03	\$1,432,450.76	\$20.244.611.10	\$33,127,497.39	\$46,980.8
Total Net Incom				COD 260 422 50	\$13,948,515,83	\$24,778,493,42	\$52.623.62
	ition as a transaction i	that was not reversed. I	hese figures are the result		\$16,261,546,31	\$30,596,053,95	\$65,756,77
Carter and the processed in the procesed in the procesed in the processed in the processed in the proce	ncoming cardnoider p	urchase transactions (ii	icoming sales draπs), min	\$44,430,340.24	\$50,454,673.23	\$88,502,044.75	
Cardholder Authorizations	toming credit vouche	\$223,929,839.84	incoming cash advances. \$92,079,902.88	\$66,658,365.32	\$67.191.531.64		\$302.419.68
5. Cardholder Billing	\$870,928,534.42	\$299,493,519.86	\$98,390,934.15	\$102,628,369.08	\$98,474,216.63	\$203,621,722.97	\$367.813.29
6. Payments Processing	\$690,401,471.87	\$245.055.315.68	\$87.620.555.47	\$75,885,388.37	\$81,549,371.84	\$149,616,063,86	\$295,730.09
7. Cardholder Servicing	1.513.777	684,495	257,235	223,528	203,732	330,542	498
3. Promotion and Retention	\$553,466,231.37	\$173,517,939.35	\$61,461,104.52	\$53,202,040.97	\$58,854,793.85	\$135,379,321.81	\$244,568,97
9 Collections and Overlimit	C170 142 607 55	£70 007 010 00	\$15 650 226 FA	\$22.510,421.39	\$30,819,060.16	\$67,735,906.85	\$131,519,96
9. Collections and Overlimit				07.040.00	\$17,160,811.90	\$22,421,492.76	\$60,730,08
11. Issuer Center Adminis Operational Function of the Credit Card	Issuer Business Thi	s function consists mai	nly of the collections of deli	inquent 2.045	14,005	18,235	45
accounts' unpaid balances before they	are registered as loss	es, this also includes or	verlimit account analysis a	nd the			
tracking of excesive use with fraud poss							

2 Acquirer

All the CardProfit functionality shown for Issuer is also applicable to Acquirer. The example below shows the study page of the Acquirer Income, using a monthly period. Notice that commerce categories are shown ranked by their income for the currently selected period.



The example below shows the Acquirer business' functional and operational activity for each commerce category.

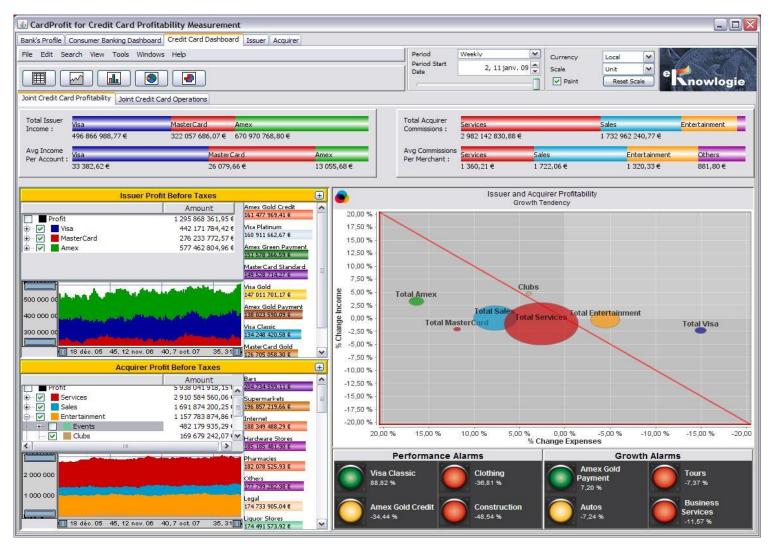
rdProfit for Credit Card Profitability Measurement r's Profile 🍸 Consumer Banking 🍸 Credit Card Busine		ier Marketing Issu	er Acquirer						_ 0	
<u>E</u> dit <u>S</u> earch <u>V</u> iew <u>T</u> ools <u>W</u> indows <u>H</u> elp					Period	Weekly 🗸 Curre	ency Local	.	ETCOMIN	
Acquirer's Segmentation By Commerce Category			Period Start Date 16, 13 Apr 08 Scale Unit Celevity Paint Reset Scale e				nowlogie			
quirer Dashboard Functional Activity Profitability	Performance									
			Acquir	er Functional Activity						
	+	+	+				Entertain	ment		
	Total	Services Sales			Events					
		Services	Jaies		Total Events +	Concerts +	Cinemas 🛨	Sports +	🔲 📕 Clu	
Functional Activity										
	\$3,205,711,694.04	\$1,608,097,881.24	\$904,942,233.20	\$594,456,704.01	\$270,137,572.82	\$102,012,818.55	\$91,722,424.87	\$76,402,329.41	\$75,186	
	\$3,205,711,694.04	\$1,608,097,881.24		\$594,456,704.01	\$270,137,572.82	\$102,012,818.55	\$91,722,424.87	\$76,402,329.41	\$75,186	
	\$1,626,256,072.99		\$471,747,468.59	\$304,682,482.90 \$13,220,779.47	\$129,426,867.32	\$51,668,474.45 \$2,292,305.10	\$35,202,436.84	\$42,555,956.03 \$1,797,246.93	\$38,343 \$2,196	
Outgoing Credit Vouchers	\$70,729,639.01 \$1.650.185.260.06	\$33,861,391.01	\$21,446,240.97 \$454,641,005.59	\$302,995,000,58	\$5,395,121.06 \$146.105.826.55	\$52,636,649,19	\$1,305,569.03 \$57,825,557,05		\$39.039	
			•					\$35,643,620.31		
	\$3,205,711,694.04	\$1,608,097,881.24		\$594,456,704.01	\$270,137,572.82	\$102,012,818.55	\$91,722,424.87	\$76,402,329.41	10 24 0 20	
	\$1,040,326,235.16	\$510,949,695.21	\$290,277,808.72	\$210,339,489.21	\$86,211,625.52	\$32,513,293.81	\$22,980,159.97			
	\$1,099,181,703.41 \$1,066,203,755,48		\$304,434,367.62 \$310,230,056.86	\$188,945,823.27 \$195,171,391,53	\$81,683,847.18 \$102.242.100.12	\$33,869,634.33 \$35,629,890,41	\$33,960,161.74 \$34,782,103,16	\$13,854,051.12 \$31,830,106,55	100000000000000000000000000000000000000	
	\$1,066,203,755.48 \$1,066,203,755.48		\$310,230,056.86	\$195,171,391.53	\$102,242,100.12	\$35,629,890.41	\$34,782,103.16	\$31,830,106.55 \$31,830,106.55	100000000000000000000000000000000000000	
Average Amount	\$1,000,203,755.48	\$348.64	\$310,230,000.80 \$220.56	\$195,171,391.53	\$102,242,100.12	\$35,629,890.41	\$1,302.07	\$463.58	\$11,000	
Number	3.831.396	1.512.460	1.406.571	910.849	231.255	135.880	26.713	\$403.58 68.662		
Land State	\$3.205.711.694.04	\$1.608.097.881.24	\$904,942,233.20	\$594.456.704.01	\$270.137.572.82	\$102.012.818.55	20,713 \$91,722,424,87			
Gutgoing Cash Advances by Non Merchants			\$494,399,429.21	\$332,487,663.60	\$123,696,376.69	\$49,911,487.36	\$33,694,982.21	\$40.089.907.12	10 10 20	
	\$2,099,410,010.01	\$1.044.167.893.29		\$392,187,717.84	\$143,059,248.29	\$58.574.661.99	\$49,666,707.65		\$52.299	
	\$4,781,811,999.62	\$2,257,017,051.40		\$1,013,169,041.53	\$429,428,072.27	\$130,438,950.43	\$141,533,106.62	\$157,456,015.22		
Merchant Admonzations	4,781,811,999.02 4,454,461	\$2,257,017,051.40 1.810.301	\$1,309,100,800.00 1.410,690	a1,013,109,041.53 1,191,109	\$429,428,072.27 494.077	\$130,438,950.43 256,316	\$141,533,100.02 20,750	\$157,450,015.22 217.011	\$139,002	
Merchant Affiliation	4,454,461	1.810.301	1,410,690	1,191,109	494,077	256,316	20,750	217,011		
Number of Affiliated Merchants	3,749,336	1.892.916	1,410,090	538,537	321.579	202.453	56.075	63.051		
- Avg Number of Affiliated Merchants for Period	5,109,262	2,408,493	1,192,303	1.006.587	506,367	78,493	252,578	175,296		
- Number of Active Merchants	4,454,461	1,810,301	1,410,690	1,191,109	494,077	256.316	20,750	217.011		
- Avg Number of Active Merchants for Period	4,333,277	1,927,215	1,410,030	858,117	532.324	220,587	172.659	139.078		
Number of Information Bulletins to Merchants		1,787,811	960,014	799.638	383.956	64,131	211.009	108,816		
- Number of POS Units	4,505,692	1.951.289	1.431.651	1.036.554	356,218	31.516	256.698	68.004		
- Ava Number of POS Units for Period	5,386,129	2,510,581	1,908,876	802.009	503,845	147.270	239,200	117.375		
- Number of ATM's	4.028.748	2,063,058	1,016,571	831,340	309,434	178,225	1,038	130,171		
Ava Number of ATM's for Period	4,223,512	1,980,041	1,167,516	955,119	431,706	212.670	131,950	87.086		
	\$1,662,832,623.58	\$819,796,452,19	\$443,729,578,90	\$343,139,973,73	\$144,798,214.35	\$45.422.758.39	\$48.063.331.83	\$51,312,124,13		
	\$1,109,044,975,47		\$309,899,719.44	\$220,171,762.25	\$99,904,784.15	\$33,358,873.70	\$36,384,702.38	· · · · · · · · · · · · · · · · · · ·	1.0	

3 Combined Issuer and Acquirer

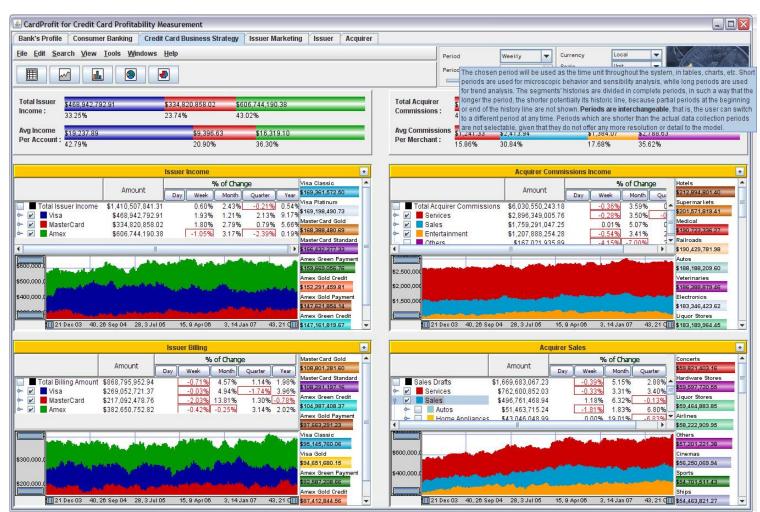
With respect to the credit card Issuer and Acquirer lines of businesses, CardProfit manages more than 1,100 different primary variables which are specific to such businesses. CardProfit can be started effectively with 25 variables from each business line and gradually extended as justified by the added benefit of additional measurements. CardProfit produces profitability and performance indicators by product or by any other arbitrary user-defined market segments, as well as operational figures and indicators of natural expenses and productivity specific to the functional areas of the Issuer and Acquirer businesses.

Each variable or unit indicator in the model can be visualized historically and through time periods of any duration. CardProfit can be configured for any currency and world region or locale. Although initially configured for English and Spanish, it can be easily configured for any other language.

CardProfit offers consolidated combined perspectives for multiple lines of businesses. The following dashboard shows combined Issuer and Acquirer profitability tendencies. The indicators represented in this bubble chart are normalized, which permits the comparison of otherwise heterogeneous segments from both lines of businesses. Notice that the values in these examples have been generated randomly and thus they are not realistic.



The following example shows another dashboard for the Issuer and Acquirer businesses. Each mini panel can be maximized in order to visualize it in more detail and with additional instrumentation. Notice one of the many pop-up help windows, which in this case describes the use of time periods throughout the application.



4 Client's Running Environment

The CardProfit Server architecture is highly scalable and is designed to run in the cloud under elastic servers with massive storage and processing capacity. CardProfit clients run in 64 bit Windows 7, 8 and 10 laptops. CardProfit makes use of multi-processor architectures for parallel execution of computation-intensive calculations.

