

Beyond Risk Assessment: How to Integrate Your Business Strategy with Your Enterprise Risk Management Program

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Can we take more risk and remain safe?

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You Got This?



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Still Think So?



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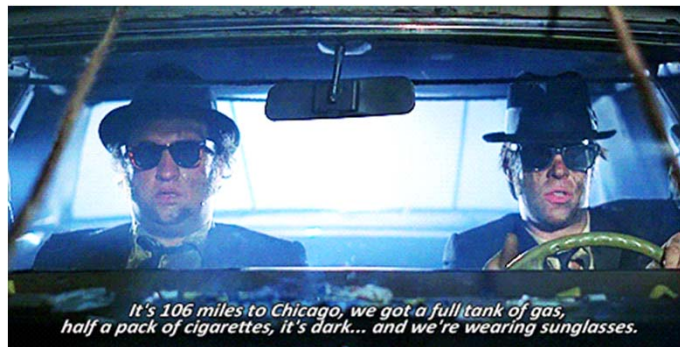


What actions can we take to make enterprise risk management programs more strategic?

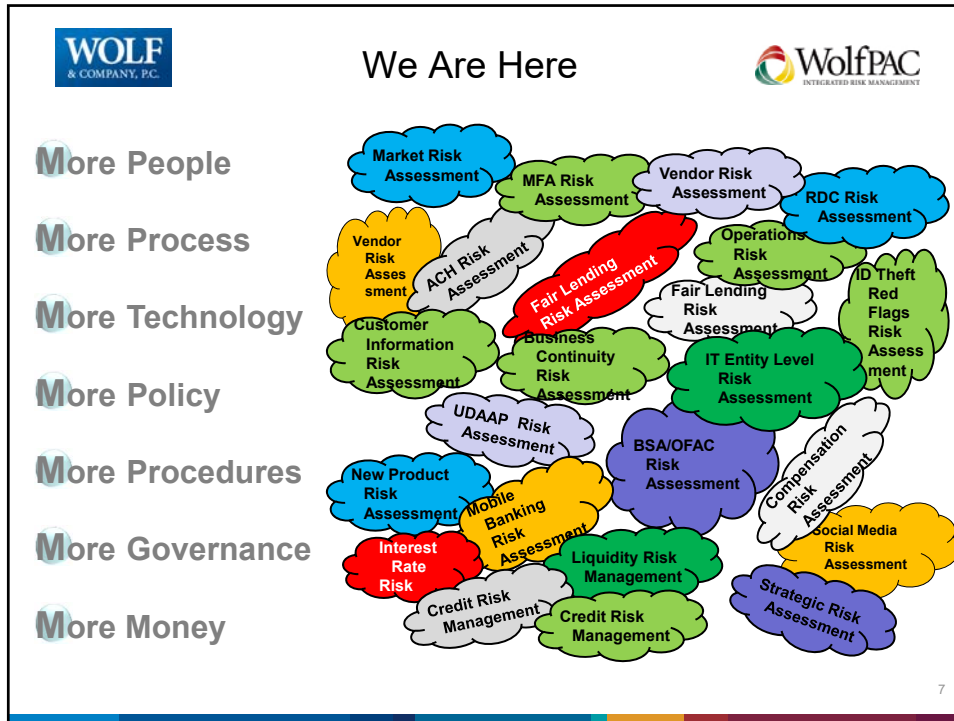
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You Need a Plan!



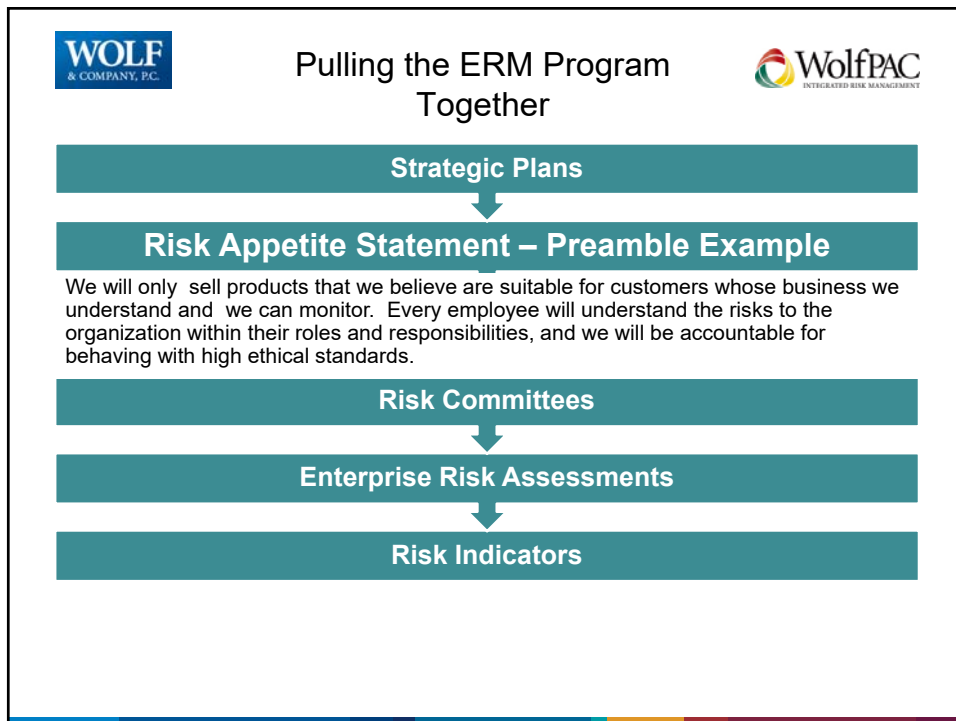
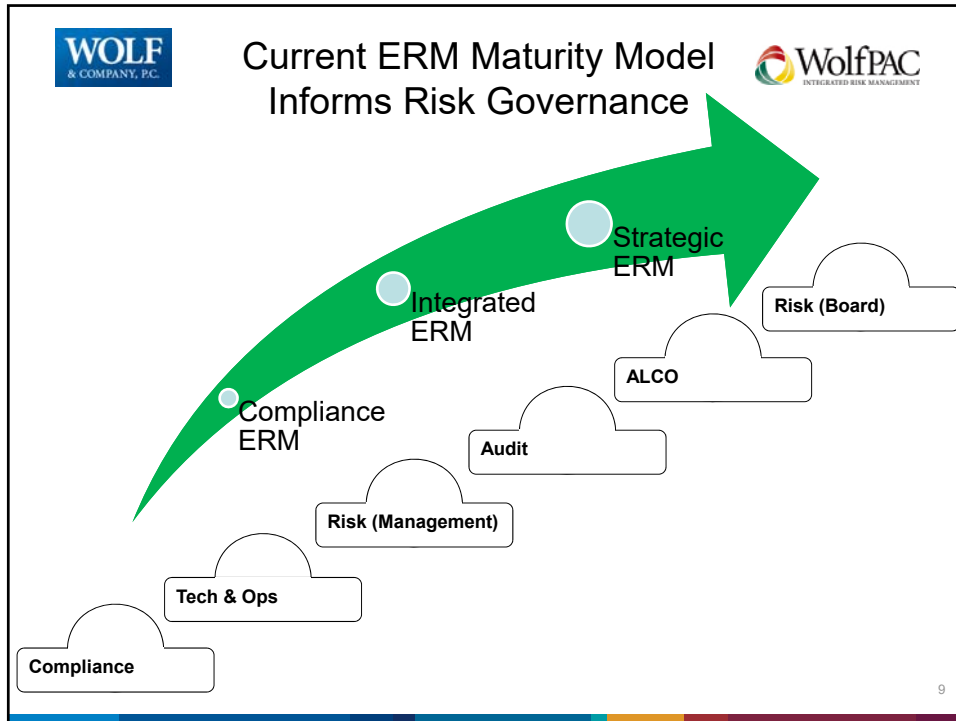
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WOLF & COMPANY, P.C. **Emerging Threat Landscape** **WolfPAC INTEGRATED RISK MANAGEMENT**

| Today's Threats | Emerging Threats Areas |
|---|---|
| <p>OPERATIONS:</p> <ul style="list-style-type: none"> • Technology risk • Cyber risk • Multi-factor authentication risk • Model risk • Privacy risk • Transaction risk • ACH risk • RDC risk • Mobile Banking risk • Regulatory Compliance risk • BSA/OFAC risk • Fair Lending risk • UDAAP risk • Social Media risk | <ul style="list-style-type: none"> • Vendor risk • Business Continuity risk • Legal risk • Compensation risk • Financial Reporting risk <p>MARKET:</p> <ul style="list-style-type: none"> • Credit risk • Interest Rate risk • Liquidity risk • Foreign Exchange risk • Price risk <p>New Product risk Strategic risk Reputation risk</p> <ul style="list-style-type: none"> • Profit risk • Board of Director risk • Key Employee risk |

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Mapping Your Enterprise Risk DNA


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“What Can Kill You vs. What Just Hurts”



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Your Risk DNA Map



| Products and Services | Strategic | Reputation | Operations | | | | Customer Information | Regulatory Compliance | Market | | | |
|---------------------------|-----------|------------|-------------|------------------------|--------|---------------------|----------------------|-----------------------|--------|---------------|-------|-----------|
| | | | Transaction | Information Technology | Vendor | Business Continuity | | | Credit | Interest Rate | Price | Liquidity |
| RETAIL BANKING | | | | | | | | | | | | |
| Personal Checking | L | H | H | H | H | H | H | H | L | L | L | L |
| Business Checking | H | M | L | H | H | H | L | M | L | L | L | L |
| Savings Accounts | L | H | H | H | H | M | H | H | L | L | L | L |
| Retail CD | L | H | L | H | H | M | M | M | L | L | L | L |
| Internet Banking | H | H | H | H | H | H | H | H | M | M | M | M |
| LENDING | | | | | | | | | | | | |
| Residential Mortgages | M | H | M | H | H | M | H | H | H | H | H | M |
| Home Equity | L | M | L | H | H | M | H | H | H | H | L | M |
| Consumer | L | M | L | M | M | M | M | M | H | M | M | M |
| Commercial Real Estate | H | M | M | M | L | H | L | M | H | H | H | H |
| Asset Backed | H | M | M | M | L | M | L | M | H | H | H | M |
| C & I | H | M | M | M | L | H | L | M | H | H | H | M |
| INVESTMENTS | | | | | | | | | | | | |
| Trusts & IRA | L | M | M | L | H | L | H | H | L | L | M | L |
| Brokerage | M | M | H | H | H | H | H | H | L | L | L | M |
| BUSINESS SERVICES | | | | | | | | | | | | |
| Cash Management | M | M | L | H | H | M | M | M | M | M | M | M |
| Merchant Card Services | M | M | M | M | M | M | M | M | M | M | M | M |
| CORPORATE SERVICES | | | | | | | | | | | | |
| Treasury Management | M | H | H | M | H | M | M | M | L | M | M | H |
| IT Operations | L | M | L | H | M | H | L | L | L | L | L | L |

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“Risk assessment is not the end but the end of the beginning.”

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Risk Assessment – Are We Done?



1. Control Testing
 - Are our junior associates processing transactions safely?
2. Monitoring
 - Are our business processes functioning safely?
 - E.g.; Vendor. Compliance.
3. Policies & Procedures
 - Did management construct an environment to operate safely?
4. Key Risk Indicators
 - Can we reasonably evaluate if we will perform safely tomorrow?

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Key Risk Indicators

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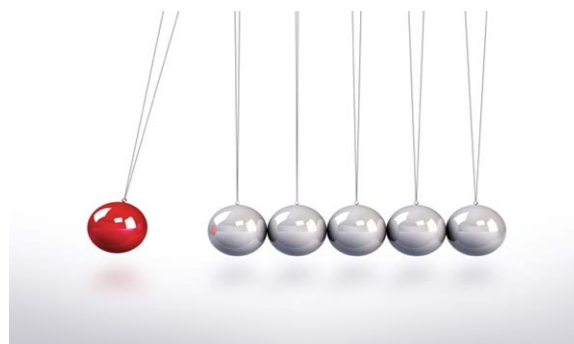
Key Risk Indicators



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Our Risk Indicator Challenge



Quantitative Measures

- Credit Risk → Stress Testing
- IRR → Earnings Simulation
- Liquidity Risk → Capital Management

Qualitative Measures

- Vendor Risk → Monitoring
- IT Risk → Monitoring
- Compliance → Monitoring

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We Typically See Several Hundred Risk Indicators



| INDICATOR NAME | INDICATOR NAME | INDICATOR NAME | INDICATOR NAME |
|--|---|--|--|
| Credit | Allowance to total nonaccrual loans | Products | Net change in core deposits |
| Monthly comparison of: | Allowance to total loans | Collateral Type | Net change in new accounts versus closed accounts |
| Commercial & Residential Loans by types | Non-performing assets to total assets | Geographic (by county) | Trend Analysis |
| a. Growth numbers quarterly | Total loans to total assets | Concentration limits by product type including security assets | ALCO |
| Percentage of loan types over total loans | OREO to total assets | Risk rating migration by loan type | Quarterly Ratio Reporting including Peer |
| Non-accrual and non-performing loans residential | Other assets to total assets | Loan balances by risk rating by loan type | Interest Income/Avg Earning Assets |
| Non-accrual and non-performing loans commercial | Net charge offs to total loans | Loans with policy exceptions | Interest Expense/Avg Earning Assets |
| OREO | a. By type - Consumer and Commercial/CRE | % with details by type of exception if significant | Net Int Income/ Avg Earning Assets |
| ALL | OREO to average assets | Capital | Net Non-Core Funding Dependency Ratio |
| 30 day and over past due commercial & residential loan | Classified assets to capital | Tangible ratio | Excluding CDs over \$100 thousand |
| a. Include aggregate past due and non-accrual loans | Total Past due & nonaccrual loans as % of each loan | Tier 1 Ratio | Excluding CDs over \$250 thousand |
| Overdrawn tax escrow balances | Non-performing as % of each loan category | Total Risk Based Capital | ST Non-Core Funding Dependency to Total Assets |
| Charge-offs by type of asset/loan type | Number of delinquent notes by loan category | Tangible common equity | ST Non-Core Funding Dependency to Total LT Assets |
| Broker Monitoring | Charge-off ratios by loan/asset type as % | Annual market share | Core Deposits as % of Awer Assets |
| Repurchase Claims | Quarterly LTV and DTI and Credit scores by loan type | Stress test results | Brokered Deposits to Deposits |
| QC review statistics (monitoring oversight of 1st line) | % of risk rating downgrades made by loan review function, rather than by loan officer | Liquidity/Funding | Brokered Deposits Maturing less than 1 Year to Brokered Deposits |
| Loss Mitigation (Servicing) | Quarterly | Total Liquid Assets to Total Assets | Growth in categories of loans and deposits |
| | CRE Concentration for 100% & 300% ratio | Unencumbered Liquid Assets to Total Assets | On-hand liquidity ratio |
| Monthly/Quarterly ratios of: | Concentrations exceeding 25% of Risk Based Capital | 1, 3, 12 month base and stress iflows to total outflows | Outside bank rating - Moody's, S&P, IRA |
| Nonaccrual commercial loans to total commercial loans | Individual Borrower | BASEL III Ratios (LCR & Net Stable Funding Ratio) | NII at risk and EVE at risk sensitivity calculations |
| a. Peer ratios and regulatory classified/criticized ratios | Small Inter-related Groups | Borrowings maturing or putable | Gap measures |
| Nonaccrual loans to total loans | Individual Project | Single non FHLB provider | Loans/Assets |
| a. Peer ratios and regulatory classified/criticized ratios | Single Repayment Source | Deposits | Investments/Assets |
| Nonaccrual loans and OREO to total assets | Concentrations exceeding 100% of Risk Based Capital | DDA overdrafts over 60 days | Loans/Deposits |
| Allowance to non-accrual commercial loans | Industry | DDA overdrafts in excess of \$5,000 | Efficiency Ratio |


Can 30-50 Key risk indicators keep the institution safe?




Does Your Institution Look Like This?



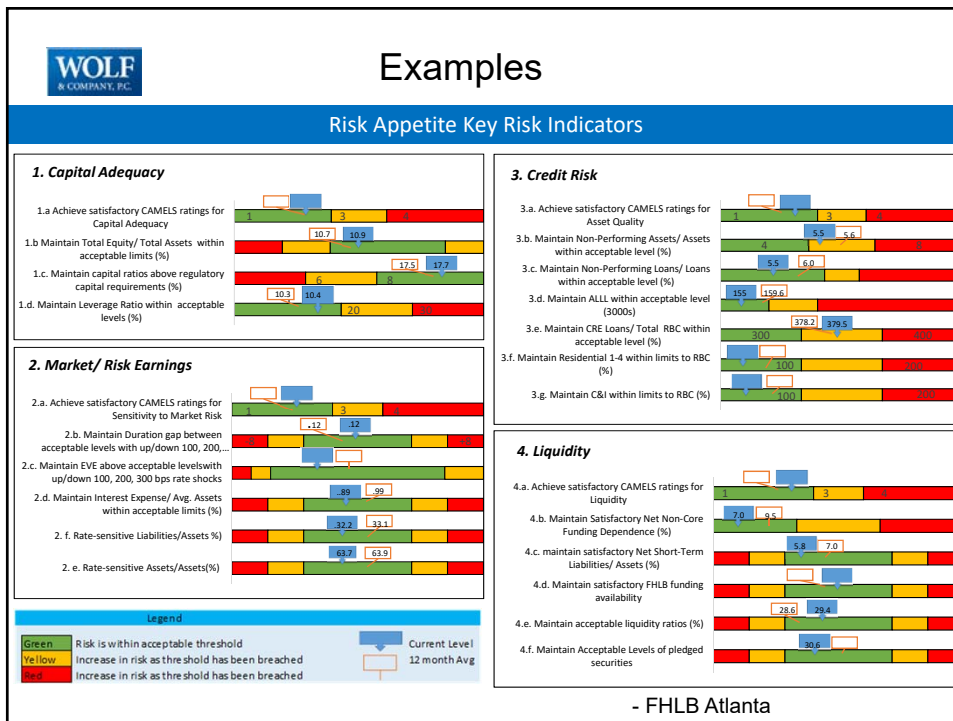
| Functional Risk Area | Number of Risk Indicators |
|-----------------------------|---------------------------|
| Credit risk | 72 |
| Interest Rate risk | 52 |
| Liquidity risk | 38 |
| Regulatory Compliance risk | 31 |
| Transaction risk | 21 |
| Information Technology risk | 21 |
| Reputation risk | 14 |
| Vendor risk | 12 |
| Strategic risk | 6 |
| Business Continuity risk | 3 |
| Customer Information risk | 3 |
| Price risk | 2 |
| TOTAL | 275 |



Uncovering the Gaps Creates Opportunities for Improvement



| Products and Services | Strategic | Reputation | Operations | | | | | Customer Information | Regulatory Compliance | Market | | | |
|---------------------------|-----------|------------|-------------|------------------------|--------|---------------------|--------|----------------------|-----------------------|---------------|-------|-----------|--|
| | | | Transaction | Information Technology | Vendor | Business Continuity | Credit | | | Interest Rate | Price | Liquidity | |
| RETAIL BANKING | | | | | | | | | | | | | |
| Personal Checking | 10 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 30 | 0 | 7 | |
| Business Checking | 10 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 30 | 0 | 7 | |
| Savings Accounts | 10 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 30 | 0 | 7 | |
| Retail CD | 10 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 30 | 0 | 7 | |
| Internet Banking | 0 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | |
| LENDING | | | | | | | | | | | | | |
| Residential Mortgages | 9 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 17 | 1 | 0 | 0 | |
| Home Equity | 9 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 17 | 1 | 0 | 0 | |
| Consumer | 6 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 15 | 1 | 0 | 0 | |
| Commercial Real Estate | 18 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 30 | 30 | 0 | 3 | |
| Asset Backed | 11 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 25 | 30 | 0 | 3 | |
| C & I | 11 | 1 | 1 | 1 | 8 | 3 | 2 | 3 | 25 | 30 | 0 | 3 | |
| INVESTMENTS | | | | | | | | | | | | | |
| Trusts & IRA | 2 | 1 | 1 | 1 | 8 | 3 | 2 | 4 | 2 | 0 | 0 | 0 | |
| Brokerage | 0 | 1 | 3 | 1 | 8 | 3 | 2 | 4 | 1 | 0 | 0 | 0 | |
| BUSINESS SERVICES | | | | | | | | | | | | | |
| Cash Management | 0 | 1 | 1 | 1 | 8 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | |
| Merchant Card Services | 0 | 1 | 1 | 1 | 0 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | |
| CORPORATE SERVICES | | | | | | | | | | | | | |
| Treasury Management | 6 | 0 | 2 | 1 | 8 | 3 | 0 | 2 | 0 | 13 | 3 | 26 | |
| IT Operations | 0 | 0 | 0 | 12 | 10 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | |



| ACCEPTABLE TARGET LEVELS | | BENCHMARK TRIGGER | 3/31/2017 | | 6/30/2017 | | 9/30/2017 | | 12/31/2017 |
|---|----------------------------|-------------------|-----------|---------|-----------|---------|-----------|--------|------------|
| STRATEGIC/EARNINGS and EARNINGS VOLATILITY | | | | | | | | | |
| Efficiency ratio less than 75% (Expenses as a % of revenue) | >=75% | 69.58% | ↑ | 79.51% | ↓ | 75.44% | ↑ | 82.90% | |
| CREDIT RISK | | | | | | | | | |
| Concentration Ratio (outstanding loan balance / total Bank capital): 450% Residential loans | >=450% | 338.81% | ↓ | 330.52% | ↓ | 322.80% | ↑ | 327.08 | |
| LIQUIDITY | | | | | | | | | |
| Basic Surplus - Core (as a % of Assets) > 4% | <=4% | 4.04% | ↑ | 4.14% | ↑ | 4.30% | ↑ | 8.09% | |
| INFORMATION TECHNOLOGY and INFORMATION SECURITY RISK | | | | | | | | | |
| # of missing Microsoft patches on workstations >30 days=TBD | TBD - Trending in progress | | | 17 | ↓ | 9 | ↑ | 20 | |
| # of viruses in last 30 days =0 | 0 | 0 | ↑ | 2 | ↓ | 0 | ↑ | 1 | |
| # of systems that are utilizing greater than 80% of disk usage <=5 | >=5 | 14 | ↓ | 9 | ↑ | 10 | NC | 10 | |
| # of systems that are utilizing greater than 40% of CPU usage =0 | 0 | 0 | NC | 0 | NC | 0 | NC | 0 | |
| VENDOR RISK | | | | | | | | | |
| # of high risk vendors that have a red flag (unsatisfactory in one of their monitoring tasks) <5 | >=5 | 0 | ↑ | 1 | ↑ | 2 | NC | 2 | |
| # of moderate risk vendors that have a red flag (unsatisfactory in one of their monitoring tasks) <10 | >=10 | 1 | NC | 1 | NC | 1 | ↑ | 2 | |




Cost of Risk Management



**“Not until you measure it
can you make it cost less!”**



**No Consolidated Risk Management
Budget**



| Expense Item | Expense Item | Expense Item | Expense Item |
|---|---|---|---|
| Account disclosures | Consulting for Auditing | Internal Audit | Penetration tests |
| Adverse action notices | Correspondent bank loans | Internal Audit Oversight | Periodic statement disclosures |
| Adverse action notices (incl. FCRA) | Cost of sterile reserves | IRP Plan Mgmt and Testing | Privacy notices: annual mailout |
| Advertising | Cost of sterile reserves | IRR | Privacy notices: opt-out maintenance |
| Alarm Monitoring | CRA Committee - meeting prep | ISO and staff effort | Providing cr. scores to mort. applicants |
| ALCO Modeling (in-house time) | CRA performance context | IT Audit Services | Providing disclosures to customers |
| ALCO Modeling Software | CTR reporting | IT Audit Services Oversight | Proximity cards |
| Anti-virus | Customer notification of negative info. | Legal review of contracts | R&D in regards to Compliance with new laws |
| APR disclosure | Data management | Loan limit monitoring | Regulatory Exam |
| Avg. of annual reporting per month | Determinates of hold notices | Locks | Reputation monitoring |
| Avoiding use of medical information | DVR recording devices | Mailing provisional credit letters | Risk assessment performance and management |
| Background checks | Error resolution | Maintaining CRA public file | Risk assessment software |
| Assistance with customer FEMA, LOMA and LOMR requirements | Filing documentation | Management of all of the above items within Software/hardware | Robbery training |
| BCP Plan Mgmt and Testing | Financials on critical vendors | Monitoring "related interests" | SAR reporting |
| BCP Software | FinCen requests | Monitoring 3-day rescission rule | Schedule notices (initial, ATM, teller windows) |
| Board prior approval | Firewall | Monitoring WDs to MMDA's | Security awareness training |
| Cameras | FM200 Gas System | Monitoring services | Servicing disclosure |
| Change in term/CD renewal discl. | Fraud alerts | Monitoring to avoid discrimination | Single Signon software |
| Completion of calculation worksheet | Handling disputes and blocking info. | Network based IDS/IPS | Social engineering tests |
| Compliance Monitoring | HMDA software | OFAC list and monitoring | Training (AIB, seminars, workshops, schools) |
| Compliance Monitoring Oversight | Home Owners Equity Protection Act (HOEPA) | Outside consultants, attorneys and auditors | Training materials (guide, books, subscription) |
| Consultants for Monitoring | Host based IDS/IPS | Paperwork on each loan (LAR report) | US Patriot Act: Customer |
| Consultants or auditors | Independent Loan Review | Patch management | US Patriot Act: monitoring high-risk customers |



Allocate the Costs of Risk Management



| Products and Services | Strategic | Reputation | Operations | | | | Customer Information | Regulatory Compliance | Market | | | | TOTAL |
|---------------------------|-----------|------------|-------------|------------------------|--------|---------------------|----------------------|-----------------------|--------|---------------|-------|-----------|---------|
| | | | Transaction | Information Technology | Vendor | Business Continuity | | | Credit | Interest Rate | Price | Liquidity | |
| RETAIL BANKING | | | | | | | | | | | | | |
| Personal Checking | | | 12,000 | 10,000 | | 5,364 | | 30,000 | | | | | 57,364 |
| Business Checking | | | 1,000 | | | 5,000 | | 15,000 | | | | | 21,000 |
| Savings Accounts | | | | | | | | 15,000 | | | | | 15,000 |
| Retail CD | | | 1,500 | | | | | | | | | | 1,500 |
| Internet Banking | | | 6,000 | | | | | | | | | | 6,000 |
| LENDING | | | | | | | | | | | | | |
| Residential Mortgages | | | 12,000 | 5,000 | | 5,000 | | 40,000 | 8,000 | 5,400 | | | 75,400 |
| Home Equity | | | 6,000 | | | | | 20,000 | | | | | 26,000 |
| Consumer | | | 4,000 | | | | | 30,000 | | | | | 34,000 |
| Commercial Real Estate | | | 5,000 | | | | | | 8,000 | 7,500 | | | 20,500 |
| Asset Backed | | | 5,000 | | | | | | | 4,000 | | | 9,000 |
| C & I | | | | | | | | | 4,440 | 7,500 | | | 11,940 |
| INVESTMENTS | | | | | | | | | | | | | |
| Trusts & IRA | | | 10,000 | | | 5,000 | | | | | 3,000 | | 18,000 |
| Brokerage | | | 6,000 | | | | | | | | | | 6,000 |
| BUSINESS SERVICES | | | | | | | | | | | | | |
| Cash Management | | | 3,500 | 5,000 | | 3,000 | | | | | | | 11,500 |
| Merchant Card Services | | | 3,000 | | | | | | | | | | 3,000 |
| CORPORATE SERVICES | | | | | | | | | | | | | |
| Treasury Management | | | | | | | | | | | | 5,000 | 5,000 |
| IT Operations | | | | 13,000 | | | | | | | | | 13,000 |
| TOTAL | | | 75,000 | 33,000 | | 23,364 | | 150,000 | 20,440 | 24,400 | 3,000 | 5,000 | 334,204 |

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Uncovering the Gaps Creates Opportunities for Efficiency



| Products and Services | Strategic | Reputation | Operations | | | | Customer Information | Regulatory Compliance | Market | | | | TOTAL |
|---------------------------|-----------|------------|-------------|------------------------|--------|---------------------|----------------------|-----------------------|--------|---------------|-------|-----------|---------|
| | | | Transaction | Information Technology | Vendor | Business Continuity | | | Credit | Interest Rate | Price | Liquidity | |
| RETAIL BANKING | | | | | | | | | | | | | |
| Personal Checking | | | 12,000 | 10,000 | | 5,364 | | 30,000 | | | | | 57,364 |
| Business Checking | | | 1,000 | | | 5,000 | | 15,000 | | | | | 21,000 |
| Savings Accounts | | | | | | | | 15,000 | | | | | 15,000 |
| Retail CD | | | 1,500 | | | | | | | | | | 1,500 |
| Internet Banking | | | 6,000 | | | | | | | | | | 6,000 |
| LENDING | | | | | | | | | | | | | |
| Residential Mortgages | | | 12,000 | 5,000 | | 5,000 | | 40,000 | 8,000 | 5,400 | | | 75,400 |
| Home Equity | | | 6,000 | | | | | 20,000 | | | | | 26,000 |
| Consumer | | | 4,000 | | | | | 30,000 | | | | | 34,000 |
| Commercial Real Estate | | | 5,000 | | | | | | 8,000 | 7,500 | | | 20,500 |
| Asset Backed | | | 5,000 | | | | | | | 4,000 | | | 9,000 |
| C & I | | | | | | | | | 4,440 | 7,500 | | | 11,940 |
| INVESTMENTS | | | | | | | | | | | | | |
| Trusts & IRA | | | 10,000 | | | 5,000 | | | | | | 3,000 | 18,000 |
| Brokerage | | | 6,000 | | | | | | | | | | 6,000 |
| BUSINESS SERVICES | | | | | | | | | | | | | |
| Cash Management | | | 3,500 | 5,000 | | 3,000 | | | | | | | 11,500 |
| Merchant Card Services | | | 3,000 | | | | | | | | | | 3,000 |
| CORPORATE SERVICES | | | | | | | | | | | | | |
| Treasury Management | | | | | | | | | | | | 5,000 | 5,000 |
| IT Operations | | | | 13,000 | | | | | | | | | 13,000 |
| TOTAL | | | 75,000 | 33,000 | | 23,364 | | 150,000 | 20,440 | 24,400 | 3,000 | 5,000 | 334,204 |

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Uncovering the Gaps Creates Opportunities for Efficiency



| | Strategic | Reputation | Operations Risk | | | | Customer Info. | Regulatory Compliance | Market Risk | | | |
|-------------------------|-----------|------------|-----------------|-------------|----------|-----------------|----------------|-----------------------|---------------|-----------|----------|-----------|
| | | | Transaction | Info. Tech. | Vendor | Bus. Continuity | | | Interest Rate | Credit | Price | Liquidity |
| Average Risk Rating | 3.1 | 3.4 | 3.7 | 3.9 | 4.0 | 3.5 | 3.9 | 3.6 | 4.0 | 3.5 | 3.0 | 4.0 |
| Cost of Risk Management | \$45,677 | \$132,852 | \$404,928 | \$422,611 | \$65,924 | \$171,094 | \$91,140 | \$929,799 | \$61,054 | \$313,268 | \$17,266 | \$13,355 |

Key Observations:

- 1) IT and Transaction control costs are high because the threats are changing
- 2) Compliance control costs are high due to zero tolerance
- 3) Interest Rate, Price, and Liquidity control costs are low because of efficiencies

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Final Take Aways



1. Measure your Enterprise Risk DNA
 - Strategic Plan → Risk Appetite → Enterprise Risk Assessment
2. Align KRI with High Risk Threats
 - Management KRIs → Executive KRIs → Board KRIs
3. Reduce the Cost of Risk Management

Bottom Line: Seize the Opportunity to make ERM a strategic asset, not a check-the-box process.

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Final Thought

*“Amateurs built the ark,
professionals built the Titanic.”*

unknown

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Thank You!



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