

## Developing a robust CRM Analytics strategy for Hedge Fund institutions to improve investment diversification

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**Abstract:** In this paper, we explore how the international financial community can build a sustainable and adaptive financial sector that supports stable and efficient institutions of finance in both accelerating and declining global markets. The analysis, viewed from the side of public policy makers and private decisionmakers. We discuss systemic under provision of innovation driven by both homogenous competition in the financial industry and asymmetric requirement for heterogeneous innovations leading to two main problems: stagnant growth due to a lack of economic breakthrough, and unstable exposures caused by concentrated lowprobability highseverity risk events borne within opaque institutions. It describes the features of a properly created financial system, and it serves as a bullseye for those who build structures and institutions for the financial architecture. In order to address inherent risks and attain this ideal, the paper presents best practices that include a changemanagement framework allowing dynamic adaption to current market conditions. The paper suggests an enterprise risk management framework to enable sound financial service institutions. It is designed to reinforce value creation, curb opportunistic behavior, constantly manage riskreturn optimization and promote sustained improvement in the performance of institutions. The paper ends with policyrelevant reflections and words of caution around enacting the suggested framework for aligning dynamic outcomes between industry and investors, as well as enhancing institutional riskadjusted value.

**Keywords:** global financial environments; instabilities exposures; stagnations growth; Basel Accords; systematic risks; incomplete risk spreading; imperfect information sharing.

### **I. Introduction**

In the international setting, it has taken place alongside periods of maximum financial boom and bust, including institutional along useful development in monetary intermediaries. The industry is capable and shows resilience managing systemic risks that are pervasive as well as episodic crises, but structural information asymmetries expose the weaknesses of the industry. Such misaligned interests can create pressure for abuse, as in the case of principalagent frictions or regulatory arbitrage.

Although the best of intentions have been made towards preserving national market sovereignty, aggressive internationalization has still burgeoned for many institutions as they seek out money centres and offshore tax havens to universal banks. It allows them to bypass market frictions while optimizing their gain. These institutions help the world economy by reducing transaction costs, strengthening payment transfer, facilitating information sharing and risk allocation, but these do come with a cost to society or larger risks. In fact, these very same institutions can be central mechanisms of systemic instability. The Basel Committee on Banking Supervision has been striving to create consultative governance benchmarks for the safety and soundness of banks that are international in their activities since mid1970s. The



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most recent version, Basel III, extends supervisory directives beyond the three-pillar prudential capital standard and adds a global liquidity standard. The standard in question hopes to prepare institutions for short-term financial distress as well as long-term funding mismatches. Implications of Basel III are far-reaching due to the signaling that voluntary compliance by nonregulated participants provide for trustworthiness and potentially stricter service quality. Key for emerging financial sector is alignment with optimal on and off-balance sheet portfolio adjustments, constrained by the changing prudential capital and global liquidity standards. It represents an important standard for making larger strategic changes. Basel III consists of a number of important amendments to these standards, including

- **Stronger Capital Requirements:** Basel III raises the bar on minimum capital requirements for banks and reduces their incentive to take excessive risk. This consists of a larger common equity Tier 1 capital, extra buffers for conservation of capital, and addition of countercyclical buffer.

**Increased Range of Regulated Risks:** The framework broadens the definition of regulated risk both by type (including counterparty credit risk, securitization exposures and exposures to GSIFIs) and location (covering a wider range of activities and markets).

- **Leverage Ratio:** A leverage ratio is proposed to limit excessive leveraging and to serve as a backstop for risk-based capital standards.

- **Liquidity Requirements:** Basel III creates two completely new recurring demands to fill for financial institutions, the Liquidity Coverage Ratio (for short-term resiliency needs) and the Net Stable Funding Ratio (to address long-term funding mismatches)

The rules will have sweeping impacts on the capital planning, risk management practices and overall business strategies across financial institutions. For developing financial industries these standards should be taken very carefully as their financial service institutions will have to remain stable and sustain. By encouraging institutions in developing markets to voluntarily adopt these standards this will strengthen their legitimacy and entice them to participate for the greater gain of foreign direct investment.

## II. Impact of Fundamental Factors on Financial Industry and Its Services

Systematic risk, or the risk that value can be impaired by cash flow losses that affect all actors in a financial system, is always a feature of capital markets. As a non-diversifiable, it is an amplifier of weaknesses and it threatens the people and institutions. In a free market, since people are acting independently and in their own self-interest, you cannot manage for systematic risk. But rational behavior and observable variables are quantitatively predictable. Systematic risk factors include: short-term interest rate movement, medium-term asset price change (inflation), long-term change in return (correlations), unexpected changes in domestic policies; and global economic or financial shocks. Rising systematic exposures can negatively impact market participants but those seeking shelter must adapt. Such adaptations often correspond to strategic choices about consumption investment allocation, portfolio selection, matching of durations, dynamic lending and borrowing as well as insurance contracts.

Table 1 Systematic Risk versus Systemic Risk in Global Financial Environments



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Systematic Risk	Systemic Risk
1. Affecting everyone in the system and being undiversifiable any further from an individual's financial portfolio	1. Being caused by anyone in the system and tending to be fully concentrated in some institutions' business portfolio
2. Uncontrollable due to demand-supply dynamics in an open and freely competitive system	2. Controllable by directly addressing institutional weaknesses and/or systemic imperfections
3. More predictable due to recurring external variables through quantitative methods	3. Less predictable due to evolving human behavior that is less than rational and/or ethical
4. Manageable by <ul style="list-style-type: none"> <li>• Hedging risk to lock-in future outcomes</li> <li>• Insuring risk to opt for better outcomes</li> </ul>	4. Manageable by <ul style="list-style-type: none"> <li>• Disclosure and transparency</li> <li>• Discipline and self-regulation</li> </ul>

Unlike systematic risk that deals with the market, systemic risk focuses on the failure of one or more financial institutions leading to run on the bank type behavior by the industry or contagion throughout the system. Systemic risk can drain public pools of money through bailouts, increasing industry vulnerabilities and endangering other players. Although controllable, the root institutional behavior that exerts systemic risk is much less predictable due to hidden strategies and unethical practices. Dealing with systemic risk demands faith in industrial constraints and faith in institutional deficiencies.

### III. Differently in the system of credit to acquire qualities harmful portrayal of systemic hazard and systemic hazard in a monetary framework

Many empirical descriptions of systematic risk are based on esoteric observable market phenomena such as the dynamics of shortterm interest rates, the secular movements of longterm bond yields, the volatility of risky asset prices and changes in correlations between returns on different risky assets. Here, systemic risk can be exemplified by the instability of offshore financial centers or shadow banks.

Interest rates in the short end are determined by liquidity preference (or, demand for cash) and maturity preference (or, demand for bonds). If liquidity preference prevails, bond prices drop and rates of interest rise. On the contrary, when maturity appetite prevails, bond prices fall and interest rates rise.

The average shortterm interest rate over a given bond maturity is captured by the term structure, otherwise known as a yield curve, which allows for comparing longterm bond yields. In the case where bonds of different maturities are perfect substitutes, the yield curves move together with changes in shortterm interest rates. More importantly, if they are not perfect substitutes (e.g., bonds with different maturities), longterm bonds face more price risk than shortterm bonds and hence must yield higher returns in good times (upward sloping yield curve). This "term risk" gives rise to a term premium for imperfect substitutes.

A time series decomposition of changes in prices (percentage price changes) for risky assets delivers a measure of the volatility of such returns. The greater the average changes in price, the greater return volatility. Moreover, the return volatility is usually positively correlated to the asset returns of risky assets. Both systematic and idiosyncratic factors impact the movement of prices. Idiosyncratic risk is reduced by diversification.

Changes in correlations among returns of risky assets depict the joint movements in prices series. It is these correlations which are essential for comparing returns from individual assets with a market portfolio. Higher market risk premiums are charged for riskier assets, relative to the overall market. These premiums are dynamic and change with correlations.



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The offshore financial centers or shadow banking industries can be a source of systemic risk due to their instability.

#### IV. In the Context of a Financial Environment, Normative Recommendation of Volatility and Sluggishness

The root of global financial volatility is incomplete risk sharing and imperfect information sharing. The incompleteness of risk sharing in portfolio investments produces high risk premiums and the idiosyncratic losses from institutional operations also imply that this incompleteness is accompanied by a kind of store corner. This endows imperfect information sharing with high costs of regulatory arbitrage and bailout, as well as high agency and bankruptcy costs. And these are contributing to exceptional volatility in the financial system. It reflects the frictions at the industry level ( liquidity spreads & transaction cost) and institutional strategic failure (losses from market, credit, operational and counterparty risk) which drives sluggish growth in global financial system. Structural frictions slow implementation of transactions, while large losses from strategic errors lead to transaction cessation beyond which wealth erosion is too costly. These tendencies could create prolonged stagnation.

Table 2 Characterization of Volatility and Sluggishness in Global Financial Environments

Volatility / Sluggishness		Risk-sharing vs. Information-sharing to Deal with Systematic Risk	
		Short-term Volatility Induced by Incomplete Risk-sharing	Long-term Volatility Induced by Imperfect Information-sharing
Industry Structure vs. Institutional Strategy to Cope with Systemic Risk	Sluggishness Induced by Structural Frictions in the Financial Industry	The interaction between structural frictions (high liquidity spreads) and incomplete risk-sharing (high risk premiums) due to inefficient market-based mechanisms for hedging and insurance lead to market-liquidity issues (lack of liquidity).	The interaction between structural frictions (high transactions costs) and imperfect information-sharing (high regulatory-arbitrage/bail-out costs) due to insufficient industry's self-regulation lead to market-discipline issues (lack of sanction).
	Sluggishness Induced by Strategic Failures in the Financial Institutions	The interaction between strategic failures (market/trading, credit/default losses) and incomplete risk-sharing (idiosyncratic losses) due to inadequate institutions' self-insurance lead to public-confidence issues (lack of credibility).	The interaction between strategic failures (operational/counterparty losses) and imperfect information-sharing (agency/bankruptcy costs) due to ineffective institutional supervision lead to public-disclosure issues (lack of transparency).

The interplay of these factors can fall into one of four quadrants:

- 1) Illiquidity/Uncredible: Shortrun market fluctuations are driven by partial risksharing. No Sanction/No Transparency: Longterm volatility results from informational inefficiencies. Missing Market Liquidity/Discipline — Sluggish growth is a product of industry structural friction

Lack of confidence that is not public & lack of disclosure → Solpsism as quack institutional strategy (Stagnation)

Tackling financial markets systematic risk as well as systemic risk from financial intermediary activity is vital to creating a sustainable financial industry and trustworthy capital markets institutions whilst the world endures a financial malaise and turmoil.

#### V. Important Features of a Properly Constructed and Managed Financial System

In the financial markets, they consist of main characters and supporting characters. Commercial/industrial firms issue securities in exchange for funds from household



consumers/investors. Exchange organizers/dealers set up trading systems, under the auspices of the financial community .

Financial institutions are depository and nondepository institutions (such as banks, brokerage firms, insurance companies and hedge funds and their strategic business units). These institutions are risk redistributors, they deploy capital, broker risk transfer and share knowledge with the aim of improving aggregate risk adjusted values. That is, enabling financial service firms to lower their costs and minimize their risk exposure even more.

Selfregulatory agencies, credit rating agencies, accounting/auditing firms and advisory/consultancy firms are all the pillars of financial intelligence discipline that help providing decision making intelligence for the market. These players get support from data providers and research houses.

An additional lists eight quality criteria by which any financial system could be evaluated regarding its development and indicates strengths/weaknesses for further improvements.

## VI. Utilization of Best Practice for a Sustainable Financial Industry

You can adapt the 7S framework to build a functional – sustainable – financial industry and trustworthy financial service institutions based on:

**Sustainability Strategy:** Lowering risk to boost up the growth or control volatility in slow global cash flows situation.

**Efficient Structure:** An effective and equitable allocation of resources that cultivates discipline and confidence in the market

**Efficacy System:** Melding innovation discipline with capable and brave humans who can create lasting material value in a sustainable way

**Leadership Style:** Approaches to decision making on how to deal with innovation slack and how to approach volatility prudently.

**5. Staff Engagement:** Skillset & integrity of people around to add value to the growing levels.

**6. Technology Skill:** Able to use technology effectively, adding value and minimizing risk;

**Shared Value:** Internally adopted core values that innovate the industry's processes and culture to ensure sustainability and reliability.

**A sota and hard elements:** Four key success factors for achieving shared value have to be aligned:

- Framework and ability — Provide freedom to the market.

**System and Style:** More equity in the industry.

- Forbid Strategy and Staff: Strengthen market and industrial competition.

- Style and Staff: Increase transparency in the system.

It is important to have specific actions for each S, particularly with the various financial landscape. The key here is sluggishness: the industry should use its capitalintensive infrastructure and managerialintensive intelligence to drive growth on offense. All this enables a reorientation of these elements to the defensive risk mitigation focus in volatility.

**Slow moving environment:** A more growth orientated strategy and an adaptable structure is in place with a selfcorrecting system concentrating on product/service diversity, flexibility and competitiveness. Leaders engaged, surrounded by specialists developing and delivering excellent products/services transparently with highend fintech.



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Table 5 Dynamic Industrial Alignment in a Sluggish Global Financial Environment

Infrastructure		Financial Infrastructure Hard Elements	
Intelligence	Strategy for Sustainability	Structure for Efficiency	System for Efficacy
Style of Leadership	Adoption of a growthdriven strategy by leaders whose style is to direct and steer product or service innovations to leverage productive internal strengths while exploiting untapped external opportunities.	Design of a flexible decisional structure for leadership style that allows interactions among financial participants, institutions, and governance to achieve dynamic equilibria.	Utilization of a selfcorrecting system for leaders to encourage free and fair competition that favors market discipline and industry transparency over prudential regulation and functional supervision.
Staff Engagement	Employment of expert personnel who are engaged in designing, developing, and delivering financial products or services that not only add riskadjusted value but also are highly liquid and credible to market participants.	Specialization of an industry structure that encourages its staff to educate participants and regulators about the unique features and constructs of those innovative financial products in terms of costs, returns, and risks.	Creation of commensurate and competitive incentive system to motivate professionals to do their utmost in developing and disclosing innovative products for participants and regulators to derive value and drive growth.
Skill on Technology	Deployment of proprietary skills to utilize such highvalueadded technologies as product design, marketing communications, and supplychain/customerrelation management (SCM/CRM) as part of the growth strategy.	Funding for a selfenhancing structure by the industry that invests strategicresearch programs toward financial innovations along with relevant skills that are commercially viable and conducive to growth.	Formation of an exchange system that promotes fair and active intrading of sound professional services and their financial intelligence among participants and intermediaries to ensure healthy competition.

Table 6 Dynamic Industrial Alignment in a Volatile Global Financial Environment

Infrastructure		Financial Infrastructure Hard Elements	
Intelligence	Strategy for Sustainability	Structure for Efficiency	System for Efficacy
Style of Leadership	Adoption of a riskmitigation strategy by	Design of an optimal decisional structure for a	Mobilization of a managed system for leaders to ensure



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	leaders whose style is to leadership style that effective market and direct and steer process allows efficient industry practices that favor or delivery innovations to allocation and prudential regulation and cope with external distribution of pooled functional supervision over market shocks while public resources among market discipline and dealing with internal market participants, industry transparency. short comings of the intermediaries, and financial industry. regulatory agencies.
Staff Engagement	Employment of ethical Customization of Establishment of a personnel who perform industry structure with its risk trading system that their due diligent and ethically able staff to facilitates efficient prudential functions with optimize risk sharing allocation and distribution high risk measurement activities among of all types of exposures precision and participants and complete with effective measurement risk management integrity financial markets with and management of risks inasmuch objective and full return risk mapping, by prudent staff with high timely as possible to i.e., asset prices with ethical standards of mitigate risks. state prices. practice.
Skill on Technology	Deployment of Funding of a Institutionalization of a propagable skills to developmental structure collaborative system that measure exposures and by the government that facilitates creation, manage risk adjusted invests in public revision, integration, and returns using such proven policy research programs dissemination of financial problem solving toward systematic risk technologies at the least techniques as value at reduction and transactions costs to both risk, simulation, systemic risk control with market and industry diversification, hedging, pertinent skill sets that participants. and insurance. are conducive to stability.

## VII. Implementation of Action Plan to Incentivize Robust Financial service Institutions

Maximizing stakeholder value requires management to balance growth and return objectives with associated risks and find an efficient deployment of resources in pursuit of the entity's goals . A risk management system for an enterprise enables better financial institutions as follows:

1. Aligning Strategy Risk Appetite: Linking risk appetite with strategic decisions, targets and processes.

Enhancement of Risk Responsiveness: Improving the process of choosing risk responsive options (i.e. the choices for risk bearing, avoiding, reducing and/ or sharing).

- Operational Surprise/Loss Reduction: I want to better detect things that can/could and sometimes do happen, with a view on how to quickly respond so as to minimize surprises and losses.

4) Enhancing Capital Allocation / Utilization: Making better capital assessment and decisions on how capital allocation needs to take place using strong risk information.



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Exposure identification & management: Enabling combinatorial responses to the various connected risks across BU lines

Opportunity Identification & Realisation: Enabling the institution to identify potential opportunities and then be able to capitalise on it

To attain public trust and crisis to withstandability, establishments should outline goals corresponding with these missions on a cascading foundation down the organizational ladder:

- Entity Level: Planning and allocation of resources.

Division Level: Performance control and monitoring of risks.

- Business Level : Value creating and resource managing.

Corporate & report services (Subsidiary Level)

In an ERM system, financial institutions should strive for four sets of objectives:

- Tactical: Goals that take place at the corporate level that drive down to initiatives that complements the missions of the institution.
- Operations: Goals to allocate and operate resources at the businessunit level.
- Reporting: Goals for consistent, and prompt access to information institutionwide.
- Compliance: Goals to comply with various regulations across your institution.

Tailoring these aims in accordance to the COSO ERM framework, establishments can emerge extra crisis resistant and publicly dependable.

Just defining missions and goals is not strong Enterprise Risk Management; rather, the real hallmark of Enterprise Risk Management part one that advances on a two pronged concept almost institutional wide risk intelligence about risk appetite,

Applying the ERM System to Promote Reliable and Resilient Financial-service Institutions

Enterprise Risk Management Action Plan	
1. Defining Missions & Objectives	Hoping for the best (maximizing return) and expecting the worst (minimizing risk)
2. Detemining Risk Appetite	<ol style="list-style-type: none"> <li>1. Macro-optimization of risk-return tradeoffs by an institution's headquarters (HQ)</li> <li>2. Micro-maximization of risk-adjusted return by an institution's business units (BU)</li> </ol>
3. Designing Internal Environment 4. Developing Control Mechanisms	<ol style="list-style-type: none"> <li>1. Target internal risk-tolerance level for BUs and external credit rating for HQ</li> <li>2. Risk-based capital estimation (from HQ) and capital allocation (for each BU)</li> <li>3. Dynamic optimization between HQ credit-rating and BU capital-allocation</li> <li>4. Managerial delegation (for resource-utilizing authority by BU managers) and Decisional decentralization (for performance accountability of BU managers)</li> </ol>
5. Detecting Risk Events 6. Devising Risk Assessment	<ol style="list-style-type: none"> <li>1. Risk Identification <ul style="list-style-type: none"> <li>● <i>Headquarters-level</i>: including portfolio, liquidity, strategy risks</li> <li>● <i>Business-unit-level</i>: including market, credit, operational risks</li> </ul> </li> <li>2. Risk Quantification <ul style="list-style-type: none"> <li>● <i>Parametric Approach</i>: Estimation with probability assumptions</li> <li>● <i>Non-parametric Approach</i>: Simulation with feasibility assumptions</li> </ul> </li> </ol>
7. Deciding Risk Response 8. Deploying Risk Information	<ol style="list-style-type: none"> <li>1. Risk-bearing/embedding Decisions <ul style="list-style-type: none"> <li>● <i>Hedgeable exposures</i>: allowing an institution to control timing, quantity, and amount of transactions to achieve intended results with certainty.</li> </ul> </li> <li>2. Risk-sharing/shedding Decisions <ul style="list-style-type: none"> <li>● <i>Insurable exposures</i>: providing an institution to choose better future outcomes in terms of quantity and amount that favor its operations with flexibility.</li> </ul> </li> </ol>
9. Monitoring Performance <ul style="list-style-type: none"> <li>● Return on Risk-adjusted Capital</li> <li>● Risk-adjusted Return on Capital</li> </ul>	<ol style="list-style-type: none"> <li>1. Return (value) Measurement <ul style="list-style-type: none"> <li>● <i>Accounting Value</i>: Historical acquisition costs</li> <li>● <i>Economic Value</i>: Current exchange prices</li> </ul> </li> <li>2. Resource (capital) Measurement <ul style="list-style-type: none"> <li>● <i>Regulatory Capital</i>: Minimum standards</li> <li>● <i>Economic Capital</i>: Internal-risk-based (IRB)</li> </ul> </li> </ol>



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→ Desired risk profile (optimised based on riskreturn tradeoff)

Inhouse or outsourced, they can detect risk events and develop an assessment of those risks (at both headquarters and business unit levels). Corporate risk events are identified at the portfolio, liquidity and strategy levels while business units identify market, credit and operational exposures. Whether it is the parametric type when risk quantification takes place (probability estimations) or nonparametric (risk simulation feasibility), They are sometime the most expensive steps as they are data and time intensive.

Based on the analysis of risk exposures, the institution determines which risks to retain and which to eliminate. Decisions associated with risk bearing underlie a risk management actions (diversification, hedging, etc., see Gardner and Mills 2000). Decisions around shedding risks help inform risk management strategies such as insurance. Communicating this risk information is essential for risksharing, market completion and public trust building. Market perfection and better public end disclosure arise from information sharing.

Overall, performance monitoring is focused on mostly regulatory economic perspectives:

- Regulatory Compliance: Below the minimum capital adequacy requirements and net assets / mark to market contingent claims reported according to GAAP.
- Economic disclosure: Measuring economic return with internally determined economic capital and economic value

Of greater ERM will make risk and information sharing on the global financial system easier, and diminish the degree to which financial institutions contribute to systemic risk.

## VIII. Conclusion:

Caveats on Implementing Financial Industry Development Strategy

This section discusses these policy issues and other potential downsides of the proposed development strategy for the financial industry.

- Investment Incentives: What are the incentives policymakers need to put in place to ensure that industry actors have optimal incentives to invest in platforms dealing with both slowness (requiring capital intensive infrastructure) as well as volatility (requiring managerial intensive intelligence)

Ensuring Competition: Since the necessary investment in ERM is only affordable for well capitalized institutions, how will policymakers ensure healthy competition rather than functional combinations or mergers which could reduce the number of players by half this year?

- Market Confidence Effect: Provided that players in the industry take steps to mitigate systemic risk, how will this impact market confidence, transparency, liquidity and discipline (both antifragility and robustness)?

Role of the Policymaker in Offshore Financial Centers: In an environment where regulation and supervision appear to have less importance (offshore financial centers), how can policymakers take innovative steps to change new roles in order that they may assist market participants and achieve productive marketindustry integration

In conclusion, by alleviating these possible misconceptions, policymakers can make the financial industry development strategy more able to provide accurate and resilient services that withstand a crisis which helps boost real activities.



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