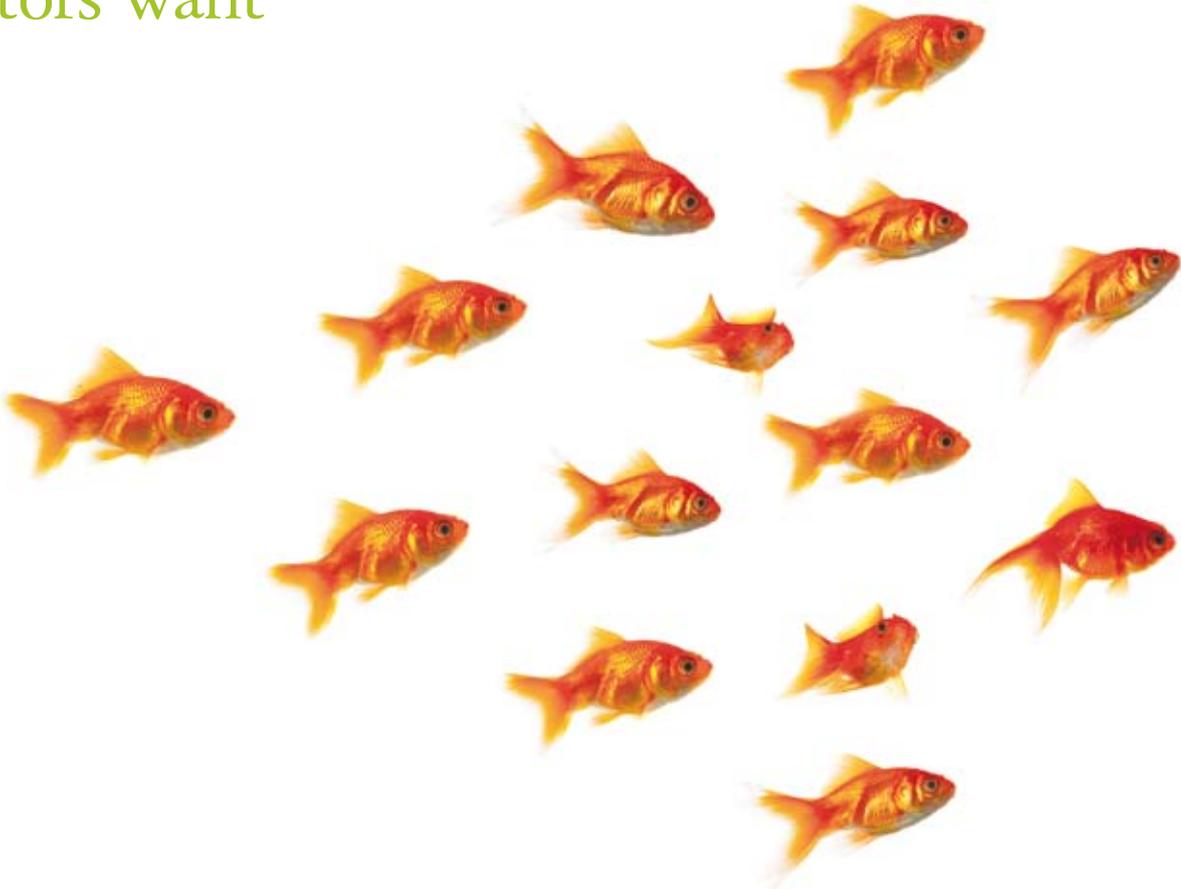


Aggregated risk on demand  
Why shareholders need what  
regulators want





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## New developments in the scalability and speed of computing power will help financial institutions deliver the timely, accurate risk analytics and information that regulators are increasingly demanding.

Above and beyond that, though, firms have every reason to embrace the emerging technology known as ‘aggregate risk on demand’. It can help them drive up returns on equity by improving their pricing, optimising their portfolios, conserving capital, cutting costs and enabling smarter, more timely decisions.

Shareholders used to value banks that posted ever higher earnings. The quality – or otherwise – of the back office was hard to measure and made an unlikely reason to buy or sell a stock.

The credit crisis changed that.

During the crisis, when regulators asked financial institutions for their total exposures to certain products, asset types or countries, or when they requested the results of stress tests, the answers they received were too often slow in coming, hesitant and subject to continued revision. Put bluntly, some financial institutions struggled so palpably to answer simple questions about their aggregate exposures that regulators doubted if they knew enough to manage their risks.

The result has been a renewed focus on speedy and accurate information by the regulators. It had long been on the regulatory agenda but there are good reasons to believe that the current emphasis will be different. Bodies such as the Financial Stability Board (FSB) and the Senior Supervisors Group (SSG) have honed their opinions in consultation and recommendation papers.<sup>1</sup> The G20 has endorsed the recommendations of the FSB regarding risk data and set a deadline for 2016.

As one former supervisor put it, the determination to raise financial and risk data standards represents “a final running out of patience by the regulatory community”.

Regulators understand that significant investment in systems and operational improvement will be needed to meet that goal, implying action plans, milestones and budgets that banks should be able to share with their supervisors. The Bank of England and the Financial Services Authority have gone so far as to say that the new Prudential Regulation Authority will validate firms’ data “through onsite inspections” and will conduct “spot checks” to assess the quality of the risk management function.<sup>2</sup>

<sup>1</sup> Senior Supervisors Group: “Observations on developments in risk appetite frameworks and IT frameworks”; December 2010. Financial Stability Board: “Understanding financial linkages: A common data template for Global Systemically Important Banks”; October 2011. Financial Stability Board: “Intensity and Effectiveness of SIFI Supervision”; October 2011.

<sup>2</sup> Bank of England, Prudential Regulation Authority: “Our approach to banking supervision”; May 2011, paragraphs 42 and 58.

Firms' reaction to this could be curmudgeonly compliance. But that would be a huge wasted opportunity. What regulators want is what shareholders and executives need: on demand risk analytics and information that is timely enough to drive decision-making, and complete enough to optimise strategy.

Banks already spend a lot of money on data. The problem is that so much is wasted because they do not always manage it efficiently. And until recently, the IT systems they relied on lacked the speed and scale needed to generate up to the hour, let alone up to the minute total exposures.

In a typical back office, data is processed in batches and cannot be processed until all the batches have arrived. By adopting the kind of IT solutions used by telecoms, logistics and fast-moving consumer goods, data could be processed as it arrived, as if on a conveyor belt. Known as complex event processing (CEP), this type of solution would allow banks to improve their pricing by factoring in all the variables that affect return on equity, on a trade by trade basis.

A large investment bank might have three million positions at any one time. Add to that all the sensitivities that must be captured and the memory demands can soon reach several terabytes of data. Keeping a real-time tally of the total position is a challenge for many IT systems. Holding all the data in a computer instead of writing it to disk would allow quicker aggregation, and has recently become feasible through in memory online analytical processing (MOLAP).

The benefits to banks of adopting these solutions are clear. A trader selling an unsecured over-the-counter derivative could price in the full cost of the credit value adjustment (CVA) and the up to the second funding charge. That may result in a price too high for the client, in which case the bank has two choices. It can lower the price in the interests of maintaining a valuable client relationship. Or it can stick to its price and walk away from the trade because it is value destroying and the firm has better things to do with its capital. In both cases, the bank makes a rational decision on the basis of full and relevant information.

The same logic applies at a macro level. Only with accurate and complete risk data can firms understand what sort of businesses they should invest in, the real risks they are running, the real costs and the real revenue opportunities. Better risk analytics would help firms realise that some of their businesses – once they have factored in all the cost drivers – may not be making them money at all.

In the aftermath of the credit crisis, firms face a business imperative to raise their returns on equity. Optimising their portfolios by selling off the least valuable parts could be an efficient way to boost that process. Yet some banks still struggle to assemble all the information in a data room ready to show potential buyers. As a result, their balance sheet remains cluttered with underperforming assets. If they had aggregated risk on demand, they could push ahead with their strategic goals.

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## Firms employing thousands of back office staff in back office countries have the chance to cut costs and boost profits.

It is not just buyers who are reassured by well-marshalled data. In today's markets, firms are still nervous about counterparty failure. They would prefer to do business with counterparties that make reassuringly complete disclosures about their risk profiles. Being known as a firm with poor data quality carries reputational costs.

Giving your staff aggregated risk on demand empowers them to excel in their jobs. The regulatory capital team can calculate risk-weighted assets (RWAs) with greater precision and spot where RWAs may be inflated. Savings in RWAs have an immediate benefit on return metrics, help liquidity management and either free up capital or ward off the need to raise fresh capital.

The risk analytics team can run stress tests, confident that they start with the full picture. An improved ability to run ad hoc stress testing is essential given the greater volatility of markets as well as their interconnectedness and the speed and transmission of events. Aggregated risk on demand gives stress testers the granularity they need to drill down into the results and explain both what's driving the stress test results and where the greatest sensitivities lie.

The greater speed and scale of the new generation risk architecture means that data validation and cleaning can be built into the process from the start. Firms employing thousands of back office staff in back office countries have the chance to cut costs and boost profits. They tackle data issues at source and free up time for their staff to add value through their expertise.

Taken together, these benefits make a powerful business case for aggregated risk on demand. The firms that invest well and implement with excellence stand to enjoy a significant competitive advantage. As if these incentives were not enough, firms also have to face deep-seating structural changes and regulatory challenges. Unless they modernise, they will be poorly placed to produce the sort of data and real analysis that will convince the authorities of the points they try to make when new rules and regimes come in.

It stands to reason, though, that if these benefits were low-hanging fruit they would already have been harvested. There are notable obstacles to overcome. Migrating systems while carrying on business as usual carries significant risk. And while new start-ups can begin with a fresh slate comprised of the latest technology, most firms are operating on brown-field not green-field sites. Fortune will not favour the merely brave; it will favour the brave who are extremely well organised.

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Key to success will be proper incentivization. Once it has been accepted that bad data is hobbling the firm and damaging returns on equity, it follows that individuals should be rewarded for helping to solve the problem.

Aggregated risk on demand will mean different things for different firms, since the 'demands' will change across products and businesses. For a flow business it means real-time updating of exposures, prices and market data. For a structured business where there are not many trades a day it means being able to do 'what if' analysis: "What if the market moves in a certain way? What does my hedging strategy need to look like?"

For retail businesses, the demands are different again. The need is not necessarily for minute by minute updates of the credit card portfolio, but the flexibility and granularity to perform rapid risk analytics. For example, how might the card portfolio perform based on certain assumptions of default probability or loss given default? What would the overall stressed position be, adding together the card, mortgage and SME portfolios?

Central to the success of any system of management information is the familiar issue of data quality. While aggregated risk on demand can help automate validation and sense check procedures, it cannot make up for systemic weaknesses in feeding data into systems. Governance around data quality, genuine ownership and accountability, proper incentives, robust processes and coherent organisation are vital. Few firms have designed their risk data architecture to place data quality centre stage. A supermarket chain probably has a better grasp of its inventory than many a bank.

Tackling data quality and driving forward new IT architectures both require long-term executive sponsorship at the highest levels within an organisation, a fact that helps to explain why so few firms have achieved it. There is always a higher profile bandwagon to ride than data quality. Yet solve the co-ordination problem and pay the up-front costs and the potential upside is very large.

Key to success will be proper incentivisation. Once it has been accepted that bad data is hobbling the firm and damaging returns on equity, it follows that individuals should be rewarded for helping to solve the problem. Some firms track the error rate of front office in filling out tickets and online forms. Good data standards require rewards just as bad data habits require an adult conversation and a meaningful deterrent. Such a change in culture could take time to complete. All the more reason, then, to start straightaway.

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