

---

## **Insights on How to Run a Bank**

---

A selection of articles by thought leaders that appeared in previously published material from Financial Times Business Enterprises Ltd.

**Featuring:**

**Jim Davis**, Senior Vice President and Chief Marketing Officer at SAS

**Jim Goodnight**, CEO of SAS

**Myron Scholes**, Nobel Laureate

**Alastair Sim**, Senior Director of Marketing at SAS

**Chris Swecker**, Independent Consultant at Swecker Enterprises

---

## Table of Contents

---

Foreword.....	1
Connecting with customers in a multi-channel world .....	4
Mitigating bank fraud: finding the right strategy .....	6
Transforming performance: the evolution of risk .....	8
High performance banking technology .....	10



## Foreword

---

For more than 35 years, SAS has partnered with some of the most successful organizations in transforming the way the world works, from discovering revolutionary medical breakthroughs to developing innovations to ensure that business can get the right products to the right places at the right times. Such innovations have been born from both necessity and opportunity – both in reaction to changes in the world around us, and in anticipation of the changes yet to come.

As an example, look at the world of the consumer, which has evolved from the comparatively simplistic, low-tech domain of a few decades ago to the constantly changing, complex one of today. In response, businesses have had to rapidly modernize and adapt in order to survive. Customer choice and fierce competition have sealed the fates of those too slow to respond.

Arguably, no industry has faced greater changes and challenges than the financial services industry, which has witnessed dramatic highs and lows over the years in response to fluctuations in an unstable global economy. Exponential advancements in technology have enabled banks to trade across global markets, while giving customers unprecedented access to financial services through smartphones and other mobile devices. The result has been an explosion of data in staggering volumes pouring through financial systems and across the Internet. And while data is the lifeblood of any business, many organizations are finding themselves drowning in it, with no strategy for exploiting its potential.


Recent strategic investments by banks have mainly concentrated on infrastructure and operational environments, but this is no longer the priority. Instead, banks are realizing the need to understand their customers like never before. Today's customer expects – no, demands – to be treated as an individual. And for banks, insight and foresight are the keys to better serving each customer as an individual.

Banks are on a path to realizing this potential both through the modernization of their decision-making processes and the ability to harness the ever-growing volumes of data. But there are still challenges ahead. The articles that follow address both the opportunities and obstacles that the financial services industry may encounter in the coming months and years as it embarks on this path. By sharing these articles with you, we are sharing both our experiences and those of other thought leaders as the banking industry looks to embed itself firmly in the digital age, with all the possibilities and perils that it brings.

Industry-leading SAS® Analytics give organizations such as banks the power to know their customers, their markets and their risk exposures – and, ultimately, to determine their success. And we will continue to help transform the way the world works through analytics.

Sincerely,

Jim Goodnight, CEO



# Analytics: the power to know

## section index

- 74 Connecting with customers in a multi-channel world: Jim Davis, chief marketing officer, SAS
- 76 Mitigating banks fraud: finding the right strategy: Chris Swecker, independent consultant, Swecker Enterprises
- 78 Transforming performance: The evolution of risk: Myron Scholes, Nobel Laureate and Alastair Sim, senior director for global marketing, SAS

**A**nalytics has opened up the world to new possibilities and consumers' expectations are changing. Banks must adapt in the post-crisis environment by looking at their customers more closely and using data to gain further insights.

Jim Davis, SAS's chief marketing officer, argues that customer behaviour is changing, but new marketing technologies are available for banks to better target their customers and improve relationships.

Chris Swecker, an independent consultant at Swecker Enterprises, says data is key for banks to protect themselves and their clients from fraudulent activities.

Myron Scholes, Nobel Laureate, and Alastair Sim, SAS's senior director of marketing, reveal that risk management remains high on banks executives' minds. They also discuss new approaches to traditional techniques.



# Connecting with customers in a multi-channel world



**Jim Davis**  
Chief Marketing  
Officer  
SAS

BANKS THAT HAVE PERFORMED WELL THROUGHOUT THE CRISIS HAVE UNDERSTOOD THEIR CUSTOMERS' NEEDS. BUT THERE ARE STILL OPPORTUNITIES IN THE MARKETPLACE

**F**inancial institutions have certainly demonstrated their resilience to challenging economic events and pressures over the course of modern history. However, the current period of global economic upheaval has proven to be one of the most complex evils the financial industry has ever faced, making the road to recovery less of an uphill trudge than an endless ride on an anxiety-fuelled rollercoaster.

While some stability has returned to the banking industry following an intense period of financial institution collapse and consolidation, regulatory rigidity and the slow-to-recover economy have severely constrained a bank's ability to grow its revenue and profits, forcing many to re-engineer their processes to make them more efficient and cost-effective. Nowhere is this more apparent than in retail banking, where institutions must refocus their efforts on improving customer service and retention efforts while increasing each customer's lifetime value.

## Understanding customer needs

Retail banks that will survive and thrive in the current economic climate are using new technologies and channels to grow revenue from basic services, such as deposits and loans, by understanding

customer needs, providing relevant products and services cost-effectively and calculating the unique lifetime value of customers to the institution. Further emphasising of analytically supported decision-making, related to multi-channel marketing optimisation and client service, will be critical to improving customer experience, loyalty and profitability.

To illustrate this, one US financial institution is incrementally generating \$250m in revenue by using behavioural models and predictive analytics to comb through more than 19 million transactions per day from more than 17 million customers. With the insight it derives, the bank delivers consistent messages to customers across all touch points and channels. The solution also helps the bank understand and anticipate future customer needs, using event-driven technology to alert representatives when significant behavioural changes occur so that the bank can intervene immediately to address a new customer requirement or save an at risk relationship.

Consumer and business depositors will be more valuable to the banks than ever before; failure to communicate with these customers at the right time, through the right channel, with the right offer will slowly wear away the client base. Customer communications must be personalised and interactive and offer tailored products and services. This requires sophisticated analytics and marketing automation technology to create customer insight, increase interactions across channels, and monitor and respond to changes in customer behaviours.



### **New channels**

Social media is one evolving channel that will help banks to generate insights on customer attitudes and preferences, which can be used to inform marketing campaigns and help deliver better customer experiences. However, an August 2010 study, conducted by Harvard Business Review and SAS, shows that banks lag behind other industries by 10% when it comes to using social media to understand and communicate with customers. In fact, 57% of bankers polled admitted that their social media efforts were ineffective, compared with 43% of those polled from non-banking industries.

For banks, social media has its pros and cons. One influencer can drive thousands of potential customers to a website. However, that same influencer can spread his or her dissatisfaction, causing erosion in brand equity and profitability. Regardless, embracing social media is not a choice for banks; it is an imperative. Fortunately, as social media has evolved, so too has the technology to understand users and their networks. The myriad benefits that come from analysing social media data include product and service quality improvements, assessing customer sentiment and uncovering fraud rings.

### **Improving value**

With the increasingly sophisticated customer analytics and marketing automation technologies that exist today, retail banks have the perfect opportunity to improve the value of

customer relationships through closed-loop customer marketing processes with a complete view of customers and include the ability to:

- Collect meaningful customer data from all channels, including social media, in one place.
- Apply advanced predictive analytics for more accurate forecasting and insight into customers and households.
- Match individual customer profiles to the most relevant offers.
- Run intelligent campaigns that account for different customer interactions.
- Learn from campaign results and build lessons back into the process to improve future marketing and customer service efforts.

In addition to the belt-tightening effects of the recession, consumer behaviours and expectations have radically changed in recent years, requiring banks to improve outreach to customers and earn their trust and good old-fashioned loyalty. To accomplish this, banks have to meet customers where they work and play – on the web, through mobile devices and social media sites. They can then use the wealth of customer intelligence that is generated to create new product and service offerings, acquire and retain customers, and maximise the profitability of each relationship.

### **biography**

Jim Davis is senior vice-president and chief marketing officer at SAS, overseeing various strategic and operational functions. Mr Davis co-authored the book *Information Revolution: Using the Information Evolution Model to Grow Your Business*.

BANKS CAN NOW CONNECT WITH CLIENTS THROUGH A NUMBER OF COMMUNICATION CHANNELS. BUT FRAUD REMAINS A HUGE PROBLEM AND BANKS MUST STAY ONE STEP AHEAD TO PROTECT THEIR CUSTOMERS

**F**inancial institutions are leaders in delivering of a wide range of services and products via the internet and mobile communication channels. Unfortunately, electronic crimes targeting consumers and businesses have become the most pervasive crime problem of this millennium. Financial institutions must realise that fraud undermines customer confidence in the bank's ability, or willingness, to protect its customers.

Fraud rings have proliferated because being a professional fraud operator is easy, profitable and presents low risk and high reward. Ironically, institutions that pride themselves on fostering collaborative environments are being out-networked by the bad guys, who work in a communal ecosystem devoted exclusively to committing fraud around the clock. They are adept at exploitation of gaping vulnerabilities caused by compartmentalisation of fraud detection units and the schism between the lines of business and fraud components, including inefficient management and use of data. Sadly, a recent survey of 230 banks by the Information Security Media Group revealed that only 23% learn

of fraud incidents through their own auditing processes.

## Finding the weak links

Consumers, retail merchants and business are weak links when it comes to virtual security. They respond to phishing schemes that solicit their most sensitive information, allow already imperfect anti-virus and spyware software to expire or disable the programs, use vulnerable passwords and don't cover their PIN numbers when using an ATM. They are ill equipped to counter botnets, worms, malware and viruses such as the Zeus strain, which has stolen more bank credentials than any other virus and is linked to more than \$100m in losses worldwide. These exploits spontaneously mutate to stay ahead of the latest detection software.

The latest battleground is business account takeovers. These accounts typically hold higher balances to meet payroll and daily expenses, and often the business customer has weak internal safeguards. Businesses are not afforded the same protections as individuals and thus are often held responsible for losses when their accounts are compromised. Businesses are especially vulnerable because their information security, online banking protocols and technology configuration are seldom as good as they need to be.

One important enabler is that fraud receives scarce attention from top executives unless a significant negative media event occurs. Revenue growth and business expansion are paramount;



**Chris Swecker**  
Independent  
Consultant  
Swecker Enterprises

# Mitigating bank fraud: finding the right strategy

when it comes to risk programmes, credit, market, counterparty and regulatory risks trump all others. As a result of scarce anti-fraud resources and failure to deploy the most effective analytical tools available, fraud rings are able to exploit the bank's inability to 'connect the dots'.

The FBI warns that professional fraud networks, not opportunistic individuals, are inflicting the greatest damage. These networks exploit the 'one fraud at a time' detection tools and technologies. Balkanisation of fraud detection components based on product lines and delivery channels, technology architecture that resembles a patchwork quilt and overall fragmentation of anti-fraud efforts severely hinder the ability to identify ring activity and deploy effective loss prevention strategies. Finally, industry co-operation must be established.

Identity impersonations account for more than \$50bn in losses and directly affect close to 12 million people annually. Customers expect banks to protect them from this nightmare. Consider the highly publicised Heartland Payment Systems/TJ Maxx hacks, in which more than 140 million credit/debit card transactions were compromised, affecting more than 500 banks and countless customers.

### Using data to prevent fraud

From the perspective of bank risk executives, anti-fraud programmes are low priority because a lack of positive revenue and losses are built into budget projections. They discount the impact and reputational risk presented by a well-publicised negative experience on a mass scale. They should view anti-fraud strategies as a priority, not because of the monetary losses that are 'acceptable' from a balance sheet perspective, but rather because current and potential customers feel vulnerable and exposed. Banks that fail to protect customers will lose them to competitors that grasp the problem and the potential opportunity.

Fortunately, the banks themselves hold the most powerful weapon to predict and prevent fraud – data. Banks hold a rich trove of information about customers, transactions, accounts and broader trends and patterns. The effective use and analysis of that data – real time and batched – can identify fraud patterns, anomalies and common data points that reveal associations between fraudulent accounts and group fraud activity. One best practice is to form a small 'ring identification team' to proactively identify the malignant social networks. Also, the consolidation of fraud detection and investigative components into a single platform and creation of

## ***banks must break down the traditional separation between anti-money laundering and fraud***

a shared database of historical alerts, red flags, investigations, watch lists and customer claims can help combat fraud. Components that cannot be consolidated should at least share a case management system.

### Prioritising the customer

Once and for all banks must break down the traditional separation between anti-money laundering and fraud. As the chief of FinCEN has pointed out, fraud and money laundering are co-dependent. An effective anti-fraud strategy should focus on expending resources on the greatest problems, not just the next alert or case that shows up in the case management system. The organisation must prioritise and direct scarce resources toward events that present the largest losses in the aggregate, such as ring activity, and the greatest potential for recovery and prosecution.

Ironically the tools and capability to more effectively prevent and mitigate these losses are available. Banks must develop a sense of urgency because their customers will continue to be easy victims without decisive action. The ranks of fraud thieves are increasing every day due to internet networking opportunities and the low risk of prosecution.

Fraud has become viral and will never be solved by law enforcement. It is an industry solution dependent on the awareness and sponsorship of bank executives at the highest levels. They must deploy the most powerful analytics available, consolidate data and various fraud components, and make use of multilayered detection technology. It is not about the money; it is about the customer. The customer must feel important and protected. After all, it is just good business to protect your most important asset.

### biography

Chris Swecker is a practising attorney and independent consultant for Swecker Enterprises, specialising in financial crimes and money-laundering mitigation strategies and is a frequent guest expert speaker. He has 30 years of experience in law enforcement, national security, legal, corporate security and risk management positions including the third highest executive position in the FBI and chief security officer for Bank of America.

# Transforming performance: the evolution of risk



**Myron Scholes**  
Nobel Laureate

RISK HAS EMERGED AS AN IMPORTANT PART OF THE EXECUTIVE BOARD, AND BANKS NEED TO MOVE AWAY FROM TRADITIONAL TECHNIQUES AND ADAPT TO THE NEW ENVIRONMENT

**A**s a result of the recent market shocks, banks, capital markets firms and asset managers are rethinking certain issues and focusing on integrating risk and reward trade-offs. To do this, they are using portfolio theory and planning for market shocks and the resulting impact on the business and its divisions. Leading financial entities are linking their portfolio risk with the return on capital and integrating market liquidity into their analyses in an attempt to gain a more complete view of risk and return. As a result, optimisation of capital deployed – rather than just a single view of risk exposures – has become the new role of risk management.



**Alastair Sim**  
Senior Director  
Global Marketing  
SAS

A recent survey of senior executives from more than 300 global financial services institutions, carried out by the Economist Intelligence Unit on behalf of SAS, revealed that one of the most important concerns of executives was a desire to restore credibility in institutions, systems and the industry. In the resulting report, 'Rebuilding Trust', strategic changes were identified. Better communication and analysis of information across the firm and communications between the executive team, the risk function and the business was seen to be of great importance. Management of risk needs to be seen as

everybody's concern and there needs to be a greater role for the risk function on the executive board. Ownership of the cultural change required to embrace risk across the institutions going forward has to be driven by the CEO. Only then, by determining the tone at the top, will the elements of this complex puzzle begin to come together. So what have been the elements used to manage risk and how should risk management evolve?

## **Risk and return**

Risk management has traditionally relied upon expert judgement coupled with a narrow use of quantitative techniques. These techniques are being replaced by sophisticated analytics that make traditional quantitative techniques more transparent and available to decision-makers by combining them with an analytic decision framework that is optimised for exposures and capital return.

Predictive, on-demand scenarios provide an up-to-the-minute, scenario-optimised view of risk and return, allowing executives to understand and integrate capital to various asset classes and divisions of the firm. By incorporating all elements of the risk and reward equation – exposures, return, capital reserves, capital deployed in various forms, firm liquidity and market liquidity – we now have the opportunity to provide and grow high-performance risk management capabilities within firms.

As we continue to emerge from the global financial crisis, not only have banks had to boost capital reserves, but the impact of sovereign nation debt has also constricted the flow of capital. This has

the potential to heighten the impact of market volatility, and with unanticipated events, we are anticipating that there is the potential for an amplification effect of the volatility and market shocks. The ability to acquire capital for investment or to liquidate a position may accelerate more default events over the next few years as markets adjust to systemic changes in the market structure.

Although most firms use dynamic measures such as VaR to gauge the sensitivity of results to short-run market factor movements, they realise that they need to overlay these measures with additional capital and static reserves to handle shocks. Correctly, entities realise that short-term measures are inadequate.

However, new work is needed to measure the size of needed risk reserves or cushions; that is, how to dynamically adjust them and partition the cushion among the various asset categories within an entity to make more accurate risk and return trade-offs. This is a new direction for research. The ability to enhance risk methodologies is due to advances in technology, such as the SAS high-performance computational environment, that remove the computational complexity associated with multifactor, cross-firm, full-valuation methods.

### **Advantages of diversification**

Moving from theory to implementation issues, market participants relied too heavily on recent market experience (during the 1990s and 2000s) to frame their views on risk and to calibrate their models. They concluded incorrectly that the likely need and the resultant cost to adjust their holdings – and to reduce risks in light of shocks and lack of liquidity in the market – were extremely low. They relied almost exclusively on the advantages of diversification across uncorrelated firm activities and concluded that risks were controlled within the isolated portfolios; they relied too heavily on a limited set of quantitative techniques to measure and to plan on how to react to unexpected market conditions.

They also relied extensively on external monitors, such as the rating agencies, to validate risks. The rating agencies failed to incorporate multiple, simultaneous failures in their models; they also overlooked the fact that recent market event data might not tell the complete story, or that the quality of the composition of structured products might deteriorate over time as entities reverse-engineered them to ‘just pass’ to receive a rating of ‘AAA’.

Therefore, the problem is that firms

**traditional techniques are being replaced by sophisticated analytics which bring transparency**

simply maximised along a truncated view of possible investment paths, assuming that recent volatilities and observed correlations were the best indicators of future volatility and correlations. Additionally, firms viewed planning for shocks and changes in the opportunity set as unnecessary or of little value. Risk had been tamed, and risk officers had cried wolf too many times to be heard. It turns out that observed low portfolio volatilities largely contributed to low observed correlations. As a result, regulators and market participants believed that the risks observed years ago were the risks of the past; risks today were ‘understood’ and would remain as such into the foreseeable future. Market participants responded to this belief by increasing their own risks through leverage, concentrating holdings (becoming less diversified) and holding riskier positions, and reducing contingency reserves for shocks. Contingency reserves were reduced because risk could be either diversified or distributed through securitised products. Flexibility planning in the form of capital optimisation became less necessary with reduced uncertainty.

### **Advances in analytics**

If risk had been controlled, these were the correct planning decisions. In retrospect, relying too heavily on recent data – and even ignoring recent minishocks – was the wrong decision. We had gone through a long period of market quiescence; risk had not been tamed. The business cycle remains; datasets are too vast to understand all of the interactions necessary to tame risk unless advances in analytics and technology are applied.

Today’s high-performance computing transforms the ability to address complex and often volatile business problems. This is a new era in managing risk and business performance.

### **biography**

Myron Scholes is widely known for his decisive work in options pricing, capital markets and tax. He is the co-originator of the Black-Scholes options pricing model, which earned him the Alfred Nobel Memorial Prize in Economic Sciences in 1997. Alastair Sim is a member of the global marketing board at SAS and responsible for the strategy and marketing in EMEA.

# High performance banking technology



**Jim Goodnight**  
Chief Executive  
Officer  
SAS

LINKING TECHNOLOGY FLOWS ALLOWS FIRMS TO ASSESS THEIR RELATIVE EXPOSURES. NEW TECHNIQUES ARE PROVIDING FINANCIAL INSTITUTIONS THE ABILITY TO MODEL REAL-TIME DATA AS THEY STRIVE TO MEET NEW REGULATORY REQUIREMENTS

**I**n a recent conversation with the head of risk analytics for a large global bank, a comment was made that is was a very good thing that the Dubai debt crisis of November 2009 happened over the US Thanksgiving holiday – the banking executive (who is located in the US) was thankful he was able to call all his employees back into the office on that Thursday.

The Thanksgiving holiday and the following weekend were used to prepare a detailed, cross-firm analysis of the entire bank’s global exposures, liquidity and capital available. It took an army of executives selected from various business units, risk teams and technology support groups three gruelling days to consolidate the exposures, stress test the portfolios across all products and validate the capital position. What typically took two weeks to compute was compressed into four days. Teams of people worked in round-the-clock runs of technology systems to calculate new views of risk and exposures. Hours of technology processing were required to recalculate the updated market pricing formulas with new factors, run new market scenarios and sensitivity analysis and produce reports. The team barely made the deadline set by the CEO for a review on the Monday following the holiday.

### Managing information

Not being able to wholly integrate the full cycle of credit management, combined with the failure of market portfolio management

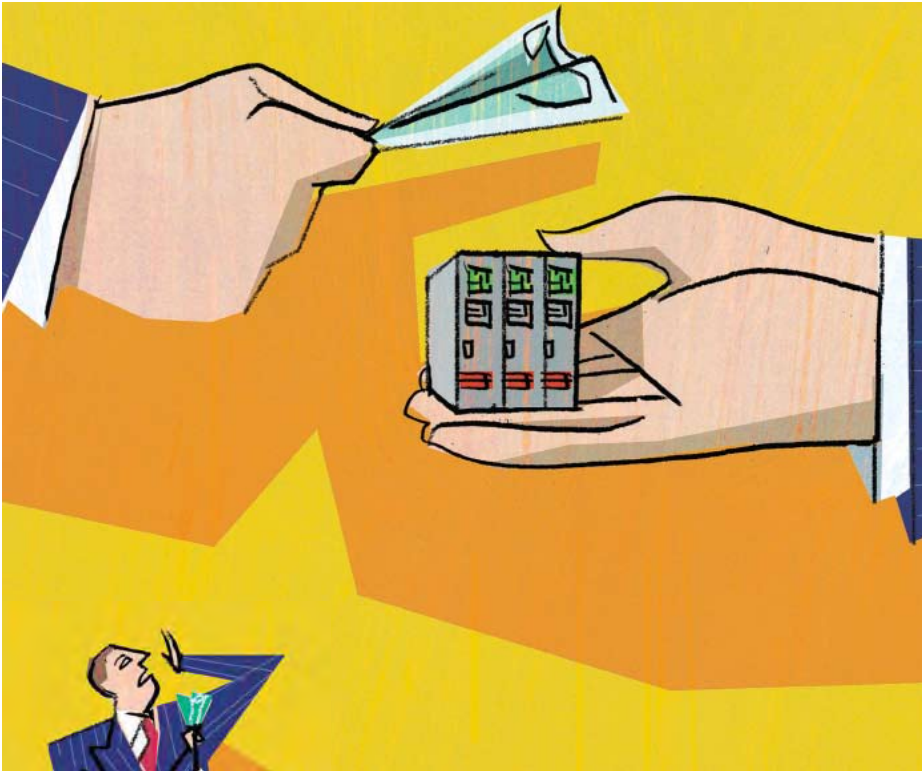
*well-made business decisions are backed by analytics that extract relevant and insightful factors needed to assist decision makers*

to truly understand the performance of the capital available to a bank, has caused bank managers to either aggressively extend credit or to not participate in the market due to a lack of information. Due partly to the limitations of traditional reporting and ‘computational’ technology, banks have only been able to increase their use of analytics within certain silos of product offerings, but have not yet reached the goal of having ‘on-demand’ firm-wide capabilities.

The ability to do cross-product scenario, stress-testing and firm-wide analysis of required liquidity for funding of products and analyse impact to capital required for economic growth and to meet regulatory requirements is still a goal many banks and financial services firm are striving for. Market events such as the Dubai debt crisis or even the Lehman bankruptcy have left banks and other financial firms scrambling to answer the questions of what exposures do they have on hand? What will be the impact on capital? How can I stress test the ‘firm-wide’ view of what assets are currently on the balance sheet to determine if additional losses are impending?

### Finding the answer

A high-performance banking technology framework is the answer. Key elements



include computing what you need to know today – questions asked today cannot be answered with ‘stale’ information that was computed yesterday. Some historical factors need to be archived and utilised for the back testing of assumptions but a high-performance banking technology solution relies on the ability to combine historical events, allows for the insertion of new factors and to compute in real-time the ‘next’ iteration of the answer to the question being asked.

### New technology

Radical new technology exists right now that goes beyond the computational advances that GRID technology represented a few years back. Advanced technology that integrates the computational matrices for sophisticated analytics directly on to a CPU rich processing environment is a reality for today’s banks. Entire data centres of traditional servers can be replaced with an ‘appliance’ type of technology that provides integrated software and hardware – providing an analytics ‘analysis’ machine reducing days to minutes.

Business decisions are made within established methods – focus on getting the key factors to support decision processes in place – do not focus on having all data available. The traditional transaction and reporting approach that has been a part of the banking industry is still a necessary part of the banking business. Operational reporting is different from the predictive analytics used for helping business leaders make today’s decisions.

Well-made business decisions are backed by analytics that extract only the very relevant and insightful factors needed to assist the decision maker in their business. Advances in analytical model development technology and methods exist today that keep sophisticated models ‘fresh’ with the principle factors to make better decisions. Model variables can be ‘optimised’ in real-time as market conditions change.

The impact of a local business unit decision can only be accessed for ‘firm-wide’ impact when provided the capability to aggregated information in real time. Transactional systems and the reporting available from these systems has evolved to the extent that with the use of proper data quality and monitoring tools, confidence can be applied to the data used for decision making. What a high-performance technology approach allows for, is not only the rapid integration of these data sources, but also the ‘real-time’ aggregation of the results of computational and analytical models. Traditional ‘cube’ technology still takes hours and days to update once the results from the analytical models have been computed. Advanced technological methods are available today in an ‘on-demand’ manner to provide results to business users as dynamically, updated analytical information is produced.

### biography:

Dr Jim Goodnight is CEO of SAS, the world’s leading business analytics software vendor. Dr Goodnight has been CEO of software vendor SAS since its incorporation in 1976. He is an active speaker and participant at the World Economic Forum.



## CEO Agenda

1. **Modernisation** – the pace of change in market conditions has dictated a step change in the desire to integrate risk types across the business.
2. **Better business decisions** are based on an ability to see current state and remodel for future states in a high-performance environment.
3. **High-performance technology** – combining model accuracy, integration, volume and speed.
4. **Optimised** – advances in analytical model technology allows ‘real-time’ optimisation of risk.
5. **Competitive advantage** – high-performing banking technology concentrates on increasing the value delivered to people who make decisions.



**SAS Institute Inc. World Headquarters +1 919 677 8000**

To contact your local SAS office, please visit: **[www.sas.com/offices](http://www.sas.com/offices)**

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies.  
Copyright © 2011, SAS Institute Inc. All rights reserved. 105186\_S70951.0511