

# **Chartis RiskTech100™**

## **SAS Highlights**

 **Chartis**  
RiskTech100™  
**2009 OVERALL WINNER**

## About Chartis Research

Chartis is the leading provider of research and analysis on the global market for risk technology. Our goal is to support enterprises as they drive business performance through better risk management, corporate governance and compliance. We help clients make informed technology and business decisions by providing in-depth analysis and actionable advice on virtually all aspects of risk technology.

This includes technology solutions for managing:

- Credit risk
- Operational risk and GRC
- Market risk
- ALM and liquidity risk
- Financial crime risk
- Insurance risk
- Regulatory requirements including Basel II and Solvency II

Chartis has a total focus on risk technology giving it significant advantage over generic market analysts.

Chartis has brought together a leading team of analysts and advisors from the risk management and financial services industries. This team has hands-on experience of implementing and developing risk management systems and programmes for Fortune 500 firms and leading consulting firms.

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# Table of Contents

- 1- Introduction ..... 5
- 2- RiskTech 100™ Rankings ..... 6
- 3- SAS Rankings per Category ..... 10
- 4- Related Research ..... 13

## List of Figures and Tables

Figure 1:	RiskTech100™ Research Methodology .....	6
Figure 2:	SAS Credit Risk Management Software - Retail Banking Sector 2009 .....	12
Figure 3:	SAS Operational Risk Management Software 2009.....	12
Figure 4:	SAS Financial Crime Risk Management Software 2009.....	12
Table 1:	RiskTech100™ Assessment Criteria .....	7
Table 2:	RiskTech100™ Top 10.....	9
Table 3:	SAS ranking per category .....	10

# 1- Introduction

SAS, an established leader in analytics and business intelligence software with revenues of over \$2.26bn, entered the risk management space in the late 90s. However, its leadership position was fuelled by demand for Basel II solutions starting in 2003-2004. By September 2009, 400 financial institutions and non-financial corporations worldwide were relying on SAS® Risk Management solutions covering such areas as credit risk, operational risk, fraud, anti-money laundering, energy risk and Fair Banking.

The company has established its leadership in the enterprise risk management market principally through the following areas:

1. SAS® Credit Risk solutions currently services 159 customers (see Figure 2 below). The solutions include SAS® Credit Scoring for Banking and SAS® Credit Risk Management for Banking applications, which have been particularly relevant for retail and consumer banking customers. The credit risk solutions showcase SAS' key strengths – its superior data management and risk analytics capabilities, which provide SAS the ability to offer a true end-to-end solution.
2. SAS has established a leadership position in the operational risk management (ORM) market with 76 customers as of September, 2009 (see Figure 3 below). The company initially entered the ORM arena by acquiring OpRisk Analytics in 2003. It has capitalised on that investment by enhancing the product and incorporating it in its core vertical/industry technology stacks.

Other notable capabilities and offerings include:

- A flexible risk calculation engine, SAS® Risk Dimensions, provides an open framework and toolkit for addressing a variety of risk measurement challenges including market risk, credit risk, operational risk, counterparty risk and asset-liability management.
- A real-time card fraud detection system, leverages an integrated platform for real-time analytics and workflow management (this initiative was undertaken in partnership with HSBC and a number of other banks are now starting to adopt the same platform).
- A functionally rich anti-money laundering solution with 59 customers across the world.
- A set of software and service offerings, SAS® RiskAdvisory BookRunner, specifically tailored for risk management within the energy sector.

More recently SAS entered the Solvency II technology space, aiming to develop specific modules on top of its existing insurance industry data management and business intelligence platform.

In 2009 Chartis incorporated further development of its RiskTech100™ ranking methodology with the introduction of the new scoring sub-category “Momentum”. This sub-category focuses specifically on the success of risk technology firms within the last 12 months. SAS scored highly in this area due to the volume and value of contract wins, increased global footprint and new product developments.

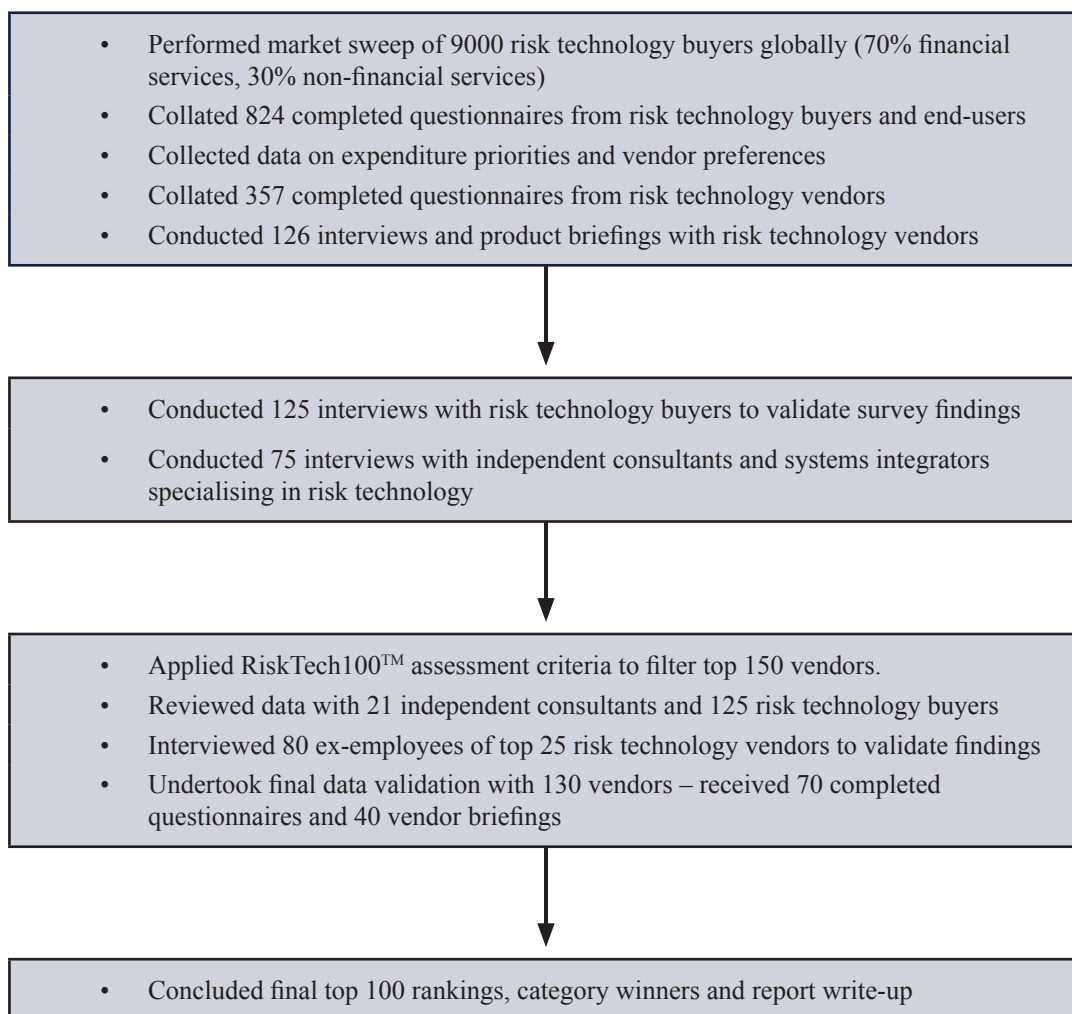
## 2- RiskTech 100™ Rankings

The RiskTech100™ rankings are now recognised globally as the most comprehensive and prestigious study of the top technology firms active in the risk management market. Chartis selects and ranks the top technology firms on the basis of a comprehensive sweep of the global market for risk management systems, and the application of a detailed assessment methodology.

The RiskTech100™ firms range from “Tier 1” enterprise software houses such as SAS, to specialised boutiques. The common factor among all firms is that they all sell licensable software products and they are recognised as being among the best in their chosen sector or risk class.

The findings and analyses in Chartis’ RiskTech100™ report reflect our analysts’ considered opinions and thorough research into market trends, participants, expenditure patterns and best practice. The data collection for this study started in January 2009, and the analysis has been validated through several phases of independent verification. This study is the most comprehensive of its kind and is a core element of Chartis’ annual research cycle.

**Figure 1: RiskTech100™ Research Methodology – 2009 (January to October 2009)**



## RiskTech100™ Assessment Criteria

The RiskTech100™ assessment criteria comprises of six equally weighted categories:

- Functionality
- Core technology
- Organizational strength
- Customer satisfaction
- Market presence
- Innovation

Within each category, there are a number of sub-criteria that have been weighted according to the level of importance that end-users and system integrators attached to these aspects of risk technology provision.

**Table 1: RiskTech100™ Assessment Criteria**  
(sub-category weightings are shown in brackets)

<p><b>Functionality</b></p>	<ul style="list-style-type: none"> <li>• <i>Depth of functionality</i> (0.5) - the level of sophistication and detailed features in the software product. Aspects assessed include: innovative functionality, practical relevance of features, user-friendliness, flexibility and embedded intellectual property. High scores are given to those firms that achieved an appropriate balance between sophistication and user-friendliness. In addition, functionality linking risk to performance is given a positive score.</li> <li>• <i>Breadth of functionality</i> (0.5) - the spectrum of risks covered as part of an enterprise risk management solution. The risk spectrum under consideration includes treasury risk management, trading risk, market risk, credit risk, operational risk, energy risk, business/strategic risk, actuarial risk, asset-liability risk, financial crime and compliance. Functionality within and integration between front-office (customer-facing) and middle-back office (compliance, supervisory and governance) risk management systems are also considered. High scores are given to those firms achieving (or approaching) integrated risk management – breaking the silos between different risk management functions.</li> </ul>
<p><b>Core technology</b></p>	<ul style="list-style-type: none"> <li>• <i>Data management</i> (0.35) – the ability of enterprise risk management systems to interact with other systems and handle large volumes of data. Data quality is often cited as a critical success factor, and ease of data access, data integration, data storage and data movement capabilities are all important factors.</li> <li>• <i>Risk analytics</i> (0.35) – the computational power of the core system, the ability to analyse large amounts of data in a timely manner (e.g. real-time analytics), and the ability to improve analytical performance are all important factors.</li> <li>• <i>Reporting</i> (0.30) – the ability to surface information in a timely manner. The quality and flexibility of reporting tools and ease of use are important for all risk management systems.</li> </ul>

<b>Organizational strength</b>	<ul style="list-style-type: none"> <li>• <i>Sales execution</i> (0.25) – size and quality of sales force, sales distribution channels, global presence, focus on risk management, messaging and positioning are all important factors.</li> <li>• <i>Financial strength/stability</i> (0.25) – revenue growth, profitability, sustainability and financial backing (ratio of license to consulting revenues is key to business scalability.)</li> <li>• <i>Implementation and support</i> (0.25) – important factors include size and quality of implementation team, approach to software implementation, post-sales support and training.</li> <li>• <i>Thought-leadership</i> (0.25) – business insight/ understanding, new thinking, formulation and execution of best-practices, and intellectual rigour are considered important by end-users.</li> </ul>
<b>Customer satisfaction</b>	<ul style="list-style-type: none"> <li>• <i>Value-for-money</i> (0.4) – price to functionality ratio, total cost of ownership versus license price.</li> <li>• <i>After sales service and support</i> (0.4) – important factors include ease of software implementation, level of support and quality of training.</li> <li>• <i>Product updates</i> (0.2) – End users consider frequency of updates, keeping pace with best-practice and regulatory changes to be important.</li> </ul>
<b>Market presence</b>	<ul style="list-style-type: none"> <li>• <i>Market penetration</i> (0.4) – number of customers in chosen markets, rate of growth relative to sector growth rate.</li> <li>• <i>Market potential</i> (0.3) – brand awareness, reputation, and the ability to leverage current market position to expand horizontally (with new offerings) or vertically (into new sectors).</li> <li>• <i>Momentum</i> (0.3) – performance over the last 12 months, including financial performance, new product releases, quantity and quality of contract wins and market expansion moves.</li> </ul>
<b>Innovation</b>	<ul style="list-style-type: none"> <li>• <i>New product development</i> (0.4) - new ideas, functionality, and technologies to improve risk management for target customers. Chartis assesses new product development, not in absolute terms, but in relation to the vendor’s closest competitors.</li> <li>• <i>Exploitation</i> (0.4) - developing new products is only the first step in generating success. Speed to market, positioning of new products and translation to incremental revenues are critical success factors.</li> <li>• <i>New business models</i> (0.2) – innovation is not limited to the product dimension. Some risk technology vendors are also actively working toward new business models for generating profitable growth.</li> </ul>

Table 2 presents the top 10 firms of RiskTech100™ rankings:

**Table 2: RiskTech100™ Top 10**

Rank	Rank	Company	HQ	Total	Functionality	Core	Organisational	Customer	Market	Innovation
2009	2008			Score		Technology	Strength	Satisfaction	Presence	
1	6	SAS	US	64.8%	71%	72%	63%	60%	65%	58%
2	3	Algorithmics	Canada	64.3%	71%	55%	61%	63%	66%	70%
3	1	SunGard	US	64.0%	73%	60%	63%	58%	68%	62%
4	2	Oracle	US	62.7%	68%	72%	60%	56%	59%	61%
5	7	Fiserv	US	61.5%	65%	58%	70%	59%	61%	56%
6	4	RiskMetrics	US	61.3%	57%	52%	73%	60%	64%	62%
7	5	Thomson Reuters	UK	61.0%	63%	60%	68%	60%	61%	54%
8	14	Moody's Analytics	US	60.7%	65%	58%	58%	65%	63%	55%
9	39	IBM	US	58.7%	40%	75%	64%	57%	58%	58%
10	15	Murex	France	58.0%	58%	52%	59%	69%	61%	49%

### 3- SAS Rankings per Category

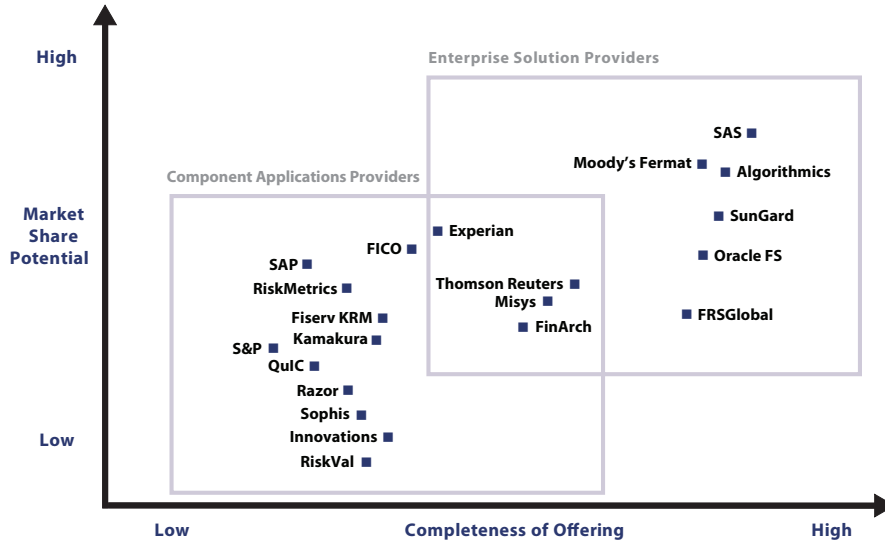
Table 3 details specific rankings of SAS for each RiskTech100™ category and supporting explanations.

**Table 3: SAS ranking per category**

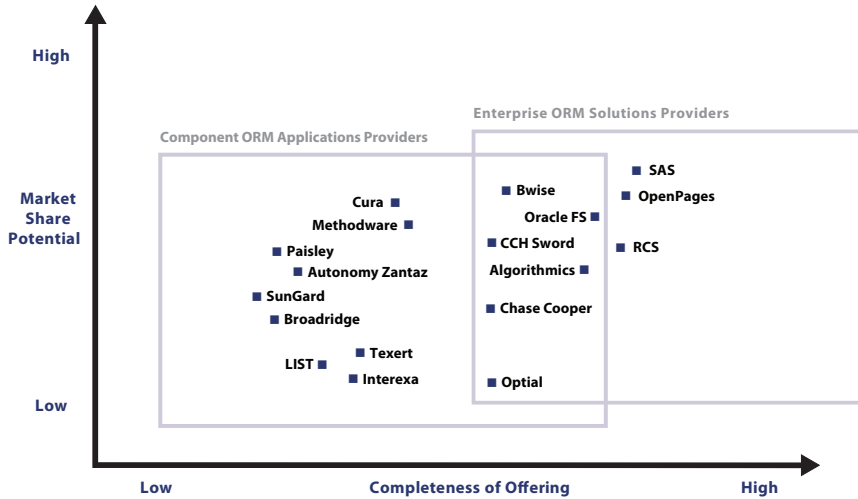
Assessment Category	SAS Ranking	Explanation
Functionality	2 <sup>nd</sup>	<p><i>Depth of Functionality:</i> SAS offers “best-in-class” functionality in its credit risk and operational risk management software applications. Both offerings include significant intellectual property with regard to embedded methodologies, data models and compliance features. SAS used these two offerings to establish a leadership position in the Basel II space. In addition, recent developments in its anti-money laundering and real-time card fraud solutions have positioned it as credible contender in the rapidly growing financial crime technology space. Developments in the SAS® Risk Management for Banking Solution embedding functionality for asset-liability management, economic capital, market risk and risk-based performance management have closed the gap on its closest rivals.</p> <p><i>Breadth of Functionality:</i> SAS has an impressive spectrum of solutions covering different aspects of enterprise risk management (ERM). These include market risk, energy risk, fraud management, anti-money-laundering, and actuarial/insurance risk. SAS’ strategic intent and vision focuses on risk-based performance management, and the company has already developed a number of capabilities in this area. SAS® Business Intelligence suite delivers an enviable capability for integrating risk, finance and performance management under a single “intelligence” umbrella.</p>
Core technology	2 <sup>nd</sup>	<p>The data intensive nature of risk management, as well as the requirements for complex statistical calculations, has meant that SAS exercises a competitive advantage over some of the generic enterprise technology and specialist firms. SAS has been particularly successful at “packaging” and re-selling the intellectual property developed as part of custom-built projects undertaken for clients.</p> <p><i>Data management:</i> SAS has strong capabilities in data integration, data storage for analytics and data quality management. These are critical to the success of any risk technology project.</p> <p><i>Risk analytics:</i> SAS is an industry leader in performing complex analysis on large amounts of data. Its optimization routines and data handling capabilities result in superior performance (time and cost) over most of its competitors. SAS’ “toolbox” approach gives customers full access to the underlying code to customize risk algorithms for their specific needs.</p> <p><i>Reporting:</i> SAS® Business Intelligence (BI) capabilities provide a flexible environment for customers to define and generate risk measurement and monitoring information. BI capabilities facilitate a two-way interaction between users and systems, which supports risk diagnostics, scenario analysis, stress testing, and key risk indicator monitoring/dashboards.</p>

<b>Organizational strength</b>	<b>8<sup>th</sup></b>	<p><i>Sales execution:</i> SAS has established a global risk practice. This is a core team of subject matter experts who facilitate pre-sales and thought leadership for local and regional sales teams. This capability, combined with the existing international sales force and global network of offices, has generated impressive results in the Basel II space (particularly in the European and Asia-Pacific banking sector). Continued focused sales and marketing activities and expansion beyond Basel II and into other industry verticals such as capital markets, insurance and industrials will help SAS improve its ranking.</p> <p><i>Financial strength/stability:</i> SAS is an established and financially healthy firm. It achieved one of the highest scores in this category.</p> <p><i>Implementation and support:</i> SAS has a knowledgeable and growing professional services team. Recent strengthening in a professional services team dedicated to risk implementations has had a positive impact on post-sales customer satisfaction.</p> <p><i>Thought-leadership:</i> SAS improved its business knowledge in recent years. Further acquisition of intellectual property in the areas of risk methodology, risk-based performance, Solvency II, and financial crime will enhance its ranking.</p>
<b>Customer satisfaction</b>	<b>12<sup>th</sup></b>	<p>SAS' customer satisfaction scores showed a marked improvement during 2009 (particularly in the European region). This was a major contributor to SAS' top placing in the RiskTech100™ rankings. Due to its superior core technology, SAS generally provides a lower cost of ownership (requiring lower levels of system integration and change management). Relative to key competitors, SAS provides a one-stop-shop approach, and this is often more attractive for larger financial institutions. Increasing the frequency and speed of product updates, enhancing after-sales implementation support, professional services and training will improve SAS' ranking in the future.</p>
<b>Market presence</b>	<b>3<sup>rd</sup></b>	<p>SAS has achieved a dominant position in the Basel II software market with more than 200 Basel II deals across the globe and multiple reference sites. This growth is fuelled by the explosive demand for credit and operational risk management software in the European and Asia-Pacific banking markets, where SAS is a well-known and respected brand in the consumer and retail banking sectors. This success serves as a very good platform for SAS' further growth. Recently, SAS has increased its penetration into the capital markets, insurance and corporate sectors. Furthermore, new product developments have enhanced SAS' position to help its existing customer base move beyond Basel II towards integrated risk management and risk-based performance. Geographically, evidence suggests that SAS is finally increasing its penetration into the US risk technology market.</p>
<b>Innovation</b>	<b>9<sup>th</sup></b>	<p>SAS' size and global presence has pros and cons. On the positive side, SAS can allocate significant R&amp;D resources and draw on vast pools of technological capabilities and marketing know-how. On the negative side, the size of the organization means that it is sometimes slower to respond to the requirements of the rapidly changing risk technology market. As a result, its smaller more "nimble" competitors are often first to market. In the last 12 months, SAS has demonstrated a focused and well-funded risk product development strategy and improved go-to-market execution. This needs to continue to ensure SAS' leadership in the risk technology marketplace.</p>

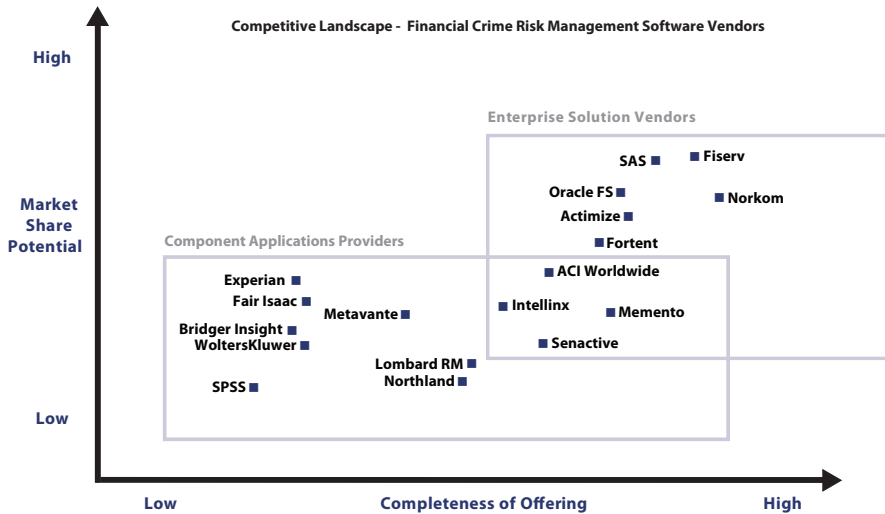
**Figure 2: SAS Credit Risk Management Software - Retail Banking Sector 2009**



**Figure 3: SAS Operational Risk Management Software 2009**



**Figure 4: SAS Financial Crime Risk Management Software 2009**



## **4- Related Research**

RiskTech100™ 2009

Credit Risk Management Systems 2009

Operational Risk Management Systems 2009

Technology Solutions for ALM and Liquidity Risk Management 2009

Financial Crime Risk Management Systems 2009

Market for Solvency II Technology

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