

PwC: RiskTech Quadrant®

KYC/AML Software Solutions, 2020





Chartis Research is the leading provider of research and analysis on the global market for risk technology. It is part of Infopro Digital, which owns market-leading brands such as Risk and WatersTechnology. Chartis' goal is to support enterprises as they drive business performance through improved risk management, corporate governance and compliance, and to help clients make informed technology and business decisions by providing in-depth analysis and actionable advice on virtually all aspects of risk technology. Areas of expertise include:

- Credit risk.
- Operational risk and governance, risk and compliance (GRC).
- Market risk.
- Asset and liability management (ALM) and liquidity risk.
- Energy and commodity trading risk.
- Financial crime including trader surveillance, anti-fraud and anti-money laundering.
- Cyber risk management.
- Insurance risk.
- Regulatory requirements including Basel 2 and 3, Dodd-Frank, MiFID II and Solvency II.

Chartis is solely focused on risk and compliance technology, which gives it a significant advantage over generic market analysts.

The firm 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 programs for Fortune 500 companies and leading consulting houses.

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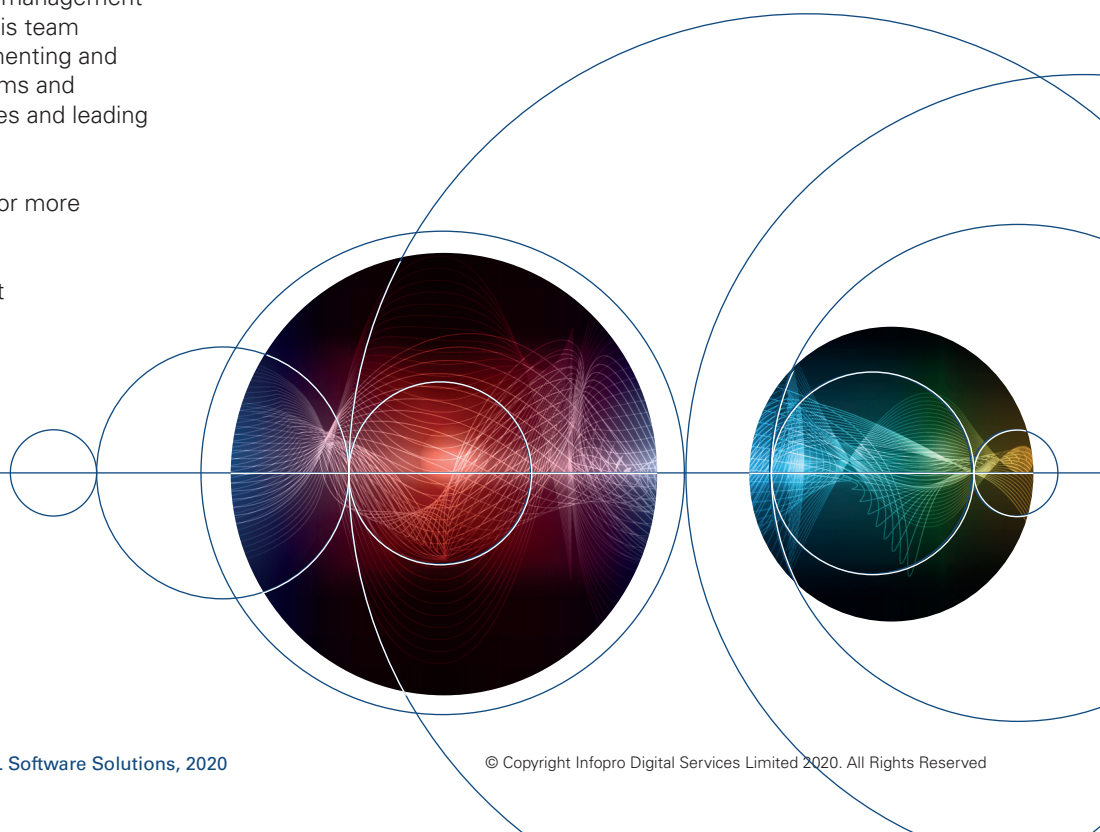


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1. In this research paper

This research paper is based on material originally published in the Chartis Research report *KYC/AML Software Solutions, 2020: Market Update and Vendor Landscape*. It includes the following:

- RiskTech Quadrants® for Know Your Customer (KYC) and anti-money laundering (AML) solutions.
- PwC's KYC/AML solutions: capabilities and market position.
- RiskTech Quadrant® methodology.

2. RiskTech Quadrants® for KYC and AML solutions

Figures 1 and 2 illustrate Chartis' view of the vendor landscape for KYC and AML solutions.

The RiskTech Quadrant® is a proprietary methodology developed specifically for the risk technology marketplace. It takes into account the product, technology and organizational capabilities of vendors. Appendix A sets out the generic methodology and criteria used for the RiskTech Quadrant®.

Figure 1: RiskTech Quadrant® for KYC solutions, 2020 (highlighting PwC's position)



Source: Chartis Research

Figure 2: RiskTech Quadrant® for AML solutions, 2020 (highlighting PwC's position)



Source: Chartis Research

3. PwC's KYC/AML solutions: capabilities and market position

PwC: company summary

PwC is a professional services firm headquartered in London, with offices in 157 countries and more than 276,000 staff. Its business caters to clients in many industries and sectors, and it aims to help organizations and individuals in its core areas of assurance, consulting, deals and tax. PwC's gross revenues for the year ending 30 June 2019 were \$42.4 billion.

Quadrant dynamics

KYC

The KYC quadrant highlights an increased number of vendors in this space, especially in the category leader group. There are now a number of routes to category leader status, including building out existing advanced KYC capabilities and expanding client lifecycle management (CLM) tools. Notably, vendors in this quadrant often address several different markets, and may not compete directly with one another. As a result, separate firms have achieved market-leading positions within specific sectors, such as corporate and investment banking, retail or wealth management.

AML

The number of category leaders in the AML quadrant is also growing, as specialist vendors consolidate their position, while the number of competitors challenging the dominant players – with key capabilities that typically include transaction monitoring and case management – continues to grow. Vendors in the category leader group also represent a wider variety of geographies than in past iterations of this quadrant, and include firms that are expanding out from a traditional focus on the US to concentrate on India, China and Europe.

PwC's KYC/AML offerings

KYC

As a category leader, PwC scored well for KYC solutions. Alongside a solid strategy for market penetration and growth, PwC provides a deep set of features in its KYC software offerings, and

has considerable subject-matter expertise in the areas of KYC, customer due diligence (CDD) and enhanced due diligence (EDD). PwC's products (Model Edge and Risk Proof) and the Digital Crime Fighters solution scored well across the completeness of offering categories. Model Edge, a cloud-based digital offering, can support models and controls across the entire spectrum of KYC, CDD and EDD elements. It can also be integrated easily with several KYC-specific PwC accelerators and tools, such as KYC chatbots, operations dashboards, and data and workflow management tools.

PwC scored well for its onboarding and workflow capabilities, reflecting the increasing availability of this functionality as growing numbers of vendors acknowledge it as an important challenge for financial institutions (FIs). Many vendors that were previously specialists have been building out their case-management capabilities, either through partnerships or with specific software improvements. Managing people is central to many KYC and AML problems, making the establishment of partnerships and service strategies crucial. In a fragmented KYC market, PwC has leveraged key technology vendor partnerships and joint business relationships to deliver services in a more efficient and streamlined way.

KYC (and AML) processes often contain repetitive and complex problems and challenges. Risk Proof, PwC's real-time risk-assessment and control platform, automates the highly manual risk-assessment process, enhancing efficiency and creating more standardized processes. PwC's services are built on robust technology and analytics, and the company has invested heavily in analytics specialists and tools to provide its clients with data-driven solutions.

AML

For the AML quadrant, PwC scored well for its regulatory compliance reporting and controls solution. Because of the significant role of money laundering in regulators' penalties, FIs are investing heavily in building large compliance teams to address more complex regulations, making labor the single largest component of high compliance expenses. Banks' investments in efficiency are

reflected in a focus on model risk management and governance for their AML and KYC systems.

Model Edge, PwC's cloud-based digital solution, supports institutions in the end-to-end management, governance, validation and explainability of their AML models, including artificial intelligence (AI)-based and custom (in-house) models. For transaction monitoring, Model Edge takes a more comprehensive approach to AML detection by adopting advanced machine learning (ML) and network analysis-based models, as well as proprietary transaction-monitoring detection algorithms.

Overall, PwC has deep subject matter expertise in the AML and modeling domain. Benefiting from the company's extensive consulting expertise, the flexible and scalable Digital Crime Fighters platform can assess the specific AML-focused requirements that firms need to deploy quickly. The platform is a proprietary, internally developed technology solution, which can also be easily configured to suit PwC's services and client requirements. Flexibility is vital in building and monitoring a system that can adapt to new and rapidly changing products and services, and which can scale to suit evolving regulatory requirements.

4. Appendix A: RiskTech Quadrant® methodology

Chartis is a research and advisory firm that provides technology and business advice to the global risk management industry. Chartis provides independent market intelligence regarding market dynamics, regulatory trends, technology trends, best practices, competitive landscapes, market sizes, expenditure priorities, and mergers and acquisitions. Chartis' RiskTech Quadrant® reports are written by experienced analysts with hands-on experience of selecting, developing, and implementing risk management systems for a variety of international companies in a range of industries including banking, insurance, capital markets, energy, and the public sector.

Chartis' research clients include leading financial services firms and Fortune 500 companies, leading consulting firms, and risk technology vendors. The risk technology vendors that are evaluated in the RiskTech Quadrant® reports can be Chartis clients or firms with whom Chartis has no relationship. Chartis evaluates all risk technology vendors using consistent and objective criteria, regardless of whether or not they are a Chartis client.

Where possible, risk technology vendors are given the opportunity to correct factual errors prior to publication, but cannot influence Chartis' opinion. Risk technology vendors cannot purchase or influence positive exposure. Chartis adheres to the highest standards of governance, independence, and ethics.

Inclusion in the RiskTech Quadrant®

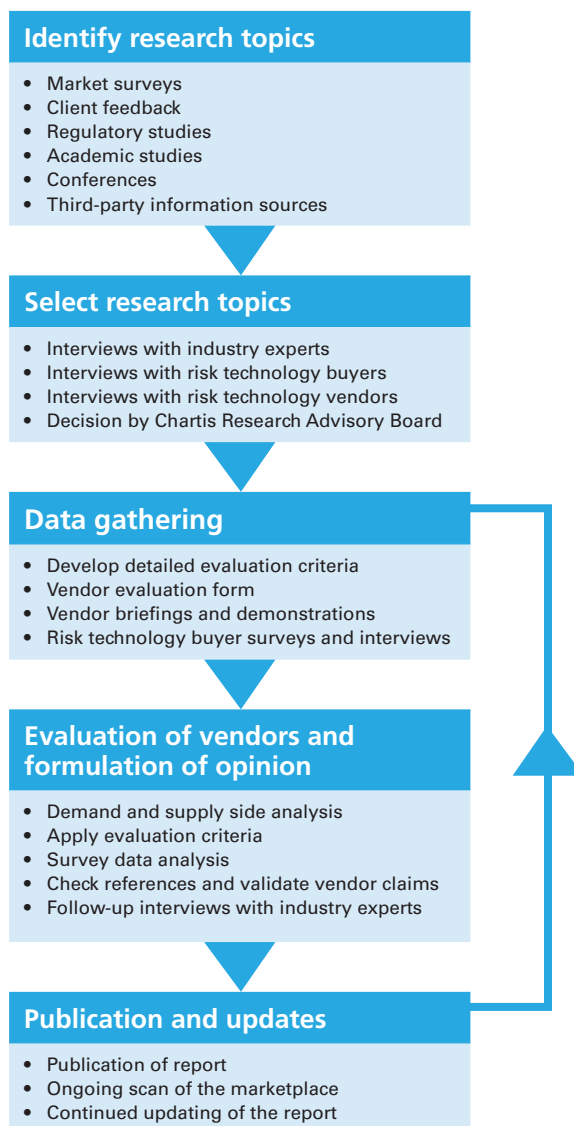
Chartis seeks to include risk technology vendors that have a significant presence in a given target market. The significance may be due to market penetration (e.g. large client-base) or innovative solutions. Chartis does not give preference to its own clients and does not request compensation for inclusion in a RiskTech Quadrant® report. Chartis utilizes detailed and domain-specific 'vendor evaluation forms' and briefing sessions to collect information about each vendor. If a vendor chooses not to respond to a Chartis vendor evaluation form, Chartis may still include the vendor in the report. Should this happen, Chartis will base its opinion on direct data collated from risk technology buyers and users, and from publicly available sources.

Research process

The findings and analyses in the RiskTech Quadrant® reports reflect our analysts' considered opinions, along with research into market trends, participants, expenditure patterns, and best

practices. The research lifecycle usually takes several months, and the analysis is validated through several phases of independent verification. Figure 3 below describes the research process.

Figure 3: RiskTech Quadrant® research process



Source: Chartis Research

Chartis typically uses a combination of sources to gather market intelligence. These include (but are not limited to):

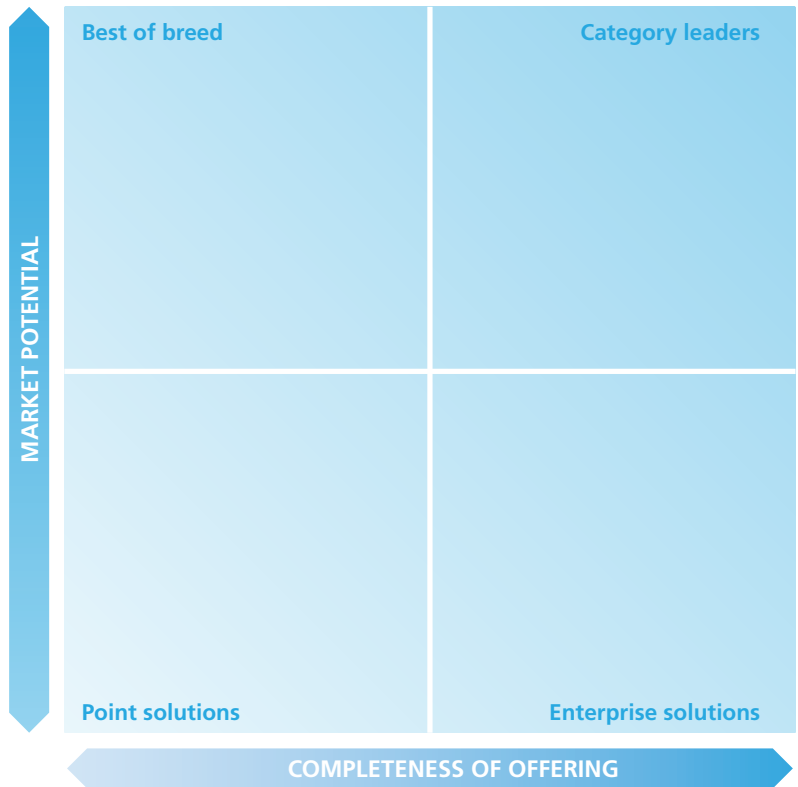
- **Chartis vendor evaluation forms.** A detailed set of questions covering functional and non-functional aspects of vendor solutions, as well as organizational and market factors. Chartis' vendor evaluation forms are based on practitioner level expertise and input from real-life risk technology projects, implementations, and requirements analysis.
- **Risk technology user surveys.** As part of its ongoing research cycle, Chartis systematically surveys risk technology users and buyers, eliciting feedback on various risk technology vendors, satisfaction levels, and preferences.
- **Interviews with subject matter experts.** Once a research domain has been selected, Chartis undertakes comprehensive interviews and briefing sessions with leading industry experts, academics, and consultants on the specific domain to provide deep insight into market trends, vendor solutions, and evaluation criteria.
- **Customer reference checks.** These are telephone and/or email checks with named customers of selected vendors to validate strengths and weaknesses, and to assess post-sales satisfaction levels.
- **Vendor briefing sessions.** These are face-to-face and/or web-based briefings and product demonstrations by risk technology vendors. During these sessions, Chartis experts ask in-depth, challenging questions to establish the real strengths and weaknesses of each vendor.
- **Other third-party sources.** In addition to the above, Chartis uses other third-party sources of information such as conferences, academic and regulatory studies, and collaboration with leading consulting firms and industry associations.

Evaluation criteria

The RiskTech Quadrant® (see Figure 4) evaluates vendors on two key dimensions:

1. Completeness of offering
2. Market potential

Figure 4: RiskTech Quadrant®



Source: Chartis Research

We develop specific evaluation criteria for each piece of quadrant research from a broad range of overarching criteria, outlined below. By using domain-specific criteria relevant to each individual risk, we can ensure transparency in our methodology, and allow readers to fully appreciate the rationale for our analysis.

Completeness of offering

- **Depth of functionality.** The level of sophistication and amount of detailed features in the software product (e.g. advanced risk models, detailed and flexible workflow, domain-specific content). Aspects assessed include: innovative functionality, practical relevance of features, user-friendliness, flexibility, and embedded intellectual property. High scores are given to those firms that achieve an appropriate balance between sophistication and user-friendliness. In addition, functionality linking risk to performance is given a positive score.
- **Breadth of functionality.** The spectrum of requirements covered as part of an enterprise risk management system. This will vary for

each subject area, but special attention will be given to functionality covering regulatory requirements, multiple risk classes, multiple asset classes, multiple business lines, and multiple user types (e.g. risk analyst, business manager, CRO, CFO, Compliance Officer). Functionality within risk management systems and integration between front-office (customer-facing) and middle/back office (compliance, supervisory, and governance) risk management systems are also considered.

- **Data management and technology infrastructure.** The ability of risk management systems to interact with other systems and handle large volumes of data is considered to be very important. 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. Particular attention is given to the use of modern data management technologies, architectures, and delivery methods relevant to risk management (e.g. in-memory databases, complex event processing, component-based architectures, cloud technology, software-as-a-service). Performance, scalability, security, and data governance are also important factors.
- **Risk analytics.** The computational power of the core system, the ability to analyze large amounts of complex data in a timely manner (where relevant in real time), and the ability to improve analytical performance are all important factors. Particular attention is given to the difference between 'risk' analytics and standard 'business' analytics. Risk analysis requires such capabilities as non-linear calculations, predictive modeling, simulations, scenario analysis, etc.
- **Reporting and presentation layer.** The ability to present information in a timely manner, the quality and flexibility of reporting tools, and ease of use are important for all risk management systems. Particular attention is given to the ability to do ad-hoc 'on-the-fly' queries (e.g. what-if-analysis), as well as the range of 'out-of-the-box' risk reports and dashboards.

Market potential

- **Business model.** Includes implementation and support and innovation (product, business model and organizational). Important factors include size and quality of implementation team, approach to software implementation, and post-sales support and training. Particular attention is given to 'rapid' implementation methodologies and 'packaged' services offerings. Also evaluated are new ideas, functionality and technologies to solve specific risk management problems. Speed to market, positioning, and translation into incremental revenues are also important success factors in launching new products.
- **Market penetration.** Volume (i.e. number of customers) and value (i.e. average deal size) are considered important. Rates of growth relative to sector growth rates are also evaluated. Also covers brand awareness, reputation, and the ability to leverage current market position to expand horizontally (with new offerings) or vertically (into new sectors).
- **Financials.** Revenue growth, profitability, sustainability, and financial backing (e.g. the ratio of license to consulting revenues) are considered key to scalability of the business model for risk technology vendors.
- **Customer satisfaction.** Feedback from customers is evaluated, regarding after-sales support and service (e.g. training and ease of implementation), value for money (e.g. price to functionality ratio) and product updates (e.g. speed and process for keeping up to date with regulatory changes).
- **Growth strategy.** Recent performance is evaluated, including financial performance, new product releases, quantity and quality of contract wins, and market expansion moves. Also considered are the size and quality of the sales force, sales distribution channels, global presence, focus on risk management, messaging, and positioning. Finally, business insight and understanding, new thinking, formulation and execution of best practices, and intellectual rigor are considered important.

Quadrant descriptions

Point solutions

- Point solutions providers focus on a small number of component technology capabilities, meeting a critical need in the risk technology market by solving specific risk management problems with domain-specific software applications and technologies.
- They are often strong engines for innovation, as their deep focus on a relatively narrow area generates thought leadership and intellectual capital.
- By growing their enterprise functionality and utilizing integrated data management, analytics and BI capabilities, vendors in the point solutions category can expand their completeness of offering, market potential and market share.

Best-of-breed

- Best-of-breed providers have best-in-class point solutions and the ability to capture significant market share in their chosen markets.
- They are often distinguished by a growing client base, superior sales and marketing execution, and a clear strategy for sustainable, profitable growth. High performers also have a demonstrable track record of R&D investment, together with specific product or 'go-to-market' capabilities needed to deliver a competitive advantage.
- Focused functionality will often see best-of-breed providers packaged together as part of a comprehensive enterprise risk technology architecture, co-existing with other solutions.

Enterprise solutions

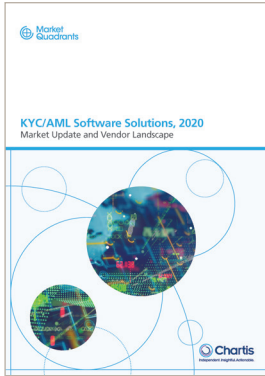
- Enterprise solutions providers typically offer risk management technology platforms, combining functionally-rich risk applications with comprehensive data management, analytics and BI.
- A key differentiator in this category is the openness and flexibility of the technology architecture and a 'toolkit' approach to risk analytics and reporting, which attracts larger clients.
- Enterprise solutions are typically supported with comprehensive infrastructure and service

capabilities, and best-in-class technology delivery. They also combine risk management content, data and software to provide an integrated 'one-stop-shop' for buyers.

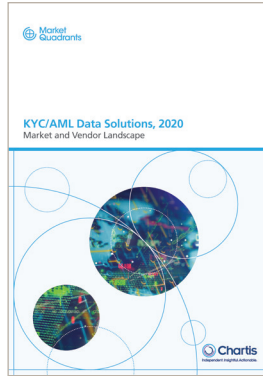
Category leaders

- Category leaders combine depth and breadth of functionality, technology and content with the required organizational characteristics to capture significant share in their market.
- Category leaders demonstrate a clear strategy for sustainable, profitable growth, matched with best-in-class solutions and the range and diversity of offerings, sector coverage and financial strength to absorb demand volatility in specific industry sectors or geographic regions.
- Category leaders will typically benefit from strong brand awareness, global reach and strong alliance strategies with leading consulting firms and systems integrators.

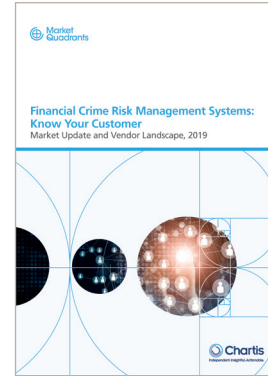
5. Further reading



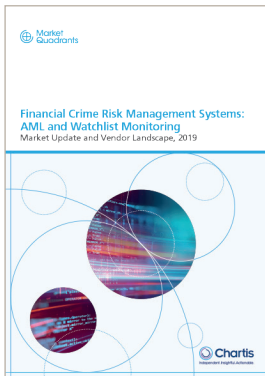
KYC/AML Software Solutions, 2020: Market Update and Vendor Landscape



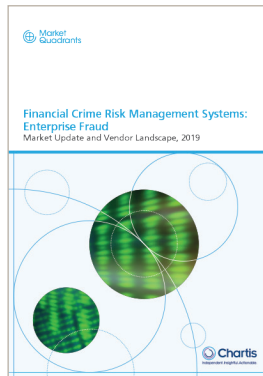
KYC/AML Data Solutions, 2020: Market and Vendor Landscape



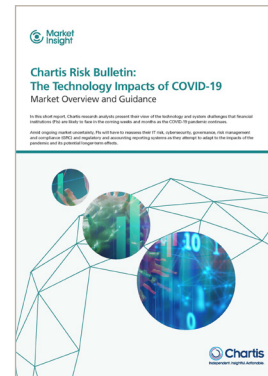
Financial Crime Risk Management Systems: Know Your Customer; Market Update and Vendor Landscape, 2019



Financial Crime Risk Management Systems: AML and Watchlist Monitoring; Market Update and Vendor Landscape, 2019



Financial Crime Risk Management Systems: Enterprise Fraud; Market Update and Vendor Landscape, 2019



Chartis Risk Bulletin: The Technology Impacts of COVID-19

For all these reports, see www.chartis-research.com