

**2013-14**

Annual report

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# CASHLESS SECTOR. CASH-RICH BUSINESS.

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If this annual report could be concised around a single idea, it would be this.

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A cashless revolution began in 1958 when Bank of America launched its first general purpose credit card.

Disruption in the payments is accelerating the evolution in electronic payments.

Analytics are deepening the value of electronic payments.

Besides, global central banks are changing regulations that are catalysing the move from cash to electronic payments.

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**The results of the global cashless revolution:**

**Growth in volume of electronic payments.**

**\$1 trillion plus revenues for stakeholders in the payments industry.**

**Heightened interest in security, reliability and availability of payments infrastructure.**

Electronic payments at physical and online locations continue to expand rapidly. With 85% of the world's retail payments still made with cash, there is considerable room for continued growth.

Considering that we are living today within a global village, this is making economies worldwide more inter-dependant. The move to a digital and digitally-integrated world is a reality and accelerating every single moment.

Even in India, there are in excess of 27 million consumers who can be categorized as digitally savvy, and they represent ~33% of the household savings pool of all online users. India has 295 million credit and debit cards issued, and 88% penetration of cell phones. Indian bank card spend is growing at a rate of 38% CAGR.

American consumers spend \$5.125 trillion at points of sale at merchant locations, and \$240 billion

through e-commerce. The United States is the largest payments market in the world, with more than \$300 billion in industry revenues.

China has 570 million Internet users, with 243 million engaged in buying online. China is the second-largest payments market in the world, and the biggest driver of future industry revenue growth.

Russia has 144 million cards issued, 236 million cell phones, and online sales growing at 22%CAGR. Russia is among the top 10 payments markets, with a growing online population of users.

Brazil has 27% of its 200 million population using credit cards. Spending with these cards represents 58% of all card spend volume, with online sales growing at 28% CAGR. Brazil is the third-largest payments market in the world, and the largest in Latin America.

**The accelerating revolution in online purchases is creating unprecedented opportunities for select digital payment companies.**

**Niche companies like RS Software.\***

\* In line with its widening prospects, RS Software reported profitable growth during 2013-14. Revenues grew 21%; profit after tax increased 41%.



**RS Software** is not just another software service provider. We are a niche and specialized player. We address a complex and rapidly evolving space. We are exclusively focused on this space. We provide comprehensive end-to-solutions. We combine technology with domain knowledge. We deliver vertically integrated solutions. These solutions deliver a competitive advantage for our clients. Digital disruptors with deep pockets are the new challengers to the existing payment leadership brands. Nevertheless, the high cost (can approximate hundreds of millions of dollars) of building a payment infrastructure that is reliable, secure, convenient and available represents significant advantage that the incumbents enjoy. The result – disruptors and existing stakeholders continue to spend money to win the mind share of the new age consumer who wants to be empowered to pay anytime, anywhere.

**RS Software** began its work in the payments 20 years ago and continues to leverage its early mover's advantage in this domain to strengthen its secular growth. As this trend reinforces, the strategy of the company is to go beyond its engagement with few brands, and extend its proven RS Global Delivery Methodology™: RS GEM™ to leadership payment brands and new entrants that are disrupting the market.



### Pedigree

RS Software has been providing high quality global delivery out of its world-class software development centre in Kolkata since 1991. The Company's 1,010-member team continues to address the growing needs of some of the world's leading payment brands.

### Presence

The Company operates in four continents with its corporate headquarters in Kolkata (India) and global offices across the US, UK and Singapore.

### Listing

The Company's shares are listed on the NSE (National Stock Exchange) and BSE (Bombay Stock Exchange).

### Offerings

■ Domain-focused technology solution provider to the electronic payments industry

### Awards and accolades

- RS Software featured second year in a row on 'Forbes Asia's 200 best Under a Billion' company
- RS Software featured as one of the fastest growing companies in India by Outlook Business magazine that ranks RS Software at #17 out of the 30 fastest growing companies in India
- RS Software won the award for Best Financial Performance at *The Economic Times* Bengal Corporate Awards 2014
- 'Systems and methods for facilitating customer acquisition by businesses', was RS Software's first patent awarded by the US Patent & Trademark Office (USPTO Patent # 8489450, issued on July 16, 2013)

# How we strengthen the business of our customers

**Financial institutions,** banks, payment networks, payment processors, merchants and software product companies work together to process billions of payment transactions every year, translating into trillions of dollar value. RS Software builds, tests and maintains the mission critical software applications that allow these institutions and their providers to make their systems secure and reliable (with 99.99999% availability). This level of safety and dependability protects the brands of our customers and fosters confidence in consumers who increasingly want to pay electronically, whether in store or online.



## Custom application development

We offer application lifecycle management for platform, cloud, e-commerce and mobile platforms. We leverage a wide array of development tools and methodologies (SSAD/OOAD, classic/relaxed waterfall, classic/relaxed spiral, RUP and Agile).

## Quality assurance and testing

We provide standardized, specialised and automated testing services including integration, system, regression, performance, stress, security and certification testing. We work with clients to map their complex transaction landscapes and ensure that the tested applications do not impact their payment infrastructure integrity, and performance.

## Application maintenance and support

RS Software offers comprehensive application life cycle management services that maintain and support existing applications and new functionalities. We deliver application and platform integration and migration, reverse engineering and 24X7 production and help-desk support.

## Strategic consulting

We help clients improve their technology and business alignment. We conduct gap analyses, build remediation plans and develop roadmaps to improve returns on the customer's investment.



**For consumers to part with their cash in a virtual world, the payment network needs to assure them of a few things.**

**Security. Speed. Reliability. Availability – all at the same time.**

**120+**  
Currencies processed

**Security:** Payment networks must be secured against breaches, combat fraud and minimize the occurrence of card and cardholder information being compromised.

**RS Software's capability:** RS Software helps to build solutions that allow payment networks to fight the creative cyber crime operators.

**Speed:** Millions of electronic payment transactions are processed every second, providing merchants and financial institutions with business-critical information in real time. RS also works to deliver faster analytics to help near realtime decision-making.

**RS Software's capability:** RS Software focuses on building solutions for high speed, high volume authorization, clearing and settlement of electronic payment transactions.

**Availability:** Consumers expect payment systems and networks to be available 24 hours a day, seven days a week, 365 days a year.

**RS Software's capability:** RS Software's knowledge of core applications and those that surround the core systems help payment networks deliver 99.99999% availability to consumers in markets around

the world. This high availability for transactions coming from in-store and online electronic payment device gives consumers convenience and helps merchants grow their business.

**Reliability:** Payment systems and networks need to ensure that payments are accepted and guaranteed virtually anywhere.

**RS Software's capability:** RS Software's strength is in building, maintaining and supporting applications that enable processing of payment transactions in 120+ different currencies in physical locations that spread to some of the most remote areas of the world, while ensuring 100% reliability. A payment transaction is a promise to be paid, and fulfillment of this promise is what builds brand trust. RS Software's 20+ years of knowledge in electronic payments helps protect clients brand value by delivering reliability.

**Scalability:** With billions of electronic payment transactions growing year after year, the payment networks are scaling their infrastructure to execute tens of thousands of transactions every second. The intersection of technology evolution and demographics is raising the bar for digital payments to be enabled anytime, anywhere.

**RS Software's capability:** RS Software has a track record stretching over two decades during which it has repeatedly helped clients achieve scalability, growing from a few hundred to several thousand transactions per second. The company's payments focused RS Global Delivery Methodology™: RS GEM™ is constantly maturing to accommodate the billions of transactions that get executed annually.

**Fraud and risk management:** Leading payment providers are investing heavily in risk management strategies to protect their stakeholders and consumers. The creativity of hackers in the digital space is making this a critical need of the electronic payments industry. Experience has shown that when Europe took a lead in the implementation of EMV more than 10 years ago, fraud started to spread a lot faster in other geographies.

**RS Software's capability:** RS Software has worked for more than a decade in the area of risk and fraud management, and continues to build risk management applications that help organizations realize their risk management goals in an electronic payments processing landscape where volumes and value increase every day.

**RS Software's 20+ years of experience** in the payments space, working with industry-leading brands, enables us to make this a reality for our clients doing business around the world. This is the foundation that the company is constantly building, infused by a corporate culture that motivates employees to 'Think of Yourself as the Customer.' This emphasis enables us to execute our strategy of moving from participation with a few select brands to providing vertically integrated solutions to a broader set of established and emerging brands.

**You swipe a card.** Almost instantaneously the transaction is secured, routed, approved and confirmed. In less than a few seconds, messages have been sent across the world and decisions made that facilitate commerce.

# Informing. Confirming. Validating. Protecting.

RS Software is one of the select companies focused exclusively on supporting this use of technology to improve our lives.

### Switching and authorization

**Need:** With an increasing number of payment instruments and regulatory requirements, transaction switching and authorization have become increasingly complex.

**Solution:** RS Software assists leading brands in the global payments business address the challenges of switching and authorization in a competitive 24x7 marketplace, improving availability, scalability and security. We have worked for more than 20 years to enable the speed of a transaction throughput to grow from 500 transactions per second to more than 20,000 transactions per second today!

### Clearing and settlement

**Need:** There is a greater need for clearing and settlement operations to enhance customer security and efficiency. This priority requires technology rationalization, integration and consolidation.

**Solution:** RS Software provides clearing and settlement solutions that handle large transactions in an environment marked by cross-border activity, regulatory changes and payment diversity.



RS Software provides complex solutions in the area of clearing and settlement systems.

RS Software possesses more than a decade's rich experience in dispute and chargeback solutions to customers.

### Risk and fraud

**Need:** Modern database formats, online information-sharing and increased access points have increased systemic vulnerability, fueling the adoption of sophisticated fraud prevention and detection mechanisms.

**Solution:** RS Software helps leading global payment brands integrate their fraud prevention and detection solutions into high-performance processing environments.

### Dispute and chargeback

**Need:** The growth of the electronic payments industry and increase in online sales has created more disputes and chargebacks that must be handled by multiple organizations operating in a geographically diverse environment.

**Solution:** RS Software has more than a decade of experience in providing

proven dispute and chargeback solutions to customers all across the world. We have repeatedly delivered end-to-end solutions that include on-going testing, enhancements and support to keep our clients current with the dynamic landscape in the payments industry.

### Merchant management

**Need:** The globalization of the payments industry, growth in electronic payment methods and increasing regulatory complexity have increased the pressures faced by acquirers when trying to compete on price and provide a comprehensive set of services required to retain the customers they acquire.

**Solution:** RS Software provides acquirers with a comprehensive set of merchant management solutions that reduce complexity, minimise costs and deliver a competitive advantage. Today, we serve some of the best-known

brands in the acquiring space with more than two decades of merchant management expertise.

### Business analytics and tools

**Need:** Enormous data is being generated and captured regarding consumer behaviour and shopping habits in store and online. Harvesting this information requires expertise in data quality, transformation, enrichment and mining that can be applied in transactional and macro analytic spaces.

**Solution:** RS Software supports the needs of its clients across four key areas (technology, governance, analytics and strategy). We offer a complete set of data analytic services that include assessment, consulting, establishing migration methodologies, implementing, testing and production support.





# Investing in profitability

RS Software reinforced its competence in analytics, testing, dispute management and security within the payments domain leading to higher revenues.

**37.8%**  
Increase in revenue from dispute management services over the last five years and 12.6% over 2012-13.

**145.4%**  
Increase in revenue from testing services over the last five years and 13.1% over 2012-13.

**153%**  
Increase in revenue from security management services over the last five years and 12.1% over 2012-13.

**310.4%**  
Increase in revenue from analytics services over the last five years and 38.1% over 2012-13.



# ANALYTICS

Confluence of the payment domain expertise and existing knowledge management system

Experience of working with a customer who possesses one of the largest data store in its system

Possesses data validation and sanitization capabilities

Resulting in **38.1%** growth in revenue and **18%** contribution to the Company's total revenue in 2013-14

According to IBM, organizations and individuals create 2.5 quintillion bytes of data every single day. Collectively, human beings have generated 90 percent of the world's data in just two years. One of the priorities for businesses is to covert this data into valuable and actionable information to derive a business advantage. The entire world is driven by data and representation in a meaningful manner is essential to unlocking its full value. The analytics required to achieve this involves collecting, storing, transforming and using the data in an understandable manner.

### Our competence

As the growth of e-payments continues, new technologies are being introduced to help companies attract and retain customers through the use of analytics that can personalize the products and services they offer. As more and more data is collected about these transactions and the people making purchases the greater the challenge around converting this data to information that can be used to better serve customers.

RS Software's experience in high volume payments processing provides the foundation for its capabilities in data validation, sanitation and analytics. Working with one of the largest storages of data in the world located at a large global network provider, we have developed deep subject matter expertise in loading, extracting and segmenting data in a cost effective manner.

Turning data into information that can be used to acquire customers and build their loyalty, has been part of the pedigree of RS Software over its more than two decades focused on the payments industry. Such capability is becoming increasingly important as data stores swell and competition for customers becomes more intense.

### Outlook

RS Software will see an increased demand for data analytics services. The foundational expertise already present in the company will get supplemented with additional resources to address this opportunity.



REPORTING AND ANALYTICS

Our experience with a leading payment network

Experience in different kind of reports and data elements

Transaction Life Cycle	Reversal & Chargeback	Fraud & Risk	Loyalty	Billing	Analytics
<ul style="list-style-type: none"><li>Transaction Life Cycle -180 days</li><li>Settlement Report</li></ul>	<ul style="list-style-type: none"><li>Duplicate</li><li>Refund</li><li>Reversal State</li><li>Acquirer Performance</li><li>Chargeback Reason code</li><li>Chargeback Performance</li><li>Chargeback Rate</li></ul>	<ul style="list-style-type: none"><li>Fraud by top merchants</li><li>Online transactions</li><li>POS transactions</li><li>Authorization Status</li></ul>	<ul style="list-style-type: none"><li>Dollar band-Prepaid</li></ul>	<ul style="list-style-type: none"><li>Business</li><li>Consumer</li><li>Prepaid</li></ul>	<ul style="list-style-type: none"><li>Contactless vs. POS</li><li>Market segment</li><li>Market channel</li><li>Prepaid cash</li><li>Fraud Chargeback/ Sales</li></ul>

CASE: REPORTING AND ANALYTICS WITH OVER 900 MILLION DATA IN ACS

Business Objective	Solution Highlights	Key takeaways
Achieve higher performance for critical applications while rationalizing the cost	Establishing Enterprise Level ETL Framework/ Infrastructure	Expertise in fail over model and high availability environment
Improve system latency by providing near real time feed to downstream applications with optimal usage of system resources with higher maintainability	Implementation of near Real Time Services using Ab Initio	Reduced the latency of data availability in the order of minutes from hours. 20% reduction in licensing and tuning cost and 10% reduction in maintenance cost
Rationalize cost of historical data analytics while maintaining system performance	Moved to File based Data Store to reduce maintenance cost and cost of Physical database system	Built and implemented RS reference architecture to reduce the time to market

FOCUS ON INNOVATION

Working in RS Payments Lab:

- On POCs to use big data to reduce cost and faster turnaround
- Understanding and integrating the impact of Social media
- Development of reusable frameworks

Big data analytics

- Analytics to explore data monetization opportunities for different market participants
- Actionable analytics on big data

Behavioural Analytics and Social Media integration

- Framework to extract sentiment from comments/reviews/ ratings in social media and determine the perception of the end customers towards a merchant

Gaming – Skill based gaming and Wagering

- Monetization platform for changing business models in skill based gaming
- POC on development of a white labeled solution for acquirers to implement end to end Loyalty services for Casinos

iBeacon / offering targeted in-store loyalty

- Building solution around iBeacon, BLE



# TESTING

An independent verification of software codes for the payments domain, bringing in industry best practices

Ability to derive solutions for any new technology development owing to its rich domain knowledge and proven capabilities

Established automation centre - Centre of Excellence (COE) tests softwares under different circumstances

Delivered solutions faster, saved money through automation and reduced time-to-market for customers

Resulting in **13.1%** growth in revenue and **26%** contribution to the Company's total revenue in 2013-14

Daily payment organizations must meet the challenges associated with the introduction of new payment instruments, increasing transactional volumes, consolidation, restructuring, mandates and system migrations comprise of growing payment concerns. In addition, the globalization of software development, presence of legacy systems and introduction of a variety of IT-based strategies are a standard part of many of their operations.

These conditions have created an increasing need for complex testing to ensure that payment systems can serve businesses and consumers that depend on them 24 four hours a day, seven days a week, 365 days a year.

To address the need for testing in these dynamic environments, payment providers need special tools, new skill

sets and subject matter expertise. Disparate systems, new software installs, increasing regulatory oversight and competitive pressures are making it difficult to identify and manage the resources required to do the testing necessary with the timeline required.

Given these conditions, payment organizations must partner with companies that understand the complexities inherent in the industry. These partner automated test tools, a variety of testing methodologies and resources to assist their clients whenever and wherever required. RS Software provides testing and quality assurance services to the largest payment network in the World. Our expertise in testing high performance, complex payment environments spans more than a decade.

## Criticality

Mistakes in the payment industry are often very costly. Errors made by software running in payment systems can lead to monetary losses and brand damage RS Software's largest customer knows how important it is to assure the quality of the system that support its global operations that deliver digital currencies to more than 200 countries and territories. Testing across groups dispersed around the globe is a basic requirement for such a client and it is increasing required by many organizations as the infrastructure supporting our global economy continues to expand.

A well-managed testing solution provides an effective foundation for addressing the increasingly complex environment in which payments are processed. In order to address the real time, real world conditions faced by a leading global payments network such a solution must come from a service provider that possesses expertise in the payments industry and a comprehensive understanding of the client's technology infrastructure including applications, interfaces and hardware platforms.

## Competence

RS Software has provided independent testing services for payment organizations for more than a decade. Our breadth of experience with various testing frameworks allows us to

provide our clients with the flexibility required to assure quality across their diverse IT infrastructures. We have demonstrated our expertise in testing in all the key areas associated with payments processing including clearing, settlement, authorization, dispute, risk and fraud, data and information service, loyalty programmes, analytics, social and mobile analytics, gaming and mobile payments. As new technologies are introduced into the industry, we invest in studying and applying our testing knowledge base to them to ensure we can support our clients' future needs.

As part of any testing engagement, RS Software assesses customer requirements starting with a determination of best-testing strategies for business needs. Critical business areas and priorities are identified and reviewed by RS Software's subject matter experts who are involved from the onset. These subject matter experts established processes needed to ensure that testing services meet all compliance and certification requirements.

In 2013, we increased our investment in this area by establishing the RS Centre of Excellence (COE) to test softwares under different circumstances. We staffed the centre with experts in testing methodologies and established processes using the best of breed practices. As a result, RS Software can now reduce time-to-market through additional automated testing scenarios.

This blend of automation and domain knowledge has provided us with a competitive edge in the marketplace.

## Outlook

RS Software's track record in testing has allowed it to attract some of the top talent in the industry. Our testing services are offered as a separate service to our clients. It can also be included as part of a vertically integrated enterprise solution.

In addition to rich domain-specific testing services, RS Software possesses the credibility of working with the world's largest data warehouse service.