



Measuring success



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Head of TrustAssured
George Evers

ROI Study Highlights

- ROI of 375% in five years
- IRR of 96% in five years
- Payback within 1 year
- £ 4.5 Million (USD 8.9M) Net Savings over five years

Key Benefits

- Lower TCO
- Lower legal costs from leveraging IdenTrust scheme
- Access to more pre-integrated identity authentication enabled application vendors

Study Scope

- Identity Authentication enabled solutions
 - UK BACSTEL-IP Payments
 - Asset-based lending
 - White-label solution
 - New core-banking solutions

Royal Bank of Scotland makes use of IdenTrust for flexible, cost-effective identity authentication platform—realises a 375% ROI

Executive Summary

Founded in 1727, the Royal Bank of Scotland (RBS) is one of the world's leading financial services groups. RBS is the fifth largest bank in the world, and by market capitalisation is the second largest bank in the UK and Europe, and the seventh largest bank in the United States. In March 2000, The Royal Bank of Scotland Group completed the acquisition of NatWest in a £21 billion deal that was the largest take-over in British banking history. In 2005 RBS reported net income of £25.6 billion and an operating profit of £8.3 billion. The company employs a workforce of 137,000 people worldwide.

In April 2001, RBS launched its TrustAssured Service, taking a portfolio approach to the issue of Identity Authentication in order to deliver a comprehensive solution for its customers. RBS's end-to-end managed service, based on Public Key Infrastructure (PKI), asks users to authenticate themselves each time they connect to their online systems. Once online, RBS's service allows them to conduct business securely by providing capabilities such as the authorisation of transactions or the signing of documents with legally binding digital signatures.

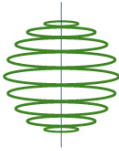
Top-Priority Objectives of TrustAssured

The management team leading the TrustAssured service established the following as their top-priority objectives, based on the core vision for this key business unit within RBS:

- Add value to RBS's core financing business by wrapping Identity Authentication around the solution, thereby minimizing risks and differentiating RBS in the market
- Provide unique Digital Identity Credentials as part of online banking solutions to eliminate the threat of interacting with unknown counterparties over the web
- Improve collaboration between banks in a trust model — one that leverages robust identity authentication to enable secure and cost-effective commerce via the Internet
- Leverage RBS's expertise to offer "gold standard" trust services and infrastructure to third parties

RBS, by moving to IdenTrust hosted infrastructure service, is now able to provide more flexible, adaptable identity authentication solutions as enablers to RBS's core payments and financing businesses, which translates into increased solutions offerings and revenue for the Bank. With IdenTrust, RBS is now be able to increase its reach and solution offerings to existing and new customers as it will be able to deliver identity-secured solutions tailored by media and price point that best meets the end-customers' application needs.

RBS, with an IdenTrust service, is achieving a more flexible, cost-effective solution that will enhance its growth and profitability opportunities translating into an impressive financial Return On Investment (ROI) of 375% in five years.



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“...some of the primary advantages of IdenTrust are the flexibility and the easy adaptation of infrastructure to customer’s needs”

— George Evers,
Head,
RBS TrustAssured

Operational Challenges

- Limited flexibility in identity management delivery / infrastructure
- Certificate cost limited use and penetration
- Complexity cost limited Complexity surrounding PKI technology and legal use of digital signatures is a barrier to adoption
- Large investment required to refresh infrastructure and significant increases in annual charges
- Differences in mindset regarding proprietary infrastructure, shared solutions and associated security

Increased Competition and a More Sophisticated Customer

In 2006, TrustAssured had an option to consider alternative suppliers for its security and identity authentication needs, which presented both an opportunity as well as a challenge. The team was keenly aware that payments competition was increasing with the looming integration of the European markets and expected increase in cross-border activities. At the same time, they were serving a more sophisticated and demanding customer base. Flexibility, adaptation and security were becoming vital in the new industry landscape, requiring quick response to market demands and an ability to rapidly formulate and launch new products.

An in-depth analysis of RBS TrustAssured’s existing security and identity management platform revealed significant limitations. Following an exhaustive evaluation of their options, RBS selected the IdenTrust solution, as it emerged as not only the most cost-effective offering but also the most flexible platform for managing every aspect of RBS’s identify management needs.

Realising Value Along Multiple Dimensions

Information Technology has long been a critical component of RBS’s reputation for innovation and service. With IdenTrust, RBS is now leveraging the platform to provide a flexible identity authentication solution that easily adapts to customer needs, while addressing both current and future regulation issues. With IdenTrust, TrustAssured is expanding its capabilities and uses of Identity Authentication to deliver truly trusted financial products and services.

TrustAssured’s core service now meets the needs of anyone developing online commerce or collaboration with a network of partners requiring ‘Trust’ as a critical component of completing the transaction. TrustAssured’s white-label service has been a compelling alternative for organisations disinclined to invest in the needed infrastructure or simply prefer a “managed services” solution, as part of their requirements for secure Internet-based commerce. Inherent in the TrustAssured solutions is the comprehensive IdenTrust rule set that governs the procedures, policies, legal framework and operations for identity authentication and validation. Developed by a group of global banks, Royal Bank of Scotland has a globally interoperable infrastructure for relying upon digital identity certificates issued by banks supporting their customers’ global e-commerce needs.

According to RBS, IdenTrust has provided strategic advantages along multiple dimensions:

- RBS now has a more cost effective and flexible identity authentication model that will allow it to increase its penetration with existing customers as well as new markets. Also, RBS will now be able to develop solutions that comprise financing, payments, electronic applications (e.g. e-invoicing) and identity validation as turn-key offerings:
- The new IdenTrust platform provides easy adoption; allowing RBS TrustAssured to deliver solutions via different media (USB, chip, branded card or soft certificates) at different price points
- With IdenTrust, RBS now has the Infrastructure and Scheme managed by one partner, reducing cost and complexity while increasing accountability
- Serving the needs of a growing “virtual” global community. According to RBS, IdenTrust provides a unique, forward-looking solution, in which policy and legal issues will be the centre of attention, not just technology.

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“With IdenTrust, we are looking at how to take the cost out of banking activities. Rather than just coming with technology, we come with solutions”

— George Evers,
Head,
RBS TrustAssured

Approach

- Provide Managed Service with shared infrastructure / investment with other banks to offset RBS's cost
- Develop a new model for Identity Authentication with greater flexibility at a lower cost to realise full potential
- Focus on adding features and capabilities to develop new applications in support of core-banking activities; leverage PKI expertise
- Develop customer value propositions vs. just offering digital signatures

RBS at a Cross-Roads — Evaluating Strategic Options

As the RBS TrustAssured team stood at a cross-road in 2006, they boiled their investment decision down to three strategic options: First, they could stay the course with their existing solutions provider. Second, they could move their identity authentication services in-house. Or third, they could choose an integrated solutions provider offering a combined scheme and technology approach.

An analysis of RBS's previous solution revealed significant limitations and shortcomings. The solution was widely considered as complicated to use and fragmented, with multiple vendors interacting over multiple, proprietary connection points. This created a barrier to broad adoption of the digital process option. This previous solution also limited RBS to issuing only smartcards, which required RBS to supply readers and cards, in addition to periodic certificate refreshes which resulted in additional costs. The expense involved in issuing hard certificates limiting RBS from offering certificates to meet the needs and budgets of different types of customers, applications and uses.

The second option — migrating services in-house — presented problems as well. This approach would require significant new hardware, software and network investments and this new infrastructure would end up competing with existing in-house PKI technologies. Equally important, RBS recognised that it would be difficult to replicate all the existing contracted business models in-house, especially when RBS considered limited flexibility and in-house processes and time requirements.

After careful evaluation, RBS selected IdenTrust, because it met key criteria related to cost-efficiency and flexibility. First, IdenTrust met TrustAssured's requirements for an integrated solution at a very competitive price. IdenTrust's "pay-as-you-go" scheme, which is a service vs. a dedicated hosted solution, involves no annual hosting charges. Second, IdenTrust already provided the scheme and key parts of the infrastructure. Having one partner accountable for both (Infrastructure and Scheme) ensures better linkages and improved accountability. IdenTrust also required only a minimal capital investment — significantly less capital than the refresh model/approach. Finally, IdenTrust's "two-sided coin" capability provides the ability to inter-operate with other PKI infrastructures including those deployed by other parts of the bank.

Moving Beyond Identity as a Stand-Alone Solution

RBS reports that one of the key strategic advantages enabled by the IdenTrust solution is the ability to "wrap" identity management around core bank services. In other words, RBS is moving beyond identity as a stand-alone solution. Instead, RBS is making identity management an essential and "built-in" part of an integrated financing and transaction business.

In pursuing this integrated approach, TrustAssured within RBS is now able to focus on financial services offerings on behalf of the bank that require Identity Credentials as part of the solution, but are not the solution by itself, with lending and e-invoicing as prime examples.

TrustAssured is also developing new banking services using digital signatures, but the approach here is also not technology or infrastructure driven. Instead, the TrustAssured team is better able to develop business solutions, that require identity credentials as part of the holistic solution, wrapping around the banks traditional payments and lending strengths.



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“When we took the new model proposition to IdenTrust, we got an attractive build and run rate cost, which means we can now make money ”

— Simon Hobby,
Scheme Risk &
Compliance Manager,
RBS TrustAssured

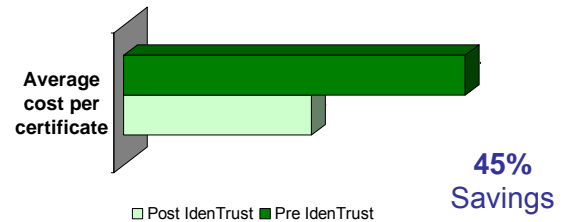
Technology Benefits

- Open-standards, multi-factor platform has allowed RBS to move to an approach that embraces all the latest standards (e.g., web services, biometrics, authentication, onboard key generation)
- Open-standards architecture provide RBS with flexibility and adaptability to continue innovation
- Uniform technology standards assure technological interoperability and consistent deployment.
- A secured network which is not based on a series of individual silos unlike the previous solution

This new flexibility is enabling TrustAssured to deliver high-value business solutions that go far beyond the previous mentality of supplying point security products to address specific technology issues.

Higher Volume Transactions Due to Lower Cost and Greater Flexibility

RBS is now planning to manage higher-volume transactions, due to the lower costs associated with issuing certificates, as well as the increased flexibility of the IdenTrust platform, including the ability to employ the onboard key generation capability. For example, this model is now extendable to a wider range of corporate and retail customers, with the potential for RBS to expand its efforts in online banking.



The white-label version of RBS’s identify management service is also well-suited to organisations that need to offer a secure Internet-based infrastructure to their own clients, but want to maintain a pure brand, without the infrastructure investment and management. In addition, this service has proven successful in other areas of financial services like, asset-based lending. For example, TrustAssured has helped their leasing division—Lombard standardise within a single process, with multiple delivery methods and price points to meet the needs of every customer.

Leveraging the Power of Open Standards

With IdenTrust, RBS has adapted an industry-leading solution modelled on a flexible, cost-efficient infrastructure, designed with flexibility and innovation in mind. By moving to an open-standards, multi-factor platform, RBS is able to embrace all the latest standards, including web services, authentication, biometrics, and other innovations that deliver value for end customers.

Previously, customers relied on proprietary, multiple private connections, which involved a cumbersome, costly process for accessing the BACS system. By contrast, the uniform technology standards built into the IdenTrust platform assure technological interoperability and consistent deployment over time. RBS now has a secured network that is no longer based on a series of individual silos.

Dramatically Lowering TCO

RBS TrustAssured has dramatically lowered its total cost of operation since adopting the IdenTrust identity management platform. To begin with, the cost of issuing a certificate under the IdenTrust solution is much lower than the cost of issuing a certificate under the previous service. As RBS TrustAssured increases the number of certificates issued, the savings increase correspondingly, resulting in RBS TrustAssured’s ability to cut costs by more than half.



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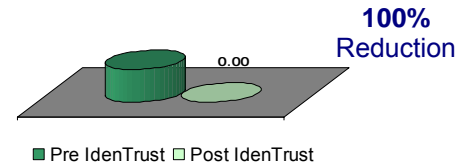
“The new infrastructure has enabled us to offer different types of credentials at attractive price points to meet the needs of users and the business application.”

— Ian Watkinson,
Channel Manager, RBS
TrustAssured

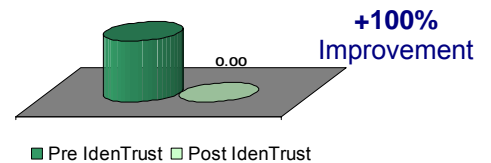
TrustAssured’s infrastructure costs are also far lower than in the past. By implementing the IdenTrust solution, RBS has achieved significant savings on infrastructure, hardware/software refresh and on Disaster Recovery/Business Continuity. These savings equate to almost 94% of the total benefits over five years.

IdenTrust also provides the Online Certificate Status Protocol (OCSP) responder free of charge, whereas under the old model the software upgrade of OCSP software alone was a significant cost to RBS.

Annual Hosting Charges(in'000 GBP)



OCSP Software upgrade(in '000 GBP)



All of these ongoing cost savings add up to a dramatically lower total cost of ownership for RBS over both the short and long term.

Realising the Value of IdenTrust — increased capabilities, variable solutions, lower operating costs

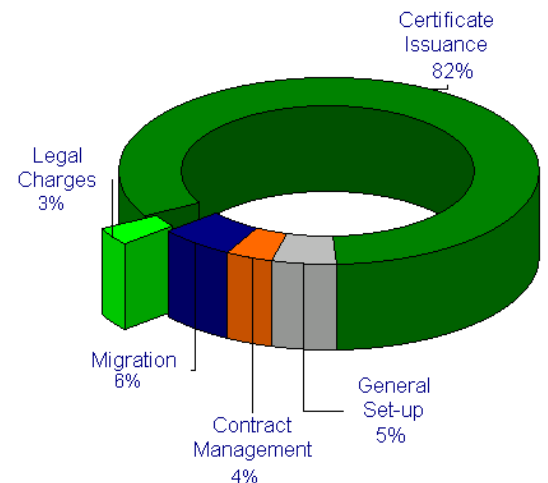
Thoughtware Worldwide conducted an extensive analysis of the investment and resulting benefits of RBS’s migration to the IdenTrust solution. Findings revealed that the investment was comprised mainly of certificate costs, which illustrates the low cost and ease of implementation of the IdenTrust solution. RBS was able to integrate the solution quickly, generating enormous economic benefits by avoiding costly infrastructure upgrades and investments.

Strategic Benefits

- Flexible platform to enable growth of RBS TrustAssured business
- Increase customer penetration with different certificates
- Wrap Identity around core bank services – moving beyond Identity Authentication as a stand-alone solution to part of an integrated financing and transaction business
- Focus on financing solutions that require Identity Credentials as part of solution (lending, e-invoicing)

Quantifying the IdenTrust Investment

- General setup costs comprise 5% of the total investment, including the one-time cost for connecting to the IdenTrust network
- Contract Management and Migration costs are a nominal 10% of the overall making the transition an easy decision
- Certificate issuance is 82% of RBS’s investment, illustrating the low entry cost for IdenTrust





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“There is a resistance to using hard credentials due to their costs and complexity — customers want simplicity and flexibility so they can employ the right solution, at an attractive price based on the business application and use”

— Simon Hobby,
Scheme Risk &
Compliance Manager,

FINANCIAL MEASUREMENT EXPLAINED

ROI (Return on Investment)

- Quantifies how much profit or cost savings will be achieved as a result of the investment
- Discount any future costs/benefits by the Weighted Average Cost of Capital (WACC)
- WACC is an average cost of capital using a combination of equity and debt borrowing
- Demonstrates the overall value of an investment; e.g., is breakeven achieved (100%) or is positive value achieved (101%+; investment plus value)

WACC (Weighted Average Cost of Capital)

- $WACC = EV \times Re + DV \times Rd \times (1 - Tc)$
- Re = Cost of Equity
- Rd = Cost of Debt
- E = The market value of the firm's equity
- D = The market value of the firm's debt
- V = E + D
- EV = Percentage of financing that is equity
- DV = Percentage of financing that is debt
- Tc = The corporate tax rate

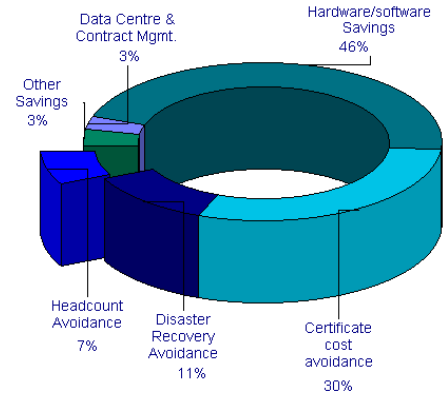
IRR (Internal Rate of Return)

- Discounted cash flow measure of valuation and investing. IRR is the true interest yield of an investment
- Net benefits restated as an interest rate
- IRR demonstrates how quickly an investment generates positive net benefits

Benefits achieved

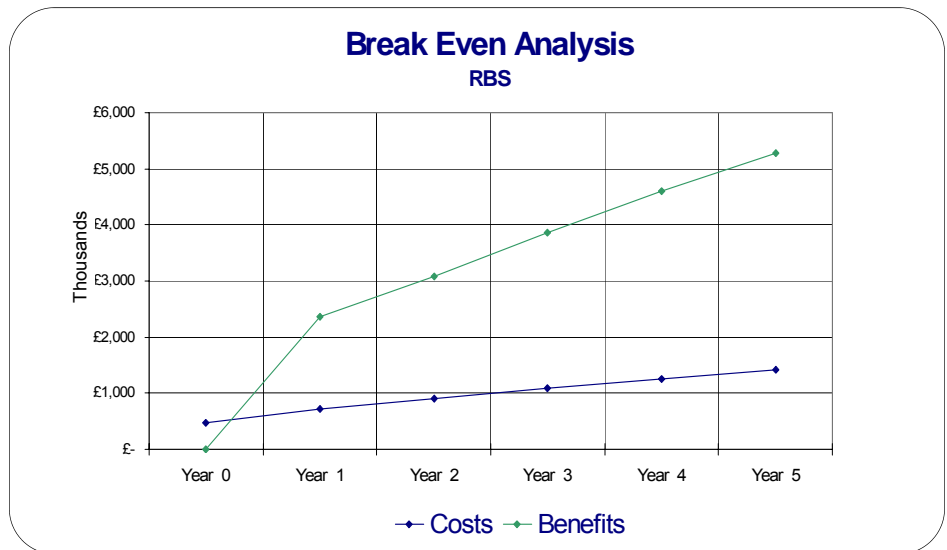
Hardware and software savings comprise 46% of the overall benefits; reducing RBS's infrastructure investment and allowing it to focus on running its core business

- Greater efficiency is contributing 7% of the overall benefits
- Greater flexibility and reduced certificate costs are a key contributor of 30% of the overall benefits



Summary of RBS's Return on Investment (ROI)

The low initial investment combined with the lower run rate costs result in an exceptional ROI of 375%, while providing RBS with greater efficiency, flexibility and increased capability. Overall, RBS now has increased opportunities for its TrustAssured business as illustrated by RBS's ability to achieve breakeven in year one.





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About the Value Measurement Series

This case study is based on original research and analysis conducted by Thoughtware Worldwide, LLC., an independent research and consulting firm. Thoughtware Worldwide's research included on-site interviews with members of Royal Bank of Scotland's (RBS) TrustAssured management team and reviews of company financial and planning documents.

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For more information about this study, please visit www.ThoughtwareWorldwide.com

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Future Opportunities for RBS

Leveraging its successful implementation of IdenTrust, the following areas are identified as areas as potential value to be harnessed:

Deploy and Leverage IdenTrust's four corner model

RBS currently primarily leverages the technology and operation models from IdenTrust. As RBS evolves its TrustAssured business, the ability to leverage IdenTrust's value (policy, legal and operational framework) will allow it to move beyond its core BACSTEL-IP payments business to cross-border commerce

Digital Signatures

Further leverage digital signatures as 'wet signature' alternative to all cross-border commerce

Increasing and enabling RBS's core business

Expand applications and uses that require identity as part of capability, whereby TrustAssured can wrap identity around RBS's core financing and payments business, such as e-invoicing, e-procurement, lending, increasing value to existing customer; look at add-on solutions for existing customer challenges, e.g., VAT reclamation process

Expand customer base

Leverage flexible, cost effective model to sell RBS's infrastructure solution to other banks and financial institutions as a flexible, low-cost provider (e.g., build on white label success)

Expand partnership with existing customers

Leverage the relationship with Lombard and White Label Banks to increase penetration rate by offering more products at various price points.

Summary

RBS, through the use of IdenTrust has demonstrated its ability to support RBS as identity management evolves and RBS's needs change over time. IdenTrust's Managed Services solution provides TrustAssured with a single, integrated technical, financial and operation solution—one platform, serving multiple applications with a single token—not just technology but an integrated solution.

By outsourcing the infrastructure hosting to IdenTrust, RBS TrustAssured can now focus on growing the business, finding new applications and developing core banking offerings.

As the global IdenTrust community grows, RBS will be able to benefit significantly from the policy and legal components of the scheme in its global transactions. IdenTrust's four-corner model supporting global inter-operability becomes increasingly important with cross-border and cross-company activities accelerating in Europe related to SEPA, MiFID and other legislative mandates.