

ADVANCING YOUR CARD PAYMENT SYSTEMS »»

Resilience - Regulation - Requirements

WHITE PAPER

In a drastically changing environment, flexibility is a must for financial institutions

A report published by the Boston Consulting Group emphasises that, due to both systemic and short term challenges, banks must take action to protect their payments businesses or risk a further reduction in profits¹.

Indeed, a complex combination of circumstances has resulted in unprecedented pressure on payment systems and their IT manager's. Many of today's systems are ill-equipped to cope with the major challenges this brings. If unaddressed, these challenges could have long term detrimental consequences for providers of financial services.

This whitepaper looks at this complex situation, including the variety of factors exerting pressure on banks today. There are still a number of opportunities out there; however, to exploit them, banks must address the weaknesses and limitations of their current systems. The success of any future strategy is dependent on the suitability and sustainability of the technology supporting it. This document focuses on precisely this aspect and proposes a technological framework to provide the basis for flexible, yet robust and high performance solutions.

¹ - Source : Boston Consulting Group, Weathering the Storm : Global Payments 2009

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CARD PAYMENT SYSTEMS UNDER PRESSURE

The payment market is currently facing a multiplicity of sometimes seemingly conflicting pressures, creating complex challenges for financial institutions and their IT managers.

INCREASED COMPETITION

Breaking the domestic barriers, SEPA* opens up competition between traditional players. This has also been compounded by technological changes (such as the Internet) that have created opportunities for new entrants to propose new ways of delivering payment services, accelerating the speed of change while reducing costs. The rapid rise of P2P** Internet payment players is a noteworthy example. Another rapidly approaching threat is that posed by telecommunications companies as they look for new revenue streams by exploiting the ubiquity of mobile phones to provide mobile payment services.

INCREASED COMPLIANCE

Financial institutions are faced with a multitudinous amount of regulatory requirements to which new ones and amendments are added on a frequent basis: national requirements, SEPA, PCI DSS***, card scheme requirements to name but a few. Compliance has become a complex and critical issue, consuming the time and effort of industry experts and requiring continual monitoring.

INCREASED CONSUMER EXPECTATIONS

Today's 24 hour society, globalisation, new delivery channels and new products mean consumers' expectations have increased. They no longer want to be restricted by the limitations of payment instruments. Consumer expectations can be summarised in two words: anytime, anywhere.

INCREASED CONSOLIDATION

European financial services' mergers and acquisitions (M&A) during 2006 had a total value of €136.9bn. Between 1996 and 2006 there were 274 cross-border banking M&As². The number of credit institutions in the EU fell by 166 in 2007 (from 8,514 to 8,348) and by 175 in 2006. Although the trend is continuing the picture is complex, with countries such as Germany, France and the UK continuing to witness consolidation, whilst countries such as Belgium, Italy and Spain have experienced an increase in credit institutions over the years³.

With this comes increased complexity as multiple heterogeneous legacy systems are often involved. In addition, national and international expansion means systems must be able to handle the increasing volumes and intricacies of transactions. This is now reaching a level that legacy systems are having or will soon have difficulties to handle.

INCREASED INTERNATIONALISATION

It is an oversimplification to state that the trend towards internationalisation has the same characteristics across Europe. Indeed, the ECB has observed considerable differences in the Euro zone and the non Euro banking sectors⁴. Nevertheless, it is still possible to differentiate between two types of internationalisation:

- » cross-border provision of financial services within the Euro zone (supported by SEPA),
- » cross-border provision of financial services outside the Euro regions (driven by the limited growth potential in the home market).



- » **Competition**
- » **Compliance**
- » **Expectations**
- » **Consolidation**
- » **Internationalisation**

These five major market conditions bring increasingly complex requirements.

* Single Euro Payment Area

** Peer to Peer

*** Payment Card Industry Data Security Standard

2 - Source : PWC, European Banking Consolidation, avril 2006 & Financial Services M&A, avril 2007

3 - Source: ECB, EU Banking Structures, octobre 2008

4 - Source: ECB, Financial Integration in Europe, avril 2008

AT BREAKING POINT

THE RISK OF INACTION

As the external pressures and demands of today's market environment continue to increase, the inability of current systems to adequately handle this is becoming increasingly apparent.

TECHNOLOGY LEGACY

Many of today's operational payment systems were initially built 20 or 30 years ago and have undergone a patchwork of updates over the years. This has resulted in overcomplicated, under-performant systems:

- » too rigid to be quickly modified,
- » with poor potential for increasing processing volume capacity,
- » too inefficient to be operated transparently and quickly,
- » in danger of becoming non-compliant as they struggle to keep up with the frequency and complexity of regulatory requirements,
- » too siloed to allow a broad convergent vision of the business and its converging means of payments (SCT⁵, SDD⁶, Card),
- » old enough to face the risk of not being supported any more by providers.

THE RISK OF INACTION

Not investing represents business, operational and financial risks.

The inability to support growth whether in terms of new products, new channels or volume will reduce competitiveness, ultimately leading to a loss of current market share and an inability to enter emerging markets.

Non-compliance is not an option and will result in exclusion. The number and complexity of regulations is in itself a challenge. However, compliance must also be timely and cost effective and this is made all the more difficult by unwieldy legacy systems. Multiple systems and inefficiencies inherent in legacy systems are more and more expensive to maintain or upgrade with a direct negative effect on prices and margin.

The inability to process higher volumes could result in operational collapse as a worst case scenario and delayed processing as a best case scenario.



High processing capability together with flexibility are the key factors for a future-proof transactional solution.

5 - SCT : SEPA Crédit Transfert

6 - SDD : SEPA Direct Debit



THE BASIS FOR SELECTING THE BEST SOLUTION

So far this paper has looked at the pressures driving payment systems today, the inability of legacy systems to effectively meet the resulting challenges and the inevitable damaging consequences. It is clear that despite the current economic climate banks must tackle these issues in high priority.

The Gartner group has succinctly illustrated the situation, clearly implying that current operations could be a barrier to the evolution of the card business.

Careful consideration of the technological basis that will best underpin the implementation of payment strategies is a key part of solution selection. Generally, analysts agree that open architecture is the key. This whitepaper presents the four key technology features that should be used as criteria when looking at solutions.

SERVICE ORIENTED ARCHITECTURE (SOA)

It brings modularity, encapsulation, loose coupling, reusability, ease of integration and evolution. This is essential to the urbanisation of large and complex systems.

MULTI-TIER ARCHITECTURE

Combined with object oriented principles, increases the potential of evolution. It also facilitates the platform convergence by allowing the mutualisation of:

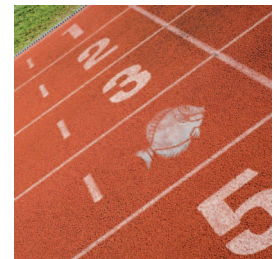
- » business processes development,
- » maintenance for all the channels.

JAVA

It is the reference language for object oriented programming (OOP). It brings independence from technical environments, openness to a large community of contributors and ease of use as a common language between different components. The basic characteristics of OOP (polymorphism, inheritance, delegation ...) bring a high level of extensibility.

ENTERPRISE JAVA BEANS (EJB3)

Its usage is increasingly spreading for the development of server application in industrial environment. As a Java standard solution both by open source groups or strong commercial players (Oracle or IBM...), it has now reached maturity and stability.



An open architecture combined with standard tools of the market are the basis.

CURRENT SYSTEMS

- » RIGID
- » AT CAPACITY
- » INEFFICIENT OPERATIONS
- » NON COMPLIANCE
- » SILOED



WHAT BANKS NEED

- FLEXIBILITY «
- SCALABILITY «
- EFFICIENT OPERATIONS «
- COMPLIANCE «
- CONVERGED «

Source: Gartner June 2007

REAPING THE TECHNICAL BENEFITS

In discussing the benefits of the aforementioned technical approach, it is important to keep in mind the fact that technical benefits are the key enabling factor in achieving real, measurable and sustainable business advantages.

WIDELY PORTABLE

Solutions can be operated on a very large range of technical environments, which means currently almost all platforms.

CUSTOMISATION POTENTIAL

The design method leads to simplified adaptation of solutions to the exact circumstances and requirements of each financial institution.

FLEXIBLE MIGRATION

Financial Institutions can migrate at their own pace, replacing specific areas of functionality in a step-by-step approach: an attractive alternative to the more risky “big bang” approach.

EASY TO INTEGRATE

SOA can be seamlessly integrated into existing landscapes.

STABILITY

SOA brings great stability: changes can be made to components within a complex infrastructure without detrimental effects on the functionality of the complete system.

EXTENSIBLE

Object-oriented design and market standard tools such as Java and EJB3 enable new functions to be added easily, even if they were not part of the initial design.

RELIABLE

By using J2EE and EJB3, standard and proven tools can be used to support heavy operational loads, including load balancing.

SCALABLE

A solution is scalable when its resource consumption is growing linearly with the work load. This is offered by the power of parallelisation implemented in each link of the chain.

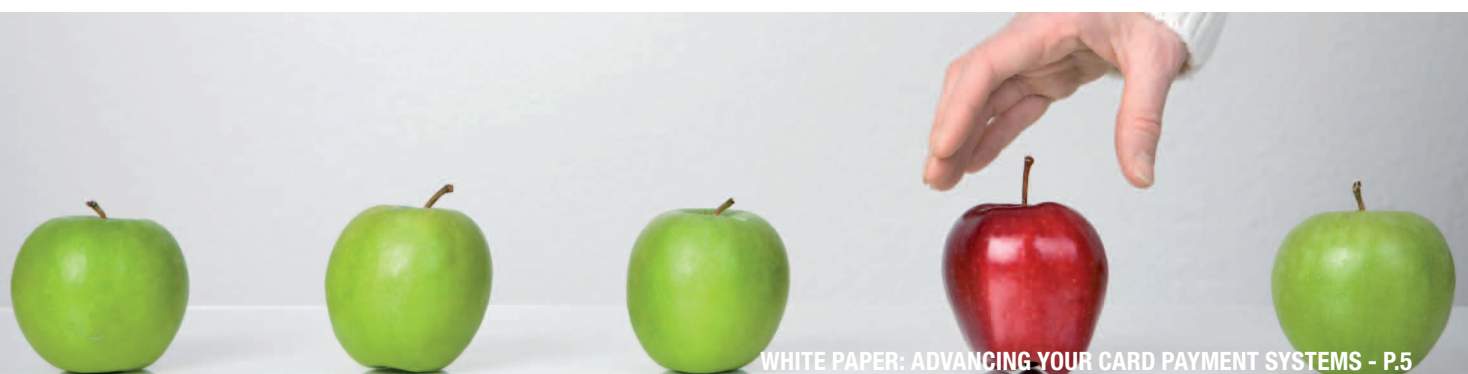
HIGH PERFORMANCE

The performance potential of the hardware can be fully utilised due to parallelisation features in Java Virtual Machines.

FUTURE PROOF

The solution can evolve smoothly, and adapt and grow with the needs of its users over time. The delivery of new products is accelerated through consolidation and the reuse of services.

**“EXPLOITING TECHNOLOGICAL CONSTRAINTS
TO LEAD THE WAY FORWARD”**



MEASURABLE AND SUSTAINABLE BUSINESS ADVANTAGES

When looking for the best solution, financial institutions must consider both the short and long term benefits. This does not just mean considering a technical solution in isolation. To achieve the full benefits, the whole package must be right:

- » the solution, its maintenance and support,
- » a partnership approach,
- » the business expertise and insight,
- » the business model.

EXPLOITING OPPORTUNITIES AND INCREASING REVENUE STREAMS

The technological approach this whitepaper has detailed means systems can expand both in terms of functional scope and volume; this gives businesses considerable agility and speed to seize the considerable opportunities presented by:

- » organic transaction growth,
- » new distribution channels,
- » new products,
- » innovative technologies,
- » new and emerging markets,
- » new added value revenue streams.

INCREASING MARGINS

The goal of providing the lowest unit cost per transaction is the central driver for cost reduction. However, this must be done whilst maintaining efficiency and performance. Depending on the constellation of technologies, business and licensing models, it is possible for financial institutions to significantly reduce operating costs.

Technological constellation: for example, use of standard databases and open architecture by gives you more freedom to choose your provider, thus contributing to the lowering of the cost of your solution; standardised modules, the building block principle and portability reduce development and integration costs.

Business models: selecting the right business model is also important. Transaction-based licence models facilitate the economic take-off. Alternatives to an in-house SI solution are partial hosting or a complete outsourcing model.



Agility and flexibility are essential to win business.

Benefits are maximised when the technical solution and the related services are right and aligned.



THE ATOS WORLDLINE APPROACH

Over 30 years' experience in Europe of providing state-of-the-art solutions to manage critical electronic transactions has given Atos Worldline unmatched business expertise and technical know-how.

The culmination of this expertise is our newest generation of international payment solution, **Worldline Pay**. It is a comprehensive multichannel solution offering high performance for the complex requirements of the acquirer, issuer and third party processor business. Its modular structure and the commonality of key features provide the basis of a comprehensive and flexible solution which can meet both individual existing and new requirements.

Integrating the technical features recommended by the best consulting experts in the payment sector, Atos Worldline has created its own concept of **eXtended Architecture (XA)** and related tools such as XA EasyFlow. **XA EasyFlow** is designed to speed up the development process as a framework and boost the processing power thanks to Java multithreading possibilities. This is critically required in batch or on-line processing.

Worldline Pay includes a family of solutions designed to support industrial size processing of card payments in an international context, and more specifically in the SEPA environment.

Worldline Pay SOA Service may also be used separately, in a modular way, to enhance legacy solutions (e.g. Worldline Pay Online Watcher for fraud detection, Worldline Pay Chip Management).

The design philosophy ensures that the system's growth and development is able to mirror precisely the growth and development of our customers.

Customers have more independence to make their own adaptations.

Worldline Pay is used both **in-house to support Atos Worldline operations** and **in the processing centres of our customers**.

Worldline Pay is already processing high volumes of transactions for a **wide range of clients** in an industrialised and secured environment.

WORLDLINE PAY

Over 30 years' experience

Integration of market requirements and technical experts recommendations

Process booster with XA EasyFlow

Both implemented in Atos Worldline and in customer processing center.

Full coverage of card payment value chain/
» Accepting
» Acquiring
» Issuing

WORLDLINE PAY TRIED AND TESTED

As part of Atos Worldline's future oriented approach, we benchmark our solutions to ensure the future readiness for our clients. One example is the Worldline Pay Back Office Issuing benchmark.

DRASTIC BENCHMARK CONDITIONS

In November 2008, hosted at a major hardware vendor's benchmarking centre, Atos Worldline undertook performance testing. The scope was defined in collaboration with one of the largest European payment market players. The large and complex real size Issuing Back Office environment that was reproduced including:

- » 2 systems of 32 CPUs each, at 5 GHz,
- » 40 million accounts, 6 months of transaction history and 850 million transactions,
- » 8 million (typical day) to 17 million (peak day) transactions per day.

TARGETS ACHIEVED!

The customer's predefined targets were either achieved or exceeded.

- » Cyclic batch processing was fully tested with account closure (2.9 million accounts closed per hour) and parallel direct debit generations (2 million per hour),
- » Transaction posting in batch and real time mode up to 1300 transactions per second (EMV transactions) and 20 million cards.



"Excellent results on processed volumes in relation to the implemented infrastructure and the configured environment. This promises an outstanding TCO."

About Atos Worldline

Atos Worldline brings together Atos Origin's core expertise in high-tech transactional services. A leader in end-to-end services for critical electronic transactions, Atos Worldline is specialised in electronic payment services (issuing, acquiring, terminals, card and non card payment solutions & processing), eCS (eServices for customers, citizens and communities) as well as services for financial markets. Atos Worldline on-going commitments to research and innovation enable its customers to benefit from award-winning solutions in areas such as mobile payments, secure IPTV, online CRM and paperless solutions. Atos Worldline generates annual revenues of €867 million and employs over 5,300 people in the world. On August 27th 2010, Atos Origin announced the acquisition of Venture Infotek - leading independent player on the Indian payment market. Through this acquisition, Atos Worldline reinforces its core business and enters one of the world's fastest growing payment markets. For more information: www.atosworldline.com

About Atos Origin

Atos Origin is a leading international information technology (IT) services company, providing hi-tech transactional services, consulting, systems integration and managed operations to deliver business outcomes globally. The company's annual revenues are EUR 5 billion and it employs 49,000 people. Atos Origin is the Worldwide Information Technology Partner for the Olympic Games and has a client base of international companies across all sectors. Atos Origin is quoted on the Paris Eurolist Market and trades as Atos Origin, Atos Worldline and Atos Consulting. For more information: www.atosorigin.com

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IF YOU THINK WE CAN HELP YOU, FEEL FREE TO CONTACT US.**