SPARKL®

Bring Machines Together

How SPARKL® technology brings order to the Black Box Swamp

Solution Brief

About SPARKL®

All enterprises suffer from the black box swamp. Systems that work fine on their own, but won't play nicely with others.

It's hard to describe how a system should work - let alone how or why different systems interact.

SPARKL® is powerful technology for managing the behaviour of distributed systems.

The simple, declarative Clear Box® modelling language lets you express the behaviour of all your systems - from applications right down to network infrastructure.

Then, the lightning fast, distributed SPARKL Sequencing Engine uses Clear Box to make them work together - driving events between all your machines, applications and things.

It provides Distributed Intelligence for true fog computing, allowing edge devices to interact with or without the cloud.

It introduces Reasoned Provisioning which spins up secure, on-demand infrastructure to meet the need of actual business logic.

SPARKL leverages standard blockchain technology to log every event between your systems in a tamper-proof Audit Trail to solve compliance and regulatory reporting across machines and systems, old and new.

SPARKL designs and develops the SPARKL® Sequencing Engine in London, UK. We work with partners including Cisco and Intel to market the product to innovators and customers worldwide.

SPARKL.COM

Introduction

The next generation of IT leaders in the banking sector face the same problems as their predecessors unless they address the legacy IT systems that are often blamed for outages.

The IT industry has been tasked with the enormous challenge of implementing innovation into the finance industry whilst taking on the fiendishly complex legacy systems.

The result of those pesky systems is that banks are often taunted by complaints from the public for constant fines.

In a particular case in 2015, the Financial Conduct Authority (FCA) **announced** it was fining Merrill Lynch, the Bank of America's wealth management division, for continued failures in its transaction reporting. They were fined $2.20 per line of incorrect or non-reported data - a higher than usual fine due to repeated failures to address the root cause of this issue.

On other occasions, massive IT outages in Tier 1 banks which **resulted** in payments not arriving when expected, including tax credits and disability living allowances, which has huge ramifications not only for its customers, but the bank's reputation suffers heavily as well.

With banks facing competition from new challengers (with some employing a more modern, digital-only approach in their strategy) in the financial sector, customers are starting to lean away from the old favourites and beginning to move to services they can trust implicitly.

Of course, banks are never without their problems - complexity in IT is almost unavoidable, but somewhat mismanaged in the financial industry.

And we can manage this complexity, with an innovative solution that delivers on key business demands of flexibility, cost, security and transparency.

<p align="center">Let SPARKL show you how.</p>

The Corporate Challenge

Under pressure from regulators and shareholders, banks are forced to commit huge amounts of money and resources into the area known as conduct risk.

They are obliged to report on every aspect of their operations with greater frequency and precision than ever before.

Management committees dealing with compliance, risk and conduct have multiplied, and scores of new compliance and oversight roles were **created** in the wake of the financial crisis in 2008.

And yet the fines just keep on coming.

These fines have totalled $20 billion for one global bank alone in just over two years. Even this cost is nothing in their eyes compared to the damage they suffer to their reputation.

The pain is felt above at board level, and the solutions are clearly desired by the business - and yet frequently too complex for technologists to implement.

These technologists preside over vast collections of black box applications running over generic infrastructure.

Today's technology stack simply doesn't provide the detailed, comprehensive log data that is required to satisfy the demands of regulators and shareholders, or provides too much data to analyse effectively.

A typical global bank can have over several thousands of applications running in excess of thousands of systems.

Every system is a "black box" with internal operations that can't be inspected, let alone be tracked from the outside. The user might know what is inputted and what the expected outcome is supposed to be, but not how the results are achieved. They tend to use infrastructure in ways that are almost impossible to track and test.

This is the black box swamp - killing agility, flexibility, stifling innovation, shackling capital - and above all, increasing the potential for conduct risk for the bank.

As a result, your IT infrastructure can be fragmented and inconsistent. Data about the same customer, costs relating to the same product or revenues attributable to a single relationship are often divided in between black boxes that can't even interact with each other properly.

Most likely your systems were built separately within individual departments. During the pre-recession boom, this was often the quickest way to capture new business opportunities.

But that means tools that measure various risks or customer values may be spread around separate systems within your company, sometimes even living in an Excel spreadsheet on an employee's desktop.

Banks are typically vast enterprises with endlessly moving parts that are worth billions of dollars, yet the business view of IT remains rather traditional; seen as a supplier rather than a partner or a core part of the business.

Banks usually build their applications on a single technology platform, called a monolith. These are easy to build, but harder to manage over time. For example, once core processing systems were built in the late 1980s for deposit accounts and payments, they were never touched again with the exception of maintenance, hence the raft of complexity that exists within those systems today.

Figure 1: Example of IT complexity in a single mortgage system at a bank, otherwise known as the Black Box Swamp
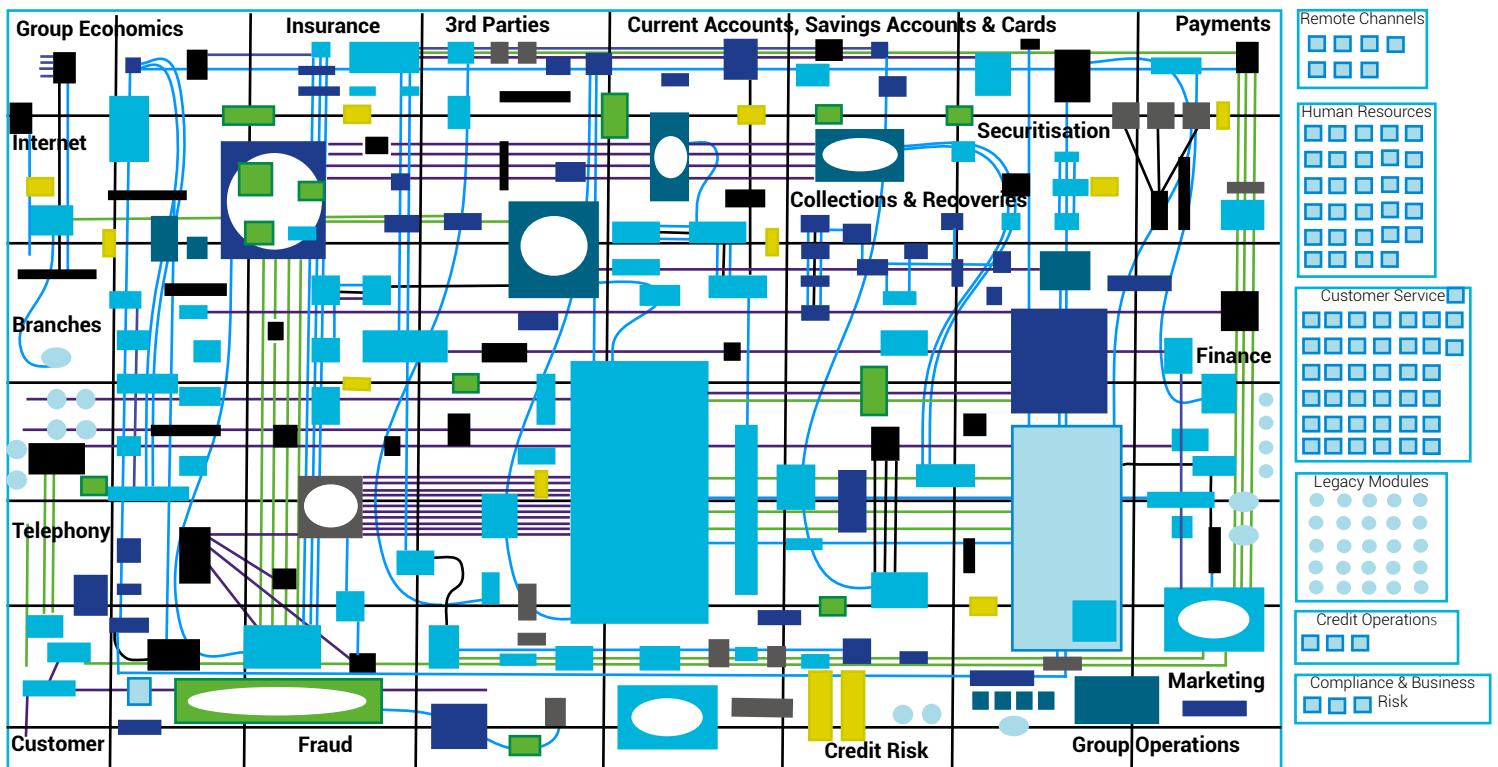
The SPARKL Solution

SPARKL has designed and developed powerful technology for making machines work together, and providing a unique solution meeting the key business demands of transparency, security, agility, and as such, help the business free up capital.

Transparency

SPARKL's declarative Clear Box® contract modelling language, coupled with the lightning fast SPARKL Sequencing Engine, helps you express the behaviour of all your systems, from applications right down to network infrastructure, providing a tamper-proof **Audit Trail**.

With consistent usage and performance metrics, this provides businesses with long-desired, continuous visibility in their own processes and the systems that contribute to it - as well as a complete understanding of the events that flow through them.

Security

Today's cloud solutions come with big security headaches. Through **Distributed Intelligence**, SPARKL leverages distributed ledger technology to make cloud, edge and legacy systems work together, ensuring your data stays in the right place, safe and private for increased agility and better security.
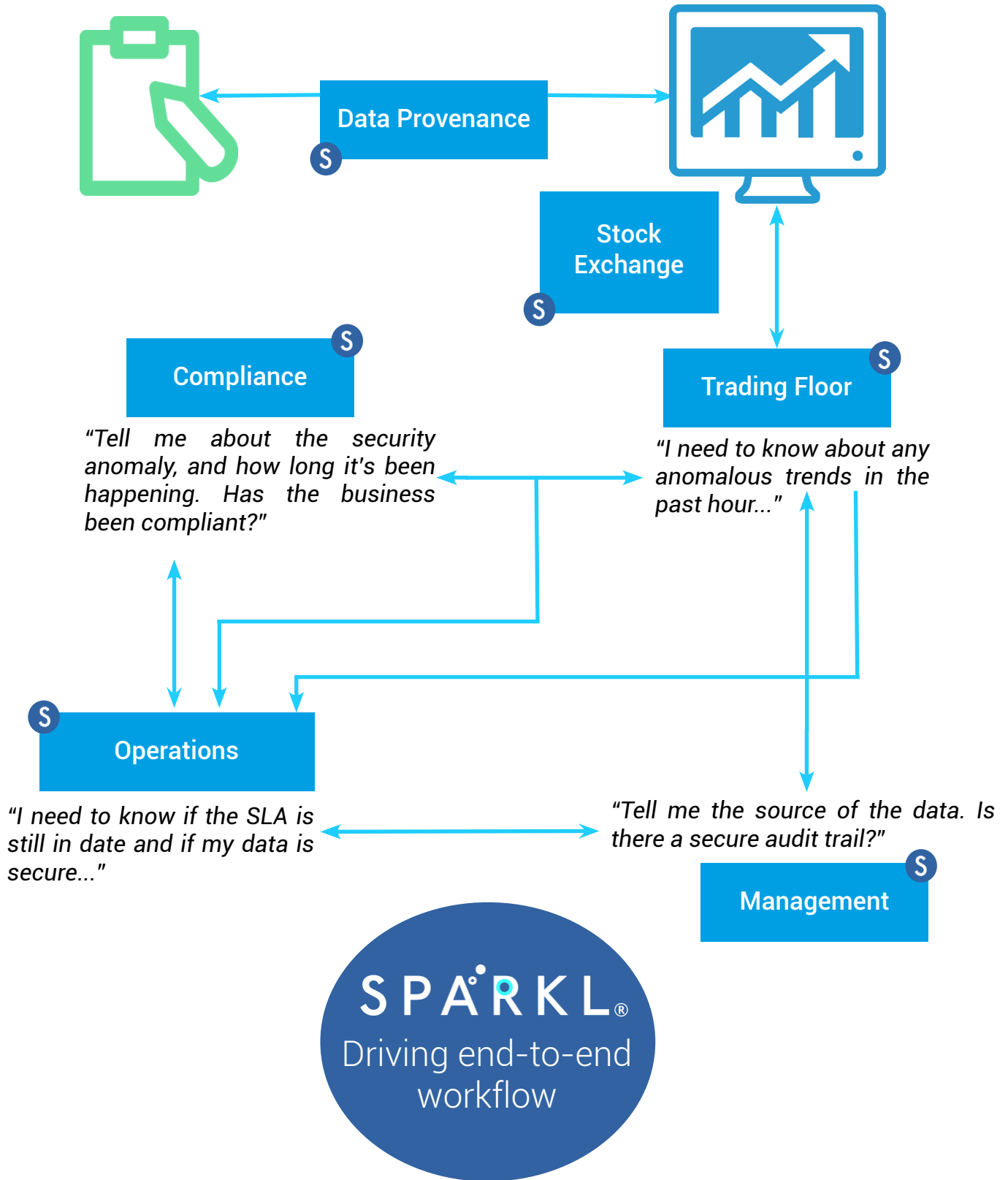
Agility

SPARKL introduces **Reasoned Provisioning** which spins up secure, on-demand infrastructure to meet the needs of actual business logic, with high levels of granularity.

Now all your systems conform instantly and automatically, breathing new life into your IT assets.

Capital

SPARKL enables bankers to control legacy costs, potentially reshape IT architecture for competitive and technical advantage, and the opportunity to generate maximum return on investment (ROI) value - all by bringing together your legacy and modern systems.

Storyboard – Tracking Compliance on the Trading Floor

Data Provenance

Stock Exchange

Compliance

"Tell me about the security anomaly, and how long it's been happening. Has the business been compliant?"

Trading Floor

"I need to know about any anomalous trends in the past hour..."

Operations

"I need to know if the SLA is still in date and if my data is secure..."

"Tell me the source of the data. Is there a secure audit trail?"

Management

SPARKL®
Driving end-to-end workflow

Bringing Order to the Black Box Swamp

Every bank must deal with its own black box swamp, but very few are able to control it. Instead, monolithic systems are grown organically and the results are often duplicated with inconsistent data and a fine to boot.

Tracking data can take up valuable time and resources that could be better spent on driving actual innovation. However, it's gradually becoming clear how important it is to understand the various behaviours of the pieces of your systems.

Overcoming the complex data landscape that exists in many banks is an enormous challenge, and the demand for a technology such as SPARKL has increased in recent years as the markets in which these firms operate have become more complex and subject to regulatory scrutiny.

Yet banks remain wary of new technology. After all, Citigroup [forecasts](#) that the mere existence of fintech will have a major impact on the industry, potentially cutting 2 million jobs in Europe and the USA over the next decade, due to pressure to return to pre-2008 profit levels.

Additionally, banks are struggling to meet customer expectations, such as 24/7 access and support for services, and for others, an interactive, mobile-friendly type experience might be more appealing, complete with emojis.

Financial companies need to take a leap of faith and acknowledge that we're at the very forefront of a digital revolution. Large companies whose agility let them down will be the ones to suffer.

It's time to start thinking like a startup and act like a player.

Let's talk

Go to sparkl.com to talk to us live or shoot us an e-mail at talk@sparkl.com.

@sparkl

See SPARKL tutorials and demos at
sparkl.com/docs/web