

January 2015



Happy New Year! Welcome to the first issue of Velocitates in 2015. One of the core tenets of the SWIFT Institute is the dissemination of knowledge and information, and through this newsletter that is exactly what we'll do.

As ever at the start of the new year I take time to reflect on what was achieved during the previous year, and what challenges and new opportunities we have to look forward to in 2015. In the months since the last issue of Velocitates the SWIFT Institute has achieved a great deal, and we are already looking forward to an exciting and very busy year ahead.

Sibos last September was a great success! We brought many academics to Boston (as if there were not enough there already!), and gave them the opportunity to deliver lectures to Sibos delegates on a wide range of topics. The programme was very well received and we are already lining up academics to go to Sibos in Singapore this October.

We partnered with Belgium's KU Leuven university last November for a one day conference on Cyber Security in the Financial Industry. The event was so interesting (and somewhat unnerving) that we are going to revisit the topic in partnership with an American university for a cyber conference in May. Details will be announced in the coming weeks.

We recently issued four new research grants, bringing the total to 23 since launching the Institute in 2012. The four new grants cover two very topical areas: virtual currencies and data usage.

We ended 2014 by publishing three new working papers. The first of the three papers is a fascinating look at the *Global Network of Payment Flows* (Kimmo Soramäki and Samantha Cook). SWIFT's own CEO Gottfried Leibbrandt even referred to this research during the Sibos opening plenary in Boston, and you can read more about this research in an article authored by Kimmo and Samantha below. The second paper to be published is the *Theory of Optimum Financial Areas: Retooling the Debate on the Governance of Global Finance* (Erik Jones and Geoffrey Underhill). You can read more about their research in our Hot Topic article below, and you can watch a Finextra interview with Erik Jones on his research [here](#). Last but certainly not least we published *Cross-border Low Value Payments and Regional Integration: Enablers and Disablers* (Leo Lipis and Colin Adams) in December. This paper ranks the comparative success of various regional payments integration projects that are necessary to support economic growth. Since launching the SWIFT Institute we have now published 10 working papers, with many more in the pipeline. All of our papers are available for download [here](#).

There's no rest for the SWIFT Institute - we are already planning for our first research grant of 2015. A new Call for Proposals was issued at the start of the year on the topic of *Money Laundering Risks Facing Third-party Payment Providers*.

We are at the beginning of what I am sure will be another interesting year. I look forward to bringing

you the next issue of *Velocitates* in the coming months, and as ever appreciate your ongoing input and support.

Peter Ware

Topics in this issue

[News](#), [Hot Topic](#), [Research](#), [Conferences](#), [Coming Soon](#)

News

Cyber Security in the Financial Industry: Conference Reflections

By Professor Bart Preneel

*Department of Electrical Engineering-ESAT/COSIC (Computer Security and Industrial Cryptography)
KU Leuven*

On 19 November 2014, the SWIFT Institute and KU Leuven hosted a one day conference focusing on cyber security issues impacting the global financial industry. The program brought together experts from academia, the financial and technology industries, and law enforcement, resulting in several interesting observations.

In his opening address, SWIFT's CEO Gottfried Leibbrandt discussed the paradoxical observation that Internet security keeps getting worse, while e-commerce keeps growing. As a potential solution for the mounting cybersecurity challenges he proposed a comparison of the co-development of diseases and immune systems. Creating durable solutions to cybersecurity requires better ecosystems and infrastructure, international cooperation, as well as non-proliferation treaties (similar to those against biological warfare).

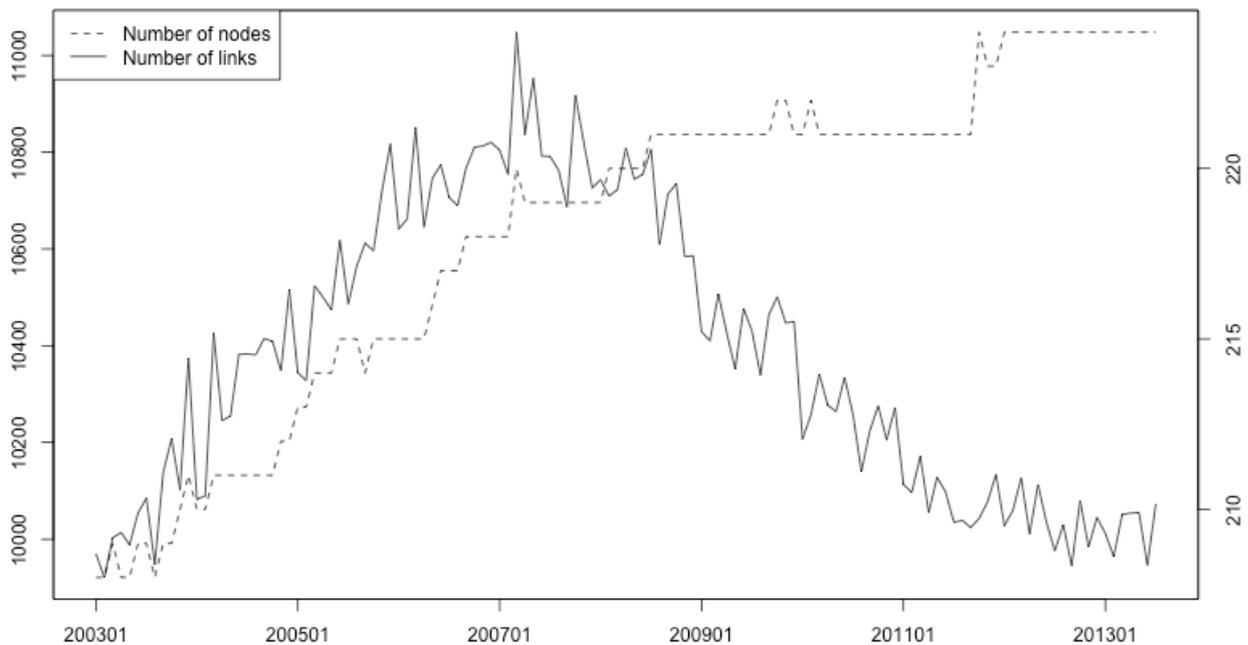
The insider threat was confirmed as real and serious. One needs to consider both malicious and non-malicious insiders and cyber and non-cyber threats. Today employees have access to sensitive data anywhere and on a 24/7 basis, but on the other hand capabilities to monitor employees have increased substantially. Monitoring also needs to take into account the privacy rights of employees. Addressing insider threats requires strong governance and is the responsibility of every single person in the organisation, and not just of the Chief Security Officer. Communications between HR and business units still need to be improved.

Read the full article [here](#).

The Global Network of Payment Flows

By Samantha Cook and Kimmo Soramäki

The paper *The Global Network of Payment Flows* provides a descriptive analysis of the payment networks created by flows of SWIFT MT 103 messages. MT 103 (Single Customer Credit Transfer) is the most commonly-sent SWIFT message type and therefore may be a useful measure of global economic activity. In the payment networks, nodes represent countries, directed links indicate when at least one message was sent from one country to another, and link weights store the number of messages sent between countries. The data forms a time series of networks, with a distinct network for each month between January 2003 and July 2013. We begin by considering the number of countries, number of links, and total number of messages sent in each network. We find that although both the number of countries and number of messages sent were fairly steadily increasing during the period of study, the number of links in the networks increased steadily until early 2007 and then began to decrease, with the number of links at the end of the series only marginally higher than at the beginning. We hypothesize that the decrease in number of links may be related to increased banking regulations in the wake of the financial crisis.



Read the full article [here](#).

Back to School @ Sibos

The SWIFT Institute brought academics to Sibos in Boston and will do so again at Sibos in Singapore

The SWIFT Institute was incredibly excited to have brought academics to last year's Sibos programme held in Boston. Called *Sibos University*, this forum featured leading academics giving 30-minute lectures on a wide range of topics impacting the global financial industry.

Academics from universities around the world attended including Harvard, MIT, Bentley, University of California San Diego, George Mason University, University of Delaware, University of Toronto, Western University, University of Tilburg, University of New South Wales, Coventry Law School, Manchester Business School and the London School of Economics & Political Science.



Opening Lecture: Peter Cowhey, Dean, School of International Relations and Pacific Studies, Qualcomm Chair in Communications and Technology Policy, University of California San Diego

Read the full article [here](#).

Hot Topic



Erik Jones, Director of European & Eurasian Studies at the Paul H. Nitze School of Advanced International Studies of the Johns Hopkins University

Financial Market Integration and the New OFA Theory

When examining examples of financial market integration over the past 300 years, some could argue that the slow but steadfast progress towards consolidation of financial economic regions is inevitable. In order to perform analysis upon the governance of these financial integrations, can and should the lessons of the United States, Canada and, more recently, Europe be transplanted to other



Robert Jenkins, Adjunct Professor, Finance at London Business School



Masayuki 'Mike' Tagai, Global Market Infrastructure Executive for Asia at J.P. Morgan's Corporate & Investment Bank

areas of the world such as Asia?

Erik Jones, Director of European & Eurasian Studies at the Paul H. Nitze School of Advanced International Studies of the Johns Hopkins University, and Geoffrey Underhill, Director of the Political Economy & Transnational Governance research programme at the Amsterdam Institute for Social Science Research, think they should. They have developed a paper sponsored by the SWIFT Institute that develops the idea of Optimum Financial Areas (OFAs) as a more pertinent and modern tool for policymakers when determining economic policy in the aim towards financial stability.

In this increasingly integrated world, Jones and Underhill encourage policymakers to utilise the OFA framework in order to better weigh up the costs versus benefits of the wider technical market substructures and macro-prudential elements in play.

The SWIFT Institute spoke to Erik Jones regarding his paper, *Theory of Optimum Financial Areas: Retooling the Debate on the Governance of Global Finance* (co-written with Underhill), as well as to Masayuki 'Mike' Tagai, Global Market Infrastructure Executive for Asia at J.P. Morgan's Corporate & Investment Bank, and Robert Jenkins, Adjunct Professor, Finance at London Business School and former member of the interim Financial Policy Committee (FPC) of the Bank of England, in order to gain their perspectives of the reality in application of OFAs to areas outside of Europe.

Optimum Financial Areas (OFAs)

The theory of Optimum Financial Areas builds on the economic theory of Optimum Currency Areas (OCA), but instead of concentrating on exchange rates or macroeconomic adjustment, there is rather a focus on capital mobility and cross-border financial transactions.

Read the full article [here](#).



OFAs: A brief history - Canada does it well

Erik Jones and Geoffrey Underhill's research entitled *Theory of Optimum Financial Areas: Retooling the Debate on Governance of Global Finance* puts forward the idea that the economic theory of Optimum Currency Areas should be updated to that of Optimum Financial Areas (OFAs).

Their working paper looks at three historical national cases - the United Kingdom, the United States and Canada - where examples of identified OFA "criteria" have been used in order to broadly stabilise financial market integration.

The UK is an excellent example of early emergence of several of the most crucial OFA criteria, starting with the establishment of the Bank of England in 1694 taking on the role of a public debt management system. Over the next three hundred years both a common risk-free asset in the form of government-issued paper, and a clearance and settlement system with the Bank as the eventual settlement agent were developed.

The United States established adherence to some of the criteria but through a very different route due to the fact the US evolved out of a series of disparate colonies and financial systems. The Federal Reserve System created in the 1913 Act took care of a common risk-free asset and a sound system of sovereign debt management. A genuine common framework for financial supervision and prudential oversight remains somewhat elusive, however, as successive crises including the Great Depression, the Savings and Loans crisis of the late 1980s, and the recent financial panic of 2007-2009 have illustrated. Co-ordination amongst agencies responsible for different sorts of financial institutions remains a problem, and bankruptcy of public agencies continues to plague economic growth.

Canada represents a surprising contrast to that of the United States. A diverse and historically fragmented country, Canada nevertheless had a smoother route in fulfilling the OFA criteria thus providing financial stability for its citizens. Three criteria were fulfilled by the Confederation of 1867: a common risk-free asset in the form of the Canadian dollar underpinned by the Gold Standard and government securities; a well-organised and national system of ten clearing and settlement houses created by the large banks and the Canadian Bankers' Association, and; a centralized system of debt management established with government securities serving as collateral. The 1914 Finance Act instituted a formal lender of last resort facilities to the banking system, whilst a new financial supervisor (the Office of the Superintendent of Financial Institutions) was formed in 1996 combining insurance, banking, and securities markets oversight.

In summary, Canada arguably fulfils the OFA criteria as well as any national financial system today. Canada experienced no bank failures in the global financial crisis of 2007-09.

Download Erik and Geoffrey's OFA Theory paper [here](#).

Research

Three New Working Papers Published

The Global Network of Payment Flows

- Kimmo Soramäki and Samantha Cook

Theory of Optimum Financial Areas: Retooling the Debate on the Governance of Global Finance

- Erik Jones and Geoffrey Underhill

Cross-border Low Value Payments and Regional Integration: Enablers and Disablers

- Leo Lipis and Colin Adams

Our sincere thanks to all of our researchers for their efforts and hard work in conducting and completing their research. You can download all SWIFT Institute papers [here](#).

Four New Grants Issued

- An Analysis of Bitcoin as a Novel Distributed System
- The Influence of Virtual Currency on Fiat Currency
- Multinational Banking and Conflicts among US-EU AML/CTF Compliance & Privacy Law: Operational & Political Views in Context
- The Role of Big Data in Governance: A Regulatory and Legal Perspective of Analytics in Global Financial Services

Details of the new grants can be found [here](#).

One New Call for Proposals Issued:

- Money Laundering Risks Facing Third-party Payment

Did you know...



The name of the SWIFT Institute newsletter, Velocitates, comes from the Latin velocitas meaning swiftness, and in our case the plural therefore swiftnesses. Velocitates appeared in print in the early 1700s in the world's first scientific journal; The Philosophical Transactions published by the Royal Society of London for Improving Natural Knowledge. The journal's aim was, and continues to be, to inform readers of the latest scientific discoveries. A worthy aim, and a goal the SWIFT Institute will strive to emulate.

By the Numbers

23 grants issued
10 completed

The deadline to make submissions for this Call is 11 February 2015. Download the Call for Proposals [here](#).

Research Underway

Modelling the cost of financial services across countries using a Dynamic Hierarchical Bayes framework
A global perspective of women in finance
A predictive cybercrime cost model for the financial industry
Regulatory Compliance - Extraterritorial Challenge
Examination of Financial Data Collection Processes and Standards
Analysis of Domestic / Cross-Border Clearing & Settlement Systems in Asia
Operational Risk in Investment Management Institutions Through Outsourcing
The Role of Securitisation in China's Capital Markets
Near Real-time Retail Payment and Settlement Systems Mechanism Design
An Analysis of Bitcoin as a Novel Distributed System
The Influence of Virtual Currency on Fiat Currency
Multinational Banking and Conflicts among US-EU AML/CTF Compliance & Privacy Law: Operational & Political Views in Context
The Role of Big Data in Governance: A Regulatory and Legal Perspective of Analytics in Global Financial Services

For more details visit our web site.

Completed Research

Can mobile money be used to promote savings? Evidence from Northern Ghana
The Prospects for a Common Language in Wholesale Financial Services
Internationalisation of the RMB: New Starts, Jumps and Tipping Points
New Regulations and Collateral Requirements – Implications for the OTC Derivatives Market
Financing the SME Value Chains
A Dynamic Stochastic Network Model of the Unsecured Interbank Lending Market
Macprudential Oversight, Risk Communication and Visualization
The Global Network of Payment Flows
Theory of Optimum Financial Areas: Retooling the Debate on the Governance of Global Finance
Cross-border Low Value Payments and Regional Integration: Enablers and Disablers

To download the working papers visit our web site.

Conferences

Every year we will host at least two conferences where we will bring together academia and the financial industry to engage in dialogue on a specific topic. Visit the [SWIFT Institute](#) regularly to find out about upcoming events.

Our last event of 2014 was on *Cyber-security in the Financial Industry*, in partnership with KU Leuven. You can read about the event in Professor Bart Preneel's article above. The day was such a success that the topic will be the focus of our first event in 2015. It will take place on the east coast of America in May - full details will be announced soon.

We will be teaming up with SWIFT's Standards Forum at an event in New York in November focused on standards and financial regulation. And of course the SWIFT Institute will be returning to Sibos, which this year takes place at the Marina Bay Sands in Singapore in mid-October.

Future

- 18 May 2015
- **Cyber Security in the Financial Industry**
Venue - TBC, East Coast, United States of America

Full details will be announced soon - [Events](#).

- 12 - 15 October 2015
- **Sibos**
Venue - Marina Bay Sands, Singapore

Full details will be announced soon - [Sibos](#).

- 3 November 2015
- **Standards and Regulation**
Venue - TBC, New York, United States of America

Full details will be announced soon - [Events](#).

Coming Soon

Here is what you can look forward to from the SWIFT Institute in the months ahead...

- New working papers published – Q1 / Q2
- Next issue of Velocitates – Q2
- SWIFT Institute engagement at SWIFT's regional business forums - *more details soon*
- SWIFT Institute engagement at third-party conferences - *more details soon*

[Visit the website](#) to see what else is happening at the SWIFT Institute.

[Unsubscribe from the newsletter](#)



LinkedIn



Twitter