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European Market Infrastructure Regulation –
An Initiative for Greater Safety and Integrity
in OTC Derivatives Markets

Mindfully Resisting the Bandwagon –
IT Innovation Assimilation in the
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The Side Effects of Secure Web
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Cloud Impact on End User Computing

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Editorial

European Market Infrastructure Regulation – An Initiative for Greater Safety and Integrity in OTC Derivatives Markets

Stefan Mai

Dr. Stefan Mai
Head of Market Policy &
European Public Affairs
Deutsche Börse AG

Following several weeks of intensive discussions, the law-making bodies of the European Union, the European Parliament, the European Commission and the Council of the European Union, reached an agreement on the legislation on over-the-counter (OTC) derivatives, central counterparties and trade repositories, the so-called European Market Infrastructure Regulation (EMIR), in their negotiations on February 9th, 2012. After the final coordination meetings on the compromise, the regulation was adopted by the European Parliament on March 29th, 2012. Thereafter, the Council will adopt the legislation but there is no concrete date set yet. Thus, it is still not clear when exactly, in the second half of 2012, the regulation will enter into force.

In 2008, the financial sector all around the world, in the wake of the collapse of Lehman Brothers in the same year, was hit by an extraordinarily severe crisis. This crisis exposed weaknesses in the financial system, including problems related to the use of OTC derivatives,

and was the starting point for comprehensive regulatory measures in the European Union.

The year after, in September 2009, G20 leaders called for improving OTC derivatives markets by stating that "all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest".

Partly in response to this demand, on September 15th, 2010, the EU Commission published its EMIR proposal for legislation on OTC derivatives, central counterparties and trade repositories. The proposal complies with the requirements set out by the G20 leaders and defines a new framework for more efficient, safe and sound OTC derivatives markets.

For this purpose, the regulation introduces a clearing obligation for standardized OTC derivatives as well as reporting obligations for all derivatives. Moreover, EMIR covers supervision and authorization provisions for central coun-

terparty clearinghouses (CCPs) and authorization, supervision and organizational requirements for trade repositories. Non-financials and intragroup transactions both are exempted from the scope of EMIR, if they are below a pre-defined threshold.

Some articles of EMIR will be applicable immediately, while others require the development of regulatory technical standards by the European Securities and Markets Authority with other relevant authorities, which are necessary to fulfill the obligations laid down in the legislative text, by September 30th, 2012.

Market participants and infrastructure providers are already laying the foundations to meet the requirements set out in EMIR in close cooperation with customers. The fundamental need to adjust the processes and structures in the OTC derivatives business to comply with EU law led to new initiatives by market infrastructures. Thus, already now, and even more so in the future, special clearing services for OTC derivatives will be provided, risk management mod-

els will have to be extended and new reporting services for a wide range of OTC financial instruments will be offered.

In addition to EMIR, other regulatory initiatives such as the review of the Markets in Financial Instruments Directive and the Capital Requirements Directive will have an immediate impact on OTC derivatives markets. All follow the same objective, namely to make financial markets more stable and secure. The challenge for the future will be to ensure that the different initiatives do not provide conflicting provisions, but harmonized rules in a truly unified European financial market.

In summary, it needs to be acknowledged that the initiative by the European Commission and the compromise reached recently by the European law-making bodies on EMIR can be considered as an important step towards greater safety and integrity of financial markets. With this new regulation, the EU makes a decisive contribution to fulfilling the G20 requirements within the given timeframe.

Research Report

Mindfully Resisting the Bandwagon – IT Innovation Assimilation in the Financial Crisis

ALTHOUGH THE FINANCIAL MELTDOWN WAS INITIALLY CAUSED BY HERDING BEHAVIOR IN THE SUBPRIME MARKET FOR CREDIT DEFAULT SWAPS, A CONCURRENT "MINDLESS" IT INNOVATION ASSIMILATION OF PARTICIPATING FINANCIAL SERVICES PROVIDERS PLAYED A MAJOR ROLE IN FACILITATING THE UNDERLYING BANDWAGON.

Martin Wolf
Immanuel Pahlke

Roman Beck
Wolfgang König

Introduction

As the last financial crisis from 2007 to 2009 depicted, economic scenarios of high dynamism and volatility demand a firm's continuous technological adaptation to retain a competitive position, as well as to comply with regulatory requirements. Such situations, which are characterized by high uncertainty, facilitate the emergence of mimicry and bandwagon phenomena among competing organizations that might negatively affect the realization of business value (Fiol and O´Connor, 2003). For instance, uncertainty resulting from incomplete information on future market developments most likely leads to a behavior of inconsiderately following a so-called "best practice approach". In such situations, organizations tend to justify their decisions with the consensus of the "herd" rather than environmentally aligning their IT innovation strategy. In this context, the cognitive construct organizational mindfulness is assumed to be an effective means to identify, quantify, and accommodate changes facilitated by the market. Accordingly, this dynamic capability could also help to actively resist arising bandwagon phenomena that might otherwise negatively affect the generation of (IT-induced) business value.

Recent research in the realm of IT innovation assimilation shed light on the influence of institutional pressures on the organizational assimilation of different IT innovations, e.g., (Liang et al., 2007). However, little empirical research has been conducted on analyzing the interplay of mimetic pressure resulting from environmental turbulence (Fiol and O´Connor, 2003), as well as dynamic capabilities attenuating these effects. In this respect, we regard organizational mindfulness as a firm's "rich awareness of discriminatory detail and a capacity for action" (Weick et al., 1999). Consequently, organizational mindfulness can be regarded as a promising means for organizations to successfully deal with uncertain situations, which otherwise potentially lead to disastrous negative consequences. In the context of IT innovation assimilation, organizational mindfulness is assumed to help identifying and resisting pure mimetic IT assimilation behavior and cope with incomplete information and environmental turbulence which both potentially decrease IT-based business value generation. Accordingly, we conceptualizes the aforementioned interplay of mimicry as one instance of institutional pressures driving the IT innovation assimilation process and organizational mindfulness against the background of a highly turbulent environment as reflected by the last financial crisis.

Interplay Between Institutional Pressure and Mindfulness in Highly Turbulent Environments

The financial crisis from 2007 to 2009 reflected an extraordinary period of time with regard to the extent of market volatility. Rapid changes in the market and technological demand, subsumed by the concept of environmental turbulence, lead to an increase of uncertainty. In this regard, rapidly changing markets demanded financial services providers to assimilate IT innovations that are suitable to deal with such rapid changes and related risk exposures, while concurrently, more than 160 US American banks defaulted. For instance, Lehman Brothers broke down within a few days not at least due to insufficient IT-based risk management systems.

Accordingly, it can be assumed that uncertainty about future market developments and current market conditions might seriously influence the generation and realization of business value from IT innovation assimilation in a negative way. Consequently, our first guiding research objective was to explore *how environmental turbulence affects the influence of mimetic pressure and the realization of business value from IT innovation assimilation.*

However, even in a market crisis, some firms master to overcome these challenges in a better way than their competitors or are even able to potentially exploit them to a certain degree. This significant difference in realized results can be partly attributed to capabilities allowing organizations to align the IT innovation assimilation process with environmental contingencies. Here, the "rather mindful" firms identify changes in the market earlier and are therefore able to derive highly contextualized IT innovation strategies. More than that, they are able to determine if an arising bandwagon phenomenon might be rather beneficial or harming to their firm objectives. Consequently, the second guiding research objective was to assess *differences between rather mindful and less mindful firms in channeling mimetic pressure to IT innovation assimilation processes against the background of environmental turbulence.*

The required dynamic capabilities encompass reasoning to actively resist arising bandwagon phenomena that solely stem from mimetic pressure and not necessarily based upon rational reasoning. As far as the mediating agencies are concerned, we conceptualize the influence of institutional pressure on top management support as core human agency for channeling mimetic pressure to the IT innovation assimilation process (Liang et al., 2007) against the moderating influence of environmental turbulence. Based on 302 complete responses from the Anglo-Saxon financial services industry, gathered during the financial crisis, we empirically analyzed the relationships contained in our conceptual model (see Figure 1) in order to find evidence for the aforementioned research questions.

Figure 1: Results of the group comparison (low vs. high organizational mindfulness)

Empirical Results and Discussion

The empircal results (see Figure 1) emphasize that, in particular, mimetic pressure drives the top management to support IT innovation assimilation initiatives. Hence, it is the behavior of successful competitors initiating new bandwagons that seduces other firms in the same market to join the innovation without considering their firm-specific circumstances. In addition, the empirical results indicate that the influence of mimetic pressure on top management support is indeed strengthened by a highly turbulent environment. Thereby, we underpin the conceptual proposition that environmental turbulence eventually fosters cognitive uncertainty and resulting mimicry. In essence, our results facilitate the learning from the past crisis to reveal mechanisms of mimicry and herding behaviour that are likely to be present in highly turbulent industries in general.
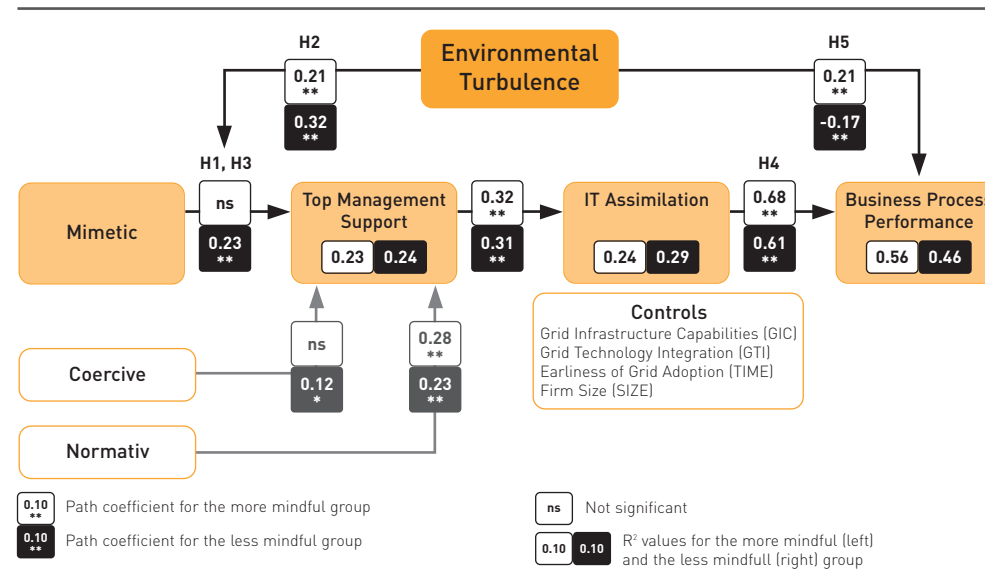
With the distinction between rather mindful and less mindful firms, we provide a more nuanced perspective on IT innovation assimilation and its exposure to environmental turbulence, as well as the consequences of mimetic pressure. In this regard, we find that organizational mindfulness mitigates the positive moderating impact of environmental turbulence on the influence of top management support. Consequently, in rather mindful firms, the top management is less likely to be affected by mimetic pressure caused by environmental turbulence. Moreover, the direct influence of mimetic pressure on top management support even vanishes in rather mindful firms. This can be attributed to the capability of "reflection in action" that is assumed to be especially well-developed in mindful organizations. In this context, "reflection in action" is defined by the capability to actively learn and realign from prior and current experiences, in particular from critical, "transformative" change as initiated by bandwagons. Finally, we find evidence that rather mindful firms realize more business value from IT innovation assimilation at the business process level than less mindful firms. However, the results also reveal that the realization of IT-based business value is highly contingent and thus cannot be solely reduced to the IT innovation assimilation process itself. This would also explain why the direct effect of environmental turbulence on business value generation is relatively strong and significant.

Conclusion

The results of this study indicate that decision-makers need to take into account that an increased extent of environmental turbulence eventually leads to a higher exposure to mimetic pressure. Being aware of this relationship can be one starting point to improve the organizational scanning capabilities (e.g., by means of better decision support systems) and initiate a mindful decision-making process to identify contextually appropriate IT innovation decisions. Additionally, organizational mindfulness can be assumed to be one critical focus of HR development to build and sustain the organizational capability to effectively identify and successfully master changes facilitated by the market. Furthermore, organizational mindfulness enables a firm to actively resist arising bandwagon phenomena that might otherwise negatively affect the generation of (IT-induced) business value.

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Research Report

The Side Effects of Secure Web and Cloud Service Usage

NOWADAYS, ORGANIZATIONS ARE INCREASINGLY RELYING ON THIRD PARTIES TO SUPPLY VITAL IT SERVICES, WITH THE COMMUNICATION BEING PREDOMINATELY CONDUCTED VIA THE INTERNET. THIS, HOWEVER, POTENTIALLY EXHIBITS SENSITIVE BUSINESS INFORMATION TO OUTSIDERS. IN THIS ARTICLE, WE SHOW WHICH UNDESIRED SIDE EFFECTS STATE-OF-THE ART COUNTER MEASURES MAY HAVE.

Ulrich Lampe
Ralf Steinmetz

André Miede

Introduction

Over the last decade, service-orientation has been one of the major trends in the IT industry. Furthermore, it has inspired a variety of novel architectural paradigms, most notably, Service-oriented Architectures (SOA) and cloud computing. The general idea is to provide certain, often vital business functionality as a service from both internal and external providers, e.g., using Web services as a prominent and widely adopted implementation technology. Today, this development has cumulated in the popular and successful idea of providing "Everything as a Service" (XaaS), which in turn is one of the essential characteristics of cloud computing.

For the financial industry, this service-orientation is an important IT design principle and provides multiple benefits. First, it eases the integration of internal legacy IT systems through standardized interfaces. Second, it enables the seamless cooperation with external parties, e.g., which may be able to provide certain services substantially cheaper by exploiting specialization and economies of scale. In the latter case, the communication between a service user, such as a financial institution, and an external service provider is often conducted via public networks, most notably the Internet. To ensure typical security requirements such as confidentiality, the contents of the transferred messages will be encrypted, e.g., as recommended by the Federal Office for Information Security (2009).

However, an attacker – for instance, a competitor or a foreign government – can still relatively easily observe the fact that a communication process is conducted between the service user

and service provider. Based on this information, an attacker may, for instance, identify optimal times for targeted Denial of Service attacks (e.g., busiest hours of the day), thus increasing potential damages. The attacker may also deduce business-relevant information about the service user (i.e., the financial institution), such as the success rate of certain transactions. On the other hand, attackers may gather detailed information on the service provider's business, e.g., its customer base, usage patterns, peak hours, and so on.

All this is possible without looking at the contents of the (encrypted) messages but only by monitoring communication relationships, e.g., between a financial institution and its service providers. Thus, a security goal that is commonly referred to as *relationship anonymity* is seriously threatened (Miede et al., 2011).

Fortunately, the research community has been concerned with this problem in different scenarios for many years. The combined efforts have resulted in so-called *anonymity systems*, which permit to obfuscate communication relations in public networks. The principle idea is to employ randomly selected relay nodes for the transfer of a message, which exacerbates eavesdropping and identifying communication relationships substantially. The principle is illustrated in Figure 1, where "U" denotes the service user and "P" denotes the service provider; "B" and "C" are randomly selected relay nodes in the anonymity system. "A" and "D" denote other possible nodes of the anonymity system that could have been chosen.
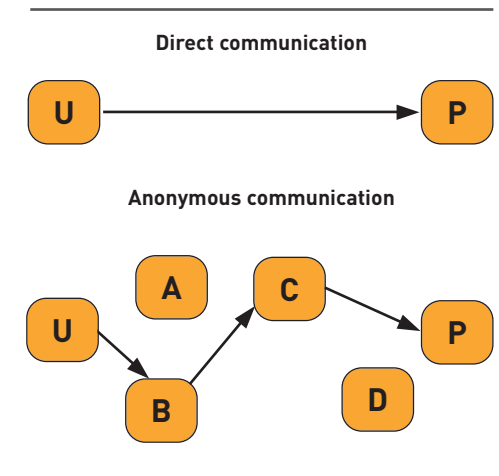

Figure 1: Direct vs. anonymous communication

Unfortunately, using such anonymity systems has side effects as well: through the introduction of relay nodes, the path of a message through the network may be significantly prolonged. This may inflict service consumption with respect to different Quality of Service (QoS) parameters, such as response time or throughput. Aside from the functional properties of a service, these non-functional QoS characteristics are of uttermost importance in the realization of business processes.

Based on these observations, we aim to answer the following research question: *What is the impact of the use of anonymity systems on the QoS of IT service consumption?*

Measurement Approach

In order to empirically examine the aforementioned research question, we have conducted a set of large-scale measurements. The princi-

ple aim was to quantify the impact of anonymity systems on the QoS of service consumption. In our experiments, we focused on the common and business-crucial parameters of response time, throughput, and availability.

To conduct our experiments, we implemented a reference service based on the popular Web services standards. This service was deployed on 12 globally distributed nodes, which represent a realistic set of worldwide service providers, based on studies on Web service provider distribution.

Over the course of four weeks, we conducted approximately two million invocations of the reference service. For the invocations, we used well-proven, state-of-the-art anonymity systems, i.e., JonDo and Tor. The first is a commercial system, where certified providers charge for data transfer, whereas the latter is operated by volun-

tary participants around the globe. Furthermore, we used the common direct, non-anonymized mode of access for reference purposes.

Our approach resembles the actual service consumption through a service user. Because the measurements were conducted using real networks, the results can be immediately transferred to practice.

Empirical Findings
The detailed results of our measurements are depicted in Figures 2, 3, and 4. In accordance with expectations, the application of anonymity systems for the secure usage of external services does have an effect on all regarded QoS parameters, i.e., response time, availability, and throughput.

To begin with, the effect is most notable with respect to the *response time* of external services
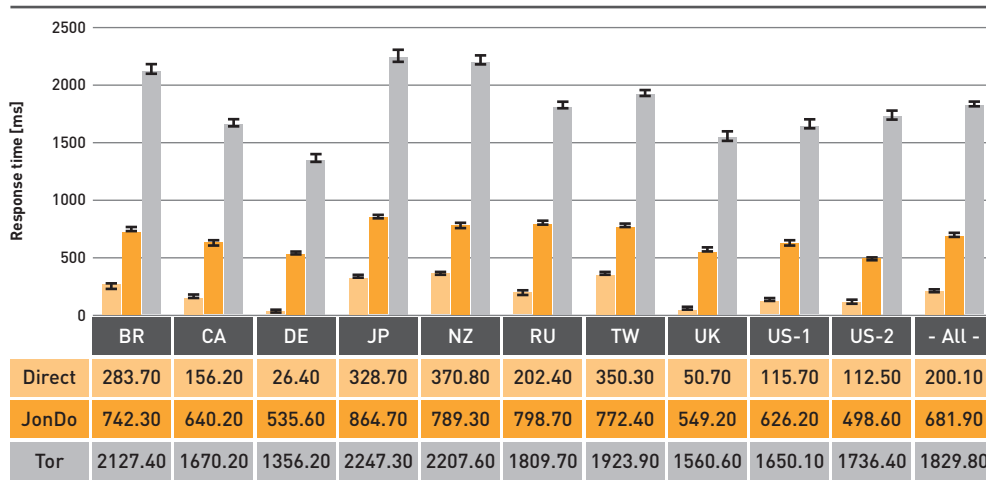
(Figure 2). On average across all globally distributed providers, the response time using a non-anonymized, direct access corresponds to about 200 ms. Depending on the geographical location of the servers, the observed individual values

range between about 25 ms (provider in Germany) and 370 ms (New Zealand). Please note that "US-1" and "US-2" denote two individual services in different parts of the United States, which explains the difference in response time.
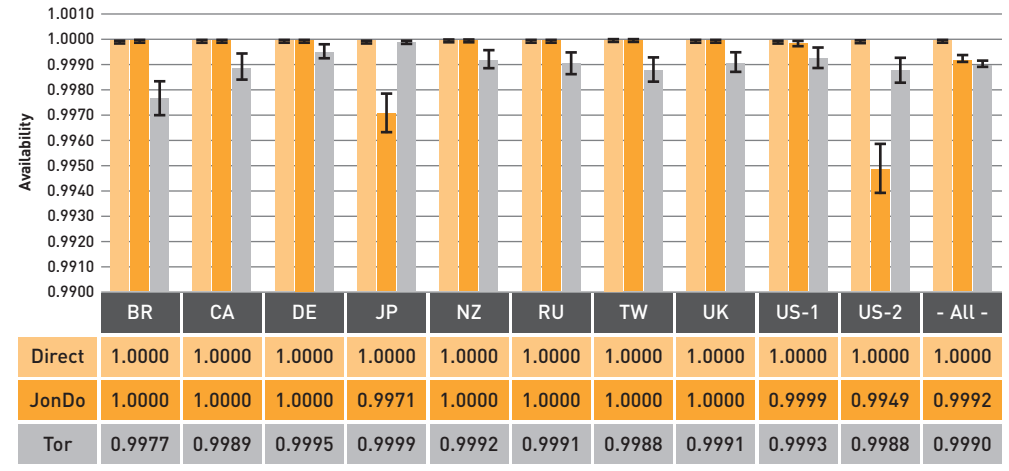

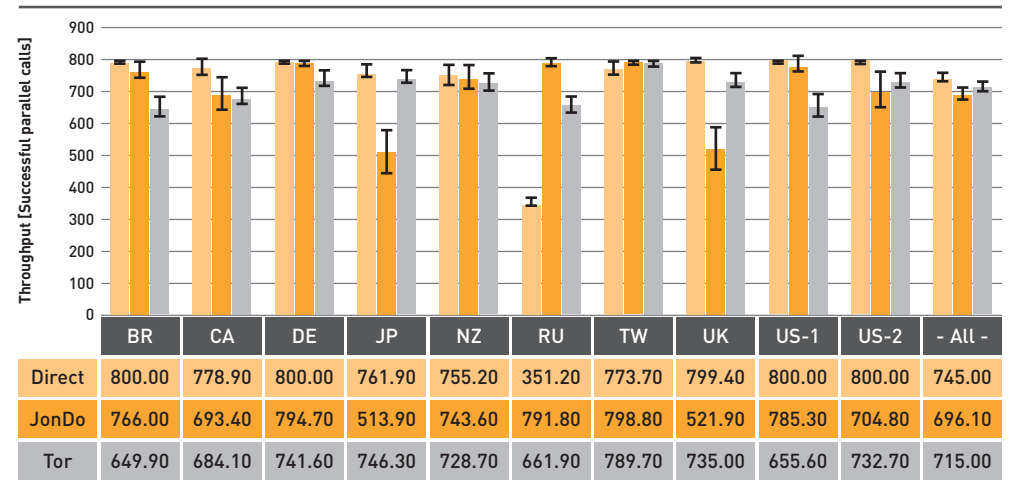Figure 3: Measurement results for the QoS parameter availability

	BR	CA	DE	JP	NZ	RU	TW	UK	US-1	US-2	- All -
Direct	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
JonDo	1.0000	1.0000	1.0000	0.9971	1.0000	1.0000	1.0000	1.0000	0.9999	0.9949	0.9992
Tor	0.9977	0.9989	0.9995	0.9999	0.9992	0.9991	0.9988	0.9991	0.9993	0.9988	0.9990

Figure 2: Measurement results for the QoS parameter response time

	BR	CA	DE	JP	NZ	RU	TW	UK	US-1	US-2	- All -
Direct	283.70	156.20	26.40	328.70	370.80	202.40	350.30	50.70	115.70	112.50	200.10
JonDo	742.30	640.20	535.60	864.70	789.30	798.70	772.40	549.20	626.20	498.60	681.90
Tor	2127.40	1670.20	1356.20	2247.30	2207.60	1809.70	1923.90	1560.60	1650.10	1736.40	1829.80

Figure 4: Measurement results for the QoS parameter throughput

	BR	CA	DE	JP	NZ	RU	TW	UK	US-1	US-2	- All -
Direct	800.00	778.90	800.00	761.90	755.20	351.20	773.70	799.40	800.00	800.00	745.00
JonDo	766.00	693.40	794.70	513.90	743.60	791.80	798.80	521.90	785.30	704.80	696.10
Tor	649.90	684.10	741.60	746.30	728.70	661.90	789.70	735.00	655.60	732.70	715.00

Using the commercial JonDo anonymity system, the average value increases to about 680 ms across all providers. Individual observations range between approximately 500 ms and 865 ms. This corresponds to a relative increase in response time of up to 2,000%. Thus, the effect, i.e., increase in response time compared to a direct access, is statistically significant.

The same is true for the Tor anonymity system, where the average response time reaches an average value of about 1,830 ms. In accordance, even for the geographically close providers in Western Europe (Germany, UK), the service response times exceed 1,000 ms. Thus, the relative increases are as high as 5,000%.

With respect to the QoS parameter of *availability*, the effects of anonymity systems appear negligible in absolute terms upon first sight (Figure 3). However, it should be recalled that most financial institutions have undertaken substantial and costly efforts in the past decades to achieve availabilities in their IT systems in the class of "five nines" (i.e., 99.999%) or more.

When using a direct mode of access, we did – in fact – observe a perfect availability of 100% across all servers, even in geographically remote locations. Once JonDo is applied however, we find a statistically significant reduction in service availability to about 99.92% on average, resulting in a mean availability in the class of merely "three nines". For Tor, the effect is even more pronounced and also consistently

observable across all servers, resulting in a mean availability of about 99.9%, which would translate into about nine hours of service unavailability per year in practice.

Concerning the last QoS parameter in our experiments, *throughput*, we observed two oppositional effects: On the one hand, the throughput decreases compared to a direct access, because the anonymity nodes act as additional bottleneck between the service provider and the consumer. This effect is especially pronounced for the Tor network, where the nodes are operated by voluntary participants and may be subject to rather low bandwidth supply.

On the other hand, we also found an *increase* in throughput for a set of servers. The most likely explanation for this observation is that the anonymity networks artificially queue Web service requests. Thus, the series of parallel requests that we employed in our experiments become less "bursty" and can be more efficiently processed by those servers that possess less computing power.

Nevertheless, the overall effect of the two anonymity systems on the QoS parameter of throughput is significantly negative.

Thus, concerning our previously stated research question, we conclude that the use of anonymity systems does have a significant and negative impact on the QoS parameters of response time, availability, and throughput in the context of service consumption.

Practical Implications

As it has been suggested in the previous section, our findings have a number of practical implications.

First, the use of external services via public networks has to be generally reassessed. Cost savings and higher flexibility should be weighed against the disclosure of potentially sensitive business information to third parties. The latter aspect is of special importance in the financial institutions, which underlie rigid regulation with respect to data privacy.

Second, the application of anonymity systems as a potential countermeasure has to be thoroughly considered. While these mechanisms facilitate the security objective of relationship anonymity, they may also bring about substantial degradation in the QoS of business process execution. Depending on the requirements of the specific business case (e.g., time criticality of transactions), these effects may be problematic.

Third, the actual choice of an anonymity system can play an important role; our findings indicate that commercial systems have advantages with respect to QoS (specifically in respect to the parameter of response time), but they also impose additional cost for the service consumption.

Summary

Despite the use of standard security mechanisms such as encryption, the security objective of relationship anonymity may be threatened when external IT services are used over public networks, which allows attackers to infer poten-

tially sensitive business information. With the spread of cloud computing, this issue gains further practical relevance, because an increasing number of services is offered via the Internet. State-of-the-art anonymity systems such as Tor or JonDo provide a suitable countermeasure, but do have a significant and negative impact on the QoS of service executions, resulting in, e.g., prolonged service response times and thus, higher latency in the execution of business processes.

Under these circumstances, financial institutions should thoroughly consider both the use of external services in general as well as the application of anonymity mechanisms, depending on the requirements of the specific business case and process. For this purpose, our research and empirical findings can provide a valuable decision support.

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Insideview

Cloud Impact on End User Computing

INTERVIEW WITH THOMAS WEBER, T-SYSTEMS INTERNATIONAL GMBH

Thomas Weber
Director of Global Architecture
T-Systems International GmbH

Dr. Ibrahim Karasu, Managing Director at the Bundesverband deutscher Banken wrote in November 2010:
„The constant pressure on cost will leave the banking industry no other choice than putting focus on cloud computing." Meanwhile, cloud computing is mainstream in the financial industry as well. So, the question becomes obvious: What is the impact of the cloud on end user computing?

Application intelligence is migrating to the cloud, and the developers of front-end applications are focusing their efforts on the design of the user interface to provide a better experience for the user. "Bring your own device" (BYOD) and the associated challenges for a corporate IT department are just one aspect of this trend. The focus of IT is more and more shifting from the devices to the users – this is also referred to as a user-centric approach.

Is Bring Your Own (BYO) the answer in a security sensitive environment?

A lot has been written on BYO, the truth is that an unmanaged invasion of private technology at work, greatly jeopardizes the security of corporate data and IT systems. Technical solutions such as network access control, network segmentation, desktop virtualization, client hypervisors and encryption need to go hand in hand with the legal, logistical and financial aspects of a BYO program. If done correctly, it can generate savings in excess of 20%, compared to a well-managed PC – there are proof points at enterprise grade organizations in the financial industry.

Is this user centric approach all about cost?

As early as 2004, Gartner claimed that the introduction of the BlackBerry did

increase employee productivity by around 20%. This holds even more true for today's devices, because employees realize that these devices ease their burdens of increased work density. The acceptance of this behavior – which is also referred to as user emancipation – is a prerequisite in order to transform IT in the financial sector. Thus, it is more about an increase in productivity than pure cost savings.

Did the post-PC era already begin?

According to a study by VMware, the percentage of enterprise applications written for the Windows platform will be around 50% in 2012, continuing to decline and reaching around 30% by 2017. That said, legacy applications will remain with us for a very long time. Cloud services, and especially those combined with desktop and applications virtualization, can bridge the gap between the old and the new world.

What would be your recommendations for the financial industry to get the most out this user centric approach?

Accept the emancipated user as a partner who is able to choose among alternatives (e.g., Apple vs. PCs and Android vs. iPhones and BlackBerry).

Accept the fact that people, depending on their skill level, try hard to resolve their technical problems; just to be productive again. This gives them the feeling they are the master of their own destiny and they will pay back with higher productivity.

IT should offer integration and federation services, such that the various clouds can show their full potential.

Thank you for this interesting conversation.

Infopool

News

Awards and Dissertations

Prof. Dr. Christian Schlereth (layer 3) is the winner of "The 2011 Emerald/EFMD Outstanding Doctoral Research Award" for his dissertation "Optimal Pricing of Internet based Services" in the category Marketing research. A cash prize of €1,500 was awarded to Prof. Schlereth.

Thomas Etheber, Dominik Hennen, Steffen Meyer and Tilman Rochow (all from layer 3) received the 3rd Best Paper Award at the Campus for Finance Research Conference 2012 for their paper on "Earnings Announcements, Miller's Stocks and Private Investors – Trading Patterns and Performance".

Dipl.-Kfm. Christoph Seebach (layer 1) received a best paper award at the 45th Hawaii International Conference on System Sciences (HICSS) for his contribution "Searching for Answers – Knowledge Exchange through Social Media in Organizations".

Maximilian Köstner, Dominik Hennen and Thorsten Brockmeier (all from layer 3) have received their doctoral degree in late 2011 and early 2012, respectively. In addition, Michael Prifling (layer 1) has received his doctoral degree on January 26th, 2012"

Congratulations to all E-Finance Lab researchers to their awards and dissertations!

New Colleagues

Linda Urban joined the team of Prof. Dr. Andreas Hackethal (layer 3) in March as an external doctoral candidate. Linda finished her studies at EBS Business School before working in the banking sector.

Call for Participation – FinanceCom 2012: Enterprise Applications, Markets and Services in the Finance Industry

Advancements in Information and Communication Technologies have paved the way to new business models, markets, networks, services, and players in the financial services industry. The workshop (co-organized by Prof. Dr. Peter Gomber, layer 2) spans multiple disciplines, including technical, services, economic, sociological and behavioral sciences. FinanceCom 2012 will be co-located with ECIS 2012 in Barcelona on June 10th, 2012. Further details about FinanceCom 2012 can be found on *www.financecom.org*.

Selected E-Finance Lab publications

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In: Journal of Retailing, 88 (2012) 1, pp. 131-144.

For a comprehensive list of all E-Finance Lab publications see
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Infopool

RESEARCH PAPER: UNDERSTANDING THE LINK BETWEEN INFORMATION TECHNOLOGY CAPABILITY AND ORGANIZATIONAL AGILITY: AN EMPIRICAL EXAMINATION

Due to volatile business environments, as for example during the financial crisis, executives have to be aware of IT investments as they are proposed to affect firm's agility. In this regard, Lu and Ramamurthy empirically investigate the relationship between IT capability and organizational agility with IT spending as mediator. In particular, the authors consider three dimensions of IT capabilities (i.e., IT infrastructure capability, IT management capability, and IT innovation capability) and differentiate organizational agility in market capitalizing agility and operational adjustment agility. The analysis from a matched-pair field survey of IT and business executives in 128 firms clearly confirms a positive relationship between IT capabilities and the two types of organizational agility. They show that spending more on IT in a way to enhance and foster IT capabilities lead to greater organizational agility. Indeed, higher IT spending, by itself, does not increase agility.

Lu, Y.; Ramamurthy, K.
In: MIS Quarterly, 35 (2011) 4, pp. 931-954.

RESEARCH PAPER: A MULTI-LEVEL SECURITY MODEL FOR PARTITIONING WORKFLOWS OVER FEDERATED CLOUDS

Cloud computing has already aroused public and private interest due to its potential to provide custom-tailored computing on-demand. The experience shows that a combination of an organizational private cloud with some public clouds, a so called federated cloud model, could be of particular interest and bring more benefit and independency for an organization. However, this federated cloud model provokes further security issues, especially in the Legal, Audit, and Monitoring environment, while operating national and international clouds. The author analyzes a well-known Bell-LaPadula security model, used in government and military environment, and extends it by cloud-specific requirements to a Multi-Level Security Model for federated clouds. In the evaluation of his model, the author combines the determination of a required security level with a cost model to show the cheapest and the most secure deployment.

Watson, P.
In: Proceedings of the 3rd International Conference on Cloud Computing Technology and Science, Athens, Greece, 2011.

Electronic newsletter

The E-Finance Lab conducts two kinds of newsletters which both appear quarterly so that each six weeks the audience is supplied by new research results and information about research in progress. The focus of the printed newsletter is the description of two research results on a managerial level – complemented by an editorial, an interview, and some short news. For subscription, please send an e-mail to eflquarterly@efinancelab.com or mail your business card with the note "please printed newsletter" to

Prof. Dr. Peter Gomber
Vice Chairman of the E-Finance Lab
Goethe University
Grüneburgplatz 1
60323 Frankfurt

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For further information please contact:

Prof. Dr. Peter Gomber
Vice Chairman of the
E-Finance Lab
Goethe University
Grüneburgplatz 1
D-60323 Frankfurt am Main

Phone +49 (0)69 / 798 - 346 82
Fax +49 (0)69 / 798 - 350 07
E-Mail gomber@wiwi.uni-frankfurt.de

Press contact
Phone +49 (0)69 / 798 - 338 74
Fax +49 (0)69 / 798 - 339 10
E-Mail presse@efinancelab.com

or visit our website
http://www.efinancelab.com