TRUST MANAGEMENT SYMPOSIUM

Industry meets Academia
22-23 of March 2012

IFIPTM

HPI Hasso Plattner Institut

IT Systems Engineering | Universität Potsdam

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Hasso Plattner Institute for IT-Systems Engineering

The Hasso Plattner Institute for IT-Systems Engineering (HPI) at the University of Potsdam is unique in Germany for two key reasons: It was the first university institute in Germany financed entirely by private funds, and second, it is a prime example of a successful public-private partnership. The Hasso Plattner Institute offers the Bachelor's and Master's degree in "IT Systems Engineering" that emphasizes the ability to design, develop, and control large, complex, and distributed IT systems. A particular specialty of the HPI is the strong engineering orientation that intensively incorporates industrial projects in its curriculum.

10 Research Groups shape the profile of the HPI in IT systems engineering. At the HPI, 266 undergraduate and 198 graduate students are currently enrolled and 160 research assistants and Ph.D. students are researching in their respective field. Since October 2005, the HPI runs the Research School on "Service-Oriented Systems Engineering", an international Ph.D. school with 43 students in three different countries: Potsdam in Germany, Cape Town in South Africa, and Haifa in Israel.

The Hasso Plattner Institute tightly cooperates with scientific partners, both nationally and internationally. Among the partners – apart from renowned European universities – are the Stanford University, the Massachusetts Institute of Technology (MIT) in the US, as well as Technical University of Beijing in China. Furthermore, the HPI cooperates with renowned major IT companies, such as EMC, Fujitsu, HP, IBM, Microsoft, SAP, Siemens, T-Mobile, and others.

Agenda

Thursday, March 22, 2012 - Symposium Day 1

09:30	**Opening remarks** Prof. Dr. Christoph Meinel, HPI, Director
10:00-10:45	**Keynote 1 (Industry)** Randy Farmer, SuddenlySocial, US / Bryce Glass, Manta Media, US "Web Social Media & Reputation Systems: The Practitioner's View"
10:45-11:00	Coffee Break
11:00-12:30	**Session 1** Piero Bonatti, University of Napoli, Italy "Don't ask too much: Rewarding privacy on the web" Tyrone Grandison, IBM, US "Realizing the Potential of Trust Management" Michele Bezzi, SAP Security and Research, France "Ensuring trust in service consumption through security certification"
12:30-13:45	Lunch
13:45-15:15	**Session 2** Juha Sääskilahti, Ericsson, Finland "Trust Challenges with 50B connected devices" Stephan Naicken, University of Sussex, UK "Trusted Content-Based Publish/Subscribe" Jordi Sabater-Mir, ISTC-CNR, Italy "Going cognitive: a cognitive approach to computational trust and reputation"
15:15-15:30	Coffee Break
15:30-17:30	**Session 3** Rehab Alnemr, Hasso Plattner Institute, Germany "Enabling Reputation Interoperability through Semantic Technologies" Tortsen Eymann, University of Bayreuth, Germany "On the Effects of Reputation in the Internet of Services"

Bouchra Bouqata, GE Global Research, US
"Trust and Reputation Mechanisms for Social Networks and Crowd Sourcing Platforms: Challenges and Key Aspects"

Paolo Massa, FBK Center, Italy
"The Filter Bubble in Recommender Systems: balancing between echo chambers and tyranny of the majority"

18:00	Dinner

Friday, March 23, 2012 - Symposium Day 2

09:00-09:45	**Keynote 2 (Academia)** Audun Jøsang, University of Oslo, Norway "Robustness of Trust and Reputation Systems, Does it Matter?"
09:45-10:00	Coffee Break
10:00-11:30	**Session 4** David Chadwick, University of Kent, UK "Privacy Preserving Attribute Aggregation" Ivonne Thomas, Hasso Plattner Institute, Germany "Identity Assurance in Open Identity Management Models" Jochen Haller, SAP, Germany "Identity and trust management pitfalls in enterprise cloud environments"
11:30-12:00	Coffee Break and Hors D'oeuvres
12:00-13:30	**Session 5** Sini Ruohomaa, University of Helsinki, Finland "Reputation-based Trust Management for Inter-Enterprise Collaborations" Florian Marienfeld, Fraunhofer FOKUS Institute, Germany "How user ratings could affect trust in open data resources" Bryce Glass, Manta Media, US / Randy Farmer, SuddenlySocial, US Workshop: „Designing a Web Reputation System: The Basics"
13:30	**Closing Remarks**

Opening Remarks

Prof. Dr. Christoph Meinel

Hasso Plattner Institute, Germany

Bio

Christoph Meinel is the CEO and President of the Hasso Plattner Institute for IT-Systems Engineering (HPI) and full professor for computer science holding a chair on "Internet Technologies and Systems" at the University of Potsdam since 2004. He is also a professor both at the School of Computer Science of the Technical University of Beijing (China) and at the Luxembourg Institute of Advanced Studies in Information Technology. His research focuses on future internet technologies, information security, semantic and service web, trust management, innovative internet application especially in the domains of e-learning and telemedicine. He contributed in 7 textbooks and monographs, and more than 300 scientific papers. He also teaches at the HPI School of Design Thinking. Since 2008, he is the program director of the HPI-Stanford Design Thinking Research Program together with Prof. Larry Leifer from Stanford University. He is also chief editor of the scientific electronic journal "Electronic Colloquium on Computational Complexity" and of the "IT-Gipfelblog"
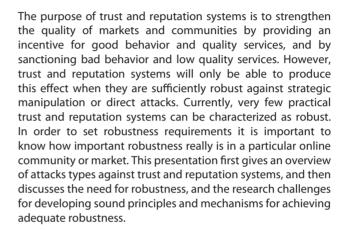
Web Social Media & Reputation Systems: The Practitioner's View

Randy Farmer

Suddenly Social, United States

Reputation systems have proven their value on the Web: they can impart trust to anonymous transactions; they can build strong familial ties within a community; they can help elevate fantastic content and promote it over a sea of junk. But reputation systems are not infallible, and suffer from a number of weaknesses, or problems, with no easy resolution. Increasingly, an industry that wants to employ reputation systems to further its goals of user engagement, increased contributions, and improved user experiences finds itself wrestling with some of these fundamental shortcomings. What are these systemic problems? Ones like: trust in the issuing authority; the self-reinforcing nature of community approval; or the natural conflict between good user experience and careful reputation system design. Before declaring the widespread success of reputation systems, it may be necessary to list some of the challenges that remain in implementing them wholesale. A multi-disciplinary approach, relying heavily on all branches of academia - technology, the social sciences, economics and more - may provide the way out of some of these traps.

Bio
F. Randall "Randy" Farmer is co-author of Building Web Reputation Systems, O'Reilly Media 2010. He has been creating online community systems for over 30 years, and co-invented many of the basic structures for both virtual worlds and social software. His accomplishments include numerous industry firsts (such as the first virtual world, the first avatars, and the first online marketplace). An inventor on dozens of patents, he has also written extensively on virtual goods, online communities, identity, and reputation systems. Randy worked as a director and community strategic analyst for Yahoo!, advising groups on construction of their online communities. Randy was the principal designer of Yahoo's global reputation platform and the reputation models that were deployed on it. He is currently CEO of Suddenly Social, a multiuser mobile-gaming platform startup based in Los Altos, California and acts an advisor to various other social media startups.

Robustness of Trust and Reputation Systems, Does it Matter?

Prof. Dr. Audun Jøsang

University of Oslo, Norway

The purpose of trust and reputation systems is to strengthen the quality of markets and communities by providing an incentive for good behavior and quality services, and by sanctioning bad behavior and low quality services. However, trust and reputation systems will only be able to produce this effect when they are sufficiently robust against strategic manipulation or direct attacks. Currently, very few practical trust and reputation systems can be characterized as robust. In order to set robustness requirements it is important to know how important robustness really is in a particular online community or market. This presentation first gives an overview of attacks types against trust and reputation systems, and then discusses the need for robustness, and the research challenges for developing sound principles and mechanisms for achieving adequate robustness.

Bio
Dr. Audun Jøsang is a professor at the University of Oslo, and adjunct professor at QUT (Queensland University of Technology) in Australia. Prof. Jøsang considered as one of the leading international experts in the rapidly growing area of trust and reputation systems. Subjective logic and multinomial Bayesian reputation systems developed by Prof. Jøsang are being applied in trust management by practical implementations and academic research worldwide. Prof. Jøsang is also an expert in information security.

Don't ask too much: Rewarding privacy on the web

Prof. Dr. Piero Bonatti

University of Napoli, Italy

A large body of literature has been devoted to the development of expressive policy languages and efficient enforcement mechanisms, but there are intrinsic limits to what can be achieved with the normative approach to security, privacy and trust implied by these works. A first observation is that writing good policies is harder than it may seem, even if the language and the model are extremely streamlined. Errors of various kinds are frequent and decrease the effectiveness of policies, no matter how reliable the enforcement mechanism is. A second observation is that the adoption of a policy is not subject to any constraint, and at the same time rich user profiles have a significant economic value. Then a natural question is: what would happen if all the servers suddenly adopted a policy that requires their users to release a large body of personal and sensitive information? Can we really write a policy or a law stating which information can be reasonably (or legally) collected for each kind of transaction? This talk tackles this kind of issues by advocating a system of (dis) incentives (e.g. resulting from market design techniques) aimed at reducing the amount of sensitive information disclosed on the internet. We will argue that although these kind of techniques are apparently „softer" than a strict normative approach, they may turn out to be more effective in the long run.

Bio
Piero A. Bonatti is full professor of computer science at the University of Napoli Federico II, where he chairs the Computer Science curricula. He coordinated the working group on policies of the NoE REWERSE (FP6), focussed on trust management and usability issues. He authored over 100 papers on security, privacy, trust, knowledge representation and automated reasoning. In the past he contributed to: the NESSI technological platform, the W3C RIF (Rule Interchange Format) standardization activity, and the W3C Policy Languages Interest Group (PLING). He has participated to several EC projects including the IP FASTER, the WG WASP and the NoE REWERSE; he is currently a management committee member of the COST Action Agreement Technologies. He is also the coordinator of the Italian national project LoDeN, focussed on extensions of OWL2 profiles.

Realizing the Potential of Trust Management

Dr. Tyrone Grandison

IBM, United States

Over the last two decades, trust management has been a promising field in computer science, rich in problems, research, frameworks and perspectives. Given the number of solutions that have been developed and the effort that has been placed in the field, there appears to be a chasm between nice work and used product. This talk will provide my thoughts on the steps needed to cross the trust management chasm.

Bio
Dr. Grandison is a Research Staff Member at the Thomas J. Watson Research Center. He received a B.S. degree in Computer Studies (Computer Science and Economics) from the University of the West Indies in 1997, a M.S. degree in Software Engineering in 1998 and a Ph.D. degree in Computer Science from the Imperial College of Science, Technology & Medicine in London. He then joined IBM at the Almaden Research Center in California, where he worked on data privacy and security. In 2010, he joined the Global Healthcare Transformation team as Program Manager for Core Healthcare Services. Dr. Grandison is an IBM Master Inventor, a Distinguished Engineer of the Association of Computing Machinery (ACM), a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), a Fellow of the British Computer Society (BCS), has been recognized by the National Society of Black Engineers (as Pioneer of the Year in 2009), the Black Engineer of the Year Award Board (as Modern Day Technology Leader in 2009, and Minority in Science Trailblazer in 2010, Science Spectrum Trailblazer in 2012) and has received the IEEE Technical Achievement Award in 2010 for „pioneering contributions to Secure and Private Data Management". He has authored over 70 technical papers and co-invented over 20 patents.

Session 1

Ensuring trust in service consumption through security certification

Dr. Michele Bezzi

SAP Security & Research, France

The service-based paradigm is enabling new models of software provisioning based on cloud architectures. An increasing number of organizations are either providing their software as a service or acting as enablers by providing platforms on which service providers can offer their services. However the security of service implementations and of the underlying cloud architectures are often opaque to the service consumers. Accordingly, users are often reluctant to fully exploit this model, especially in the case of previously unknown providers. To close this gap, the concept of machine-readable security certificates (called asserts) has been recently introduced, which paves the way to automated processing about security properties of services. Similarly to current security certification schemes, the assessment of the security properties of a service is delegated to an independent third party (certification authority), who issues a corresponding assert, bound to the service. In this talk, we present this new approach, outlining the trust model behind, and presenting an architecture that supports the discovery of single services based on certified security properties (in additional to the usual functional properties.

Bio
Dr. Michele Bezzi is Research Manager at SAP Research Center Sophia Antipolis in the Trust and security Research Area. He has been responsible for SAP research in privacy and trust within the FP7 European projects Primelife and TAS3, and he is currently the project coordinator of EU project Assert4SOA on security certification and principal investigator in Effects+ coordination action. He received his Master Degree in Physics from the University of Florence in 1994 and his Ph.D. in Physics from the University of Bologna in 1998. He has 10+ years experience in industrial research. He has published in various research areas: neural networks, evolutionary models, complex systems, pervasive computing, security and privacy.

Session 2

Trust Challenges with 50B connected devices

Juha Sääskilahti

Ericsson, Finland

In the future a massive number of devices will be connected over the Internet: Electric- and water gauges, industrial control systems, meteorological systems, remote health sensors, traffic sensors, automobile and logistics sensors, recreational sensors, and the list goes on. There are many imaginable - and unimaginable - threat scenarios associated with the 50 Billion Connected Devices that will affect the trust levels - and different use scenarios will require different levels of trust. This presentation will discuss threat scenarios and the associated challenges with trust.

Bio
Juha Sääskilahti is a Master of Science in Engineering from Helsinki University of Technology, Certified Information Systems Security Professional (CISSP) and is along the work a PhD Student at University of Oulu. Juha has worked at Ericsson since 1998, and since 2001 in the field of Security. During his working career he has worked with different aspects of security in different roles. He has worked in systems and product management for security, line manager for a security team and lately as a security consultant for product development and telecom operators. Juha is also a participant in Tivit Cloud Software Research program (http://www.cloudsoftwareprogram.org/).

Dr. Stephan Naicken

University of Sussex,
United Kingdom

Session 2
Trusted Content-Based Publish/Subscribe

Content-based publish/subscribe systems typically assume that publishers, subscribers and brokers implicitly trust each other and correctly implement both the matching and routing functions, however these assumptions are unsuitable for some applications, such as publish/subscribe Internet routing. To address this, we propose a mechanism to configure and reconfigure the publish/subscribe event dissemination tree (PST) to maximise its trustworthiness within some communication overhead budget - the PST trust maximisation with overhead budget problem. The talk will focus on the trust metric for PSTs, which borrows heavily from social welfare theory in order to derive a trust value for a PST given the individual trust preferences of the PST's publisher and subscribers; the Tabu search based algorithm used to solve the PST trust maximisation with overhead budget problem and that is shown to provide good approximation solutions; as well as future work, such as the monitoring of publish/subscribe systems for malicious and selfish behaviour.

Bio
Dr. Stephen Naicken recently completed his PhD in the Foundations of Software Systems group at the University of Sussex and is currently seeking a post-doctoral research position. His primary research interest is publish/subscribe security, and more specifically the application of reputation-based trust management to publish/subscribe systems. His other interests include trust models and peer-to-peer simulators.

Session 2
Going cognitive: a cognitive approach to computational trust and reputation

Dr. Jordi Sabater-Mir

ISTC-CNR,
Italy

Traditionally, the approach to computational trust and reputation systems has been (and still is) from a „weak AI" perspective. That is, as far as the final calculation value is more or less correct I don't care how the calculation is performed. In the last few years, this approach has made possible a good number of models that work reasonably well, each one using different mathematical tools and more or less complex algorithms. However, trust and reputation are social mechanisms strongly tied to human nature and one of the scenarios where computational trust and reputation models intend to be used is that of a mixed population of human beings and artificial entities (artificial agents) that have to interact. Given that, a question arises: is the current approach the best one for this kind of scenarios? The talk will be an introduction to a different approach to computational trust and reputation models based on a cognitive view of the two topics. We will discuss why a cognitive approach is worth it to be considered showing the pros and the cons.

Bio
Jordi Sabater-Mir holds a BSc in Computer Science, a Masters degree in Artificial Intelligence and a doctorate in Artificial Intelligence. After finishing his PhD at the IIIA-CSIC he got a two years postdoctoral Marie Curie fellowship at the Institute of Cognitive Sciences and Technologies (ISTC-CNR) in Rome. Currently he is a tenured scientist at the IIIA-CSIC. His fields of interest have been always related to the MAS community, specifically in the area of computational trust and reputation systems and agent based simulation. Jordi Sabater-Mir has published more than 90 articles including articles in renowned international journals, relevant international conferences and book. In 2009, together with his PhD students obtained the Best Student Software Award in the AAMAS conference. Jordi Sabater-Mir has been co-organizer of the Workshop on Trust in Agent Societies the last 8 editions (from 2004 to 2011). He was also one of the starters of the ART testbed competition that took place as part of the AAMAS conference the years 2006, 2007 and 2008. He has participated as a teacher in the European Agent Systems Summer School (EASSS) the years 2007, 2009 and 2010 giving a tutorial on computational trust and reputation models.

Rehab Alnemr

Hasso Plattner Institute,
Germany

Enabling Reputation Interoperability through Semantic Technologies

In open environments, reputation management approaches provide means for collecting reputation data about entities, computing reputation values, and performing actions based on these values to determine trustworthiness and make automated decisions. Each reputation system has its own method to query, store, aggregate, infer, interpret, and represent reputation information without embedding context related information, hence locking reputation interactions within isolated silos. Therefore, the representation - not the calculation - of reputation should be unified between communities in order to facilitate knowledge exchange and reputation interoperability. This talk presents some user studies that analyze several aspects of reputation and presents a semantic generic model for the representation of reputation as a complex object called Reputation Object (RO). Advantages of using the model are discussed as well as some applications and how this ontology-based reputation representation model can be applied in cloud environment and in a rule-based open reputation system.

Bio
Rehab Alnemr has recently submitted her PhD thesis in the field of reputation management. Her PhD topic is focusing on the interoperability of reputation management systems and the use of semantic technologies, which resulted in several publications in journals, conferences, and book chapters. Since July 2007, she is a member of the associated research school in Hasso Plattner Institute and working in the Internet Technology chair. She did her bachelor and master thesis in faculty of Computers & Information, Cairo University in Egypt. Her master thesis topic was in the field of mobile networks security. Rehab was one of the pioneers who established the computer science department in the German University in Cairo. Google selected her in 2009 and 2010 as one of the finalists for the Anita Borg Scholarship award for best women in technology. She promotes international cooperation between scientists through organizing several events and presenting her research school in other universities and companies.

Prof. Dr. Torsten Eymann

University of Bayreuth,
Germany

On the Effects of Reputation in the Internet of Services

The Internet of Services is a term used to describe open global computing infrastructures in which an increasing number of services is made available to users through the Internet. Due to the openness, from the users point, the quality of the services offered can vary a lot and users have to concentrate on choosing the right ones. The choice of a good service thereby depends on the users' direct experience (Image), and their ability to acquire information (Reputation), which can be used to update their own evaluations. In this work, we present a set of simulation runs to explore the effect of reputation regarding services delivery in a service network where information is asymmetrically distributed.

Bio
Torsten Eymann is Full Professor for Information Systems Management at University of Bayreuth, Germany, since 2004. Actual research topics include Trust and Reputation in Cloud Computing, E-Science, and Applications of Ubiquitous Computing in Healthcare. He is author of 3 books and 100+ journal and conference papers, some of which received best paper awards. He was scientific coordinator of the FET-Open CATNETS project, 2004-2007, and participated in EU and national projects on self-organisation (SORMA) and reputation (eRep). For longer research stays he has visited Hitachi's System Development Labs in Japan, British Telecom Labs in the UK and the Universitat Politecnica de Catalunya in Barcelona.

Trust and Reputation Mechanisms for Social Networks and Crowd Sourcing Platforms: Challenges and Key Aspects

Smart Management of social networks and crowd sourcing platforms is based on attracting good individuals, motivating them to perform good work, empowering them to get to know and trust one another, and making them collaborate toward the end goals of the community. Therefore, smart management is achieved through the motivational power of reputation and trust. Building and maintaining good reputation can be a significant motivation for contributing to online communities. Therefore it is especially important to build a good trust/reputation mechanism. Trust/Reputation mechanisms complement security mechanisms in the sense that the latter one is responsible for authentication and authorization while the first one supports that the authorized parties exercise in a desirable fashion to the community. This talk will highlight some challenges and key concepts to building a trust/reputation mechanism.

Bio
Dr. Bouchra Bouqata is a lead scientist at GE Global Research Center in Niskayuna NY. Dr. Bouqata has been leading GE's efforts on general autonomous intelligent systems with emphasis on human-brain inspired general learning, perception from real environment sensory inputs, general problem solving, reasoning, memory and language. Her work focuses on developing intelligent distributed decision making systems at the individual and collective levels of mobile entity networks and crowd sourcing/social network platforms with high impact on GE businesses such as mobile asset management, healthcare and energy. Dr. Bouqata received her PhD in computer science majoring in artificial intelligence and machine learning from Rensselaer Polytechnic Institute in 2006 and a Masters degree in Artificial Intelligence in 1999 from Al-Akhawayn University, Ifrane, in Morocco. Her primary research interests are, crowd sourcing, social networks, AGI, and distributed intelligent systems. Dr. Bouqata is an active member of the GE's Women's Network and the NY Society of Women Engineers.

Dr. Bouchra Bouqata

GE Global Research,
United States

The Filter Bubble in Recommender Systems: balancing between echo chambers and tyranny of the majority

If recommender systems weight all perspectives similarly, they may devolve into simple majority rule. But if they give each user reputation scores that take only other similar users' opinions into account, they run the risk of becoming "echo chambers" in which like-minded people reinforce each others' views without being open to outside perspectives. In this talk, I'll show experiments about controversial users and items on real systems and discuss design choices that may help balance these two extremes.

Bio
Paolo Massa is a researcher at IRST (Institute for Scientific and Technological Research) at Bruno Kessler Foundation (FBK) in Trento, Italy. He received his PhD from ICT International Graduate School of University of Trento in March 2006, defending a thesis titled "Trust-aware Decentralized Recommender Systems". Paolo's research interests include Wikipedia, trust and reputation, recommender systems and social networking. A list of his publications is available at his blog http://gnuband.org

Dr. Paolo Massa

FBK Center,
Italy

Privacy Preserving Attribute Aggregation

Prof. Dr. David Chadwick

University of Kent,
United Kingdom

Now that Shibboleth provides federated SSO, we need to pay more attention to the attributes that are released to provide user authorisation. Today, users have no idea which of their attributes is being given to the SP by their (single) IdP. This talk will describe the Attribute Authorisation Layer with its Trusted Attribute Aggregation Service (TAAS) that we propose should lie on top of the existing Shibboleth SSO layer. It exhibits the following security features: 1. The system is driven by the SP's policy, which is visible to the user; 2. The user chooses which of her attributes from which IdPs she wishes to release to the SP to satisfy its policy; 3. The user's privacy is protected since no persistent identifiers are sent to the SP with the attribute assertions; 4. Users are able to submit self-asserted attributes as well as IdP asserted attributes (when the SP's policy allows this); 5. SP's are provided with the level of assurance of each IdP signed attribute assertion they receive; 6. Phishing attacks are prevented since the user chooses which aggregation service she wants to use.

Bio
David Chadwick is Professor of Information Systems Security at the University of Kent. He has published widely, with over 140 publications in books, international journals, conferences and workshops. He has successfully managed over 25 research projects, and specialises in Public Key Infrastructures, Privilege Management Infrastructures, Trust Management, Identity Management, Privacy Management, Autonomic Authorisation, and Grid and Cloud security. Current research topics include: attribute aggregation, sticky policy based authorisation, cloud security APIs, and autonomic RBAC/ABAC. He actively participates in standardisation activities, is the UK BSI representative to X.509 standards meetings, the chair of the Open Grid Forum OGSA Authorisation Working Group, the joint editor of a new ITU-T standard on attribute aggregation (X.atag) and a member of OASIS and the Kantara Initiative. He is the author/editor of a number of Internet Drafts, two RFCs and six OGF specifications. He is currently a member of the expert group advising the UK Cabinet Office about its Identity Assurance Programme.

Identity Assurance in Open Identity Management Models

Ivonne Thomas

Hasso Plattner Institute,
Germany

The open and decentralized nature of Service-oriented Architectures demands for new security concepts that take these characteristics into account. In the field of identity management, open identity management models have been designed to allow the controlled sharing of identity information across multiple security domains. Designated identity services, so called identity providers are at the heart of these new models and issue identity assertions on behalf of users. A necessity to share identity information across security domains is the willingness of involved parties to trust on information that is received from a foreign domain. To raise this trust, relying parties require to know something about the origin and management of asserted identity statements. Using existing identity assurance frameworks, identity providers are rated by a single level of trust that is derived from pre-defined assessment criteria. The talk presents and compares current state-of-the-art identity assurance frameworks and shows its use in open identity management models. In addition, limitations of current frameworks are discussed as well as their implication on the adoption of open identity management models on the Internet.

Bio
Ivonne Thomas is a PhD student at the Hasso-Plattner-Institute and works in the chair „Internet Technologies and Systems" of Prof. Christoph Meinel since October 2007. In her work, she is addressing the area of identity and trust management with a particular focus on web services technologies. Ivonne started her PhD directly after her studies on software systems engineering. During her studies, Ivonne Thomas did internships with SAP Research in Brisbane, Australia as well as in the Security and Trust Group of SAP Research in Sophia Antipolis, France. Ivonne Thomas is one of the faces behind the latest SOA Security Kompendium published by the Bundesamt für IT Sicherheit (BSI) and since this year the head of the working group for Cloud Computing standardization in the scope of the Trusted Cloud technology program of the Bundesministerium für Wirtschaft und Technologie (BMWi).

Identity and Trust Management Pitfalls in Enterprise Cloud Environments

Dr. Jochen Haller

**SAP,
Germany**

Having worked on identity and trust/reputation management topics in research for several years, the author developed a sound expertise in those areas. This belief was put to the test when faced with task of applying this expertise in an enterprise cloud environment with highly automated processes, a large user base and strict Service level Agreements. Interestingly in some areas, innocent assumptions in research scenarios sometimes emerged as the biggest pitfalls to be solved in an enterprise scenario. The presentation will focus on experiences from a central identity management solution, as well as trust management, taken from several angles, in an enterprise cloud environment.

Bio
Jochen Haller studied Technical Mathematics with electrical engineering as a minor at the University of Karlsruhe. Having finished the studies, he started working on topics of mobile application security for SAP Research in Karlsruhe. Afterwards, his research focus shifted towards security for business processes, especially considering so-called „soft" security like trust and reputation management. Jochen Haller pursued a PhD thesis in parallel to his industrial research as an external PhD student at the Institute of Information Systems and Management at the University of Karlsruhe (KIT). His PhD topic aimed at integrating a stochastic trust management approach into a reputation system for Virtual Organisations. Having successfully finished his PhD studies with the STORE (STOchastic REputation) system, he started pursuing new challenges outside research. Jochen Haller joined SAP's Small and Medium Business software unit as its security officer. This new role involved coordination of security activities, as well as solving software problems as security software architect. Recently, the focus shifted more towards SAP's on-demand application offerings, where he is working as the OnDemand Security Officer.

Reputation-based Trust Management for Inter-Enterprise Collaborations

Sini Ruohomaa

**University of Helsinki,
Finland**

Inter-enterprise collaborations form between autonomous service providers from different organizations. In order to ensure a balance between the risks and incentives of collaborating, the services must determine for themselves which other services they are willing to rely on. Reputation information is used in estimating the risk of collaborating with a given partner. As good reputation affects business opportunities, the correctness of reputation information and high standards of shared reputation information become important. In this presentation, I give an overview on the impact of reputation-based trust management in an open service market, present some major issues to look out for in designing the systems, and discuss how to evaluate proposed solutions against different goals.

Bio
Sini Ruohomaa, MSc., is finalizing her PhD thesis on reputation-based trust management for inter-enterprise collaborations at the University of Helsinki Department of Computer Science. She has been working with trust management as a part of the Collaborative and Interoperable Computing (CINCO) group since 2004. Among her other publications, she has written several surveys on trust and reputation management together with different co-authors in a search for the „big picture" in applying trust management to the needs of business collaborations.

Session 5
How user ratings could affect trust in open data resources

Florian Marienfeld

Fraunhofer FOKUS
Institute,
Germany

The world wide Open Data movement promotes the a simple yet revolutionary idea: data are more useful on the whole if they are made public in a machine readable format under free licences. Especially the information gathered by public authorities has a high potential for re-use in novel apps, governmental transparency and a more efficient administration. Typically Open Data sets and their metadata are often copied, federated and aggregated from their respective original sources, which raises various trust issues. User ratings can be used to remedy some of these problems. However, as this talk shows, such a "crowdsourcing" approach presents new challenges. For some of these a common rating ontology would be useful if applied widely.

Bio
Florian Marienfeld studied Electrical Engineering and Computational Sciences at the Berlin Institute of Technology (Technische Universität) and received his Master's degree in 2010. He has been working for the Chair for Theoretical Computational Linguistics at the University Potsdam, for the Fraunhofer Institute for Open Communication Systems (FOKUS) and the Open Knowledge Foundation. The two main areas of his work are trust in networked environments and Open Data. In this context he authored a universal rating ontology and carried out the planning and realization of the Berlin Open Data Portal (http://daten.berlin.de). In this talk he shares common insights gained from these projects.

Session 5 (Workshop)
Designing a Web Reputation System: The Basics

Bryce Glass

Manta Media,
Unites States

Reputation can incentivize users to higher-and-higher levels of contribution, motivate them to stick around longer and form a deeper relationship with your product, but tread lightly: research and common usage have shown that specific reputation patterns lend themselves to some fairly specific contexts and, when used inappropriately, can harm your community dynamic. Ugly side effects like increased competitiveness, lowered quality of contributions and petty squabbles may result. Based on the presenters' experiences at Yahoo!, this talk outlines a practitioner's approach to designing a reputation system, in a thoughtful way that gives equal weight to business goals, community effects, and the user experience. (With some technical considerations as well.)

Bio
Bryce Glass is a principal interaction designer for Manta Media, Inc. Over the past 13 years, he's worked on social and community products for some of the web's best-known brands (Netscape, America Online and Yahoo!). Bryce was the User Experience lead for Yahoo's Reputation Platform and consulted with designers and product managers on a number of properties (Yahoo! Buzz, Yahoo! Answers and Message Boards, amongst others) that employed it. The research and best practices from those engagements formed the basis for Building Web Reputation Systems (O'Reilly, 2010.)

HPI Research School

In October 2005, the HPI started its Research School on "Service-Oriented Systems Engineering", a graduate school based on the model of the DFG (German Research Foundation) "Graduiertenkolleg".

The Vision of the Research School

Design and implementation of service-oriented architectures impose numerous research questions from the fields of software engineering, system analysis and modeling, adaptability, and application integration.

Service-Oriented Systems Engineering represents a symbiosis of best practices in object orientation, component-based development, distributed computing, and business process management. It provides integration of business and IT concerns.

Service-Oriented Systems Engineering denotes a current research topic in the field of IT systems engineering with high potential in academic research as well as in industrial application. Supported by an internationally renowned grant, PhD students at our college participate in joint activities such as lectures, seminars, winter schools and workshops.
The Members of the Research School

The Professors of the HPI with their research group are supporting pillars for our PhD school. With its interdisciplinary structure, the research college on Service-Oriented Systems Engineering interconnects the HPI research groups and fosters close and fruitful collaborations. In context of the research college, the different groups at HPI work on the following topics:

- Human Computer Interaction and Computer Vision as Service
- Service-Oriented Geovisualization Systems
- Tools and Methods for Software Engineering in Service-Oriented Systems
- Security Engineering of Service-Based IT Systems
- Service-Oriented Information Integration
- Evolutionary Transition of Enterprise Applications to Service-Orientation
- Operating System Abstractions for Service-Oriented Computing
- Services Specification, Composition, and Enactment
- Quantitative Evaluation and Optimization of Service-Oriented Systems

On the Website of the Research School, please find latest information about the Ph.D. students, their research interests, joint projects, and events:

http://www.hpi.uni-potsdam.de/research_school

HPI Professors

Prof. Dr. Batrick Baudisch
Human Computer Interaction

Prof. Dr. Holger Giese
System Engineering and Modeling

Prof. Dr. Christoph Meinel
Internet Technologies and Systems

Prof. Dr. h.c. Hasso Plattner
Enterprise Platform and Integration Concepts

Prof. Dr. Mathias Weske
Business Process Technology

Prof. Dr. Jürgen Döllner
Computer Graphics

Prof. Dr. Robert Hirschfeld
Software Architecture

Prof. Dr. Felix Naumann
Information Systems

Prof. Dr. Andreas Polze
Operating Systems and Middleware
Speaker of the Research School

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