The Liberty Alliance
GLOBAL ADOPTION
N E W S L E T T E R

Volume IV
Winter 2007

All About
TELECOMMUNICATIONS

CONTENTS

The TeleCompetition Group Studies Identity's Impact in the Telecommunications Market

In order to better assess market change and trends in the mobile market, Liberty contracted with The TeleCompetition Group to evaluate and write a report about the telecommunications sector. The TeleCompetition Group specializes in next-generation converging communications forecasting, providing insights to banks, telecom carriers, and industry vendors.

"We wanted a thorough, objective analysis of the telecommunications marketplace, and the impact of identity in it," explained Britta Glade, director of marketing, Liberty Alliance. "We had a member steering committee comprised of Ericsson, France Telecom/Orange, Intel, NeuStar, NTT, and Vodafone who worked with the researchers to define the project, provide input, and help analyze the results."

This study looks at the opportunity and challenges facing all public network operators and companies, whether they have fixed, wireless, or mixed infrastructure. The TeleCompetition researchers establish a road map going forward to the next stage of transformation, to a world where many different players are able to deliver compelling content and services, often without the burden of large investments in infrastructure. In this world they maintain, the operator becomes the pipe while others enjoy the openness and other benefits of IP-based technologies.

Specifically, the study analyzes identity management and its crucial role in enabling personalized services. The report concludes that identity management is a crucial element in a basket of technology enablers that will be instrumental in preventing network operators from experiencing a dreaded "bit pipe" fate. They look at wireless operators who are also at risk, right along with their fixed line counterparts.

The analysis focuses on a high-level global view through 2015. While certain operators may be able to "beat the odds" on a local basis, TeleCompetition reports that the overall picture is "not pretty" for those who do not proactively capitalize on the business opportunities proper use of identity data presents. They maintain that the ability to use appropriate identity data, deliver a personalized user experience, and protect user identity is necessary to maintain the enviable market position that network operators have enjoyed in the past. Indeed, a large percentage of network operator revenue is already at risk through the ubiquity of IP convergence and the emergence of powerful "Webcos" such as Google.
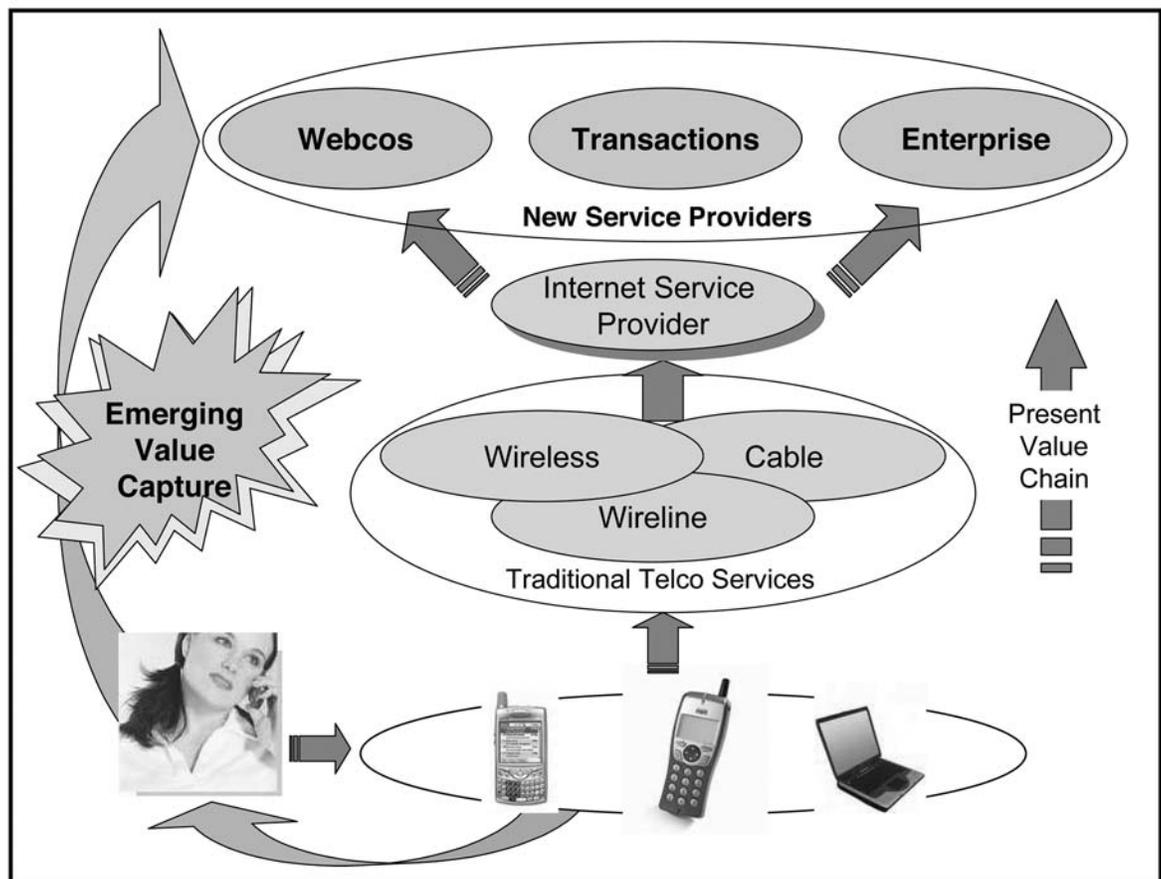
Industry Structure Changes

By 2015, they project that fully one half of the projected $2.5 trillion in service revenues is at risk. So what can a public network operator do to protect these revenues? Under a broad range of plausible futures described in this report, an early focus on identity management and the types of capabilities that the Liberty Alliance and other protocols enable can preserve anywhere from 8 to 25% of this at-risk revenue.
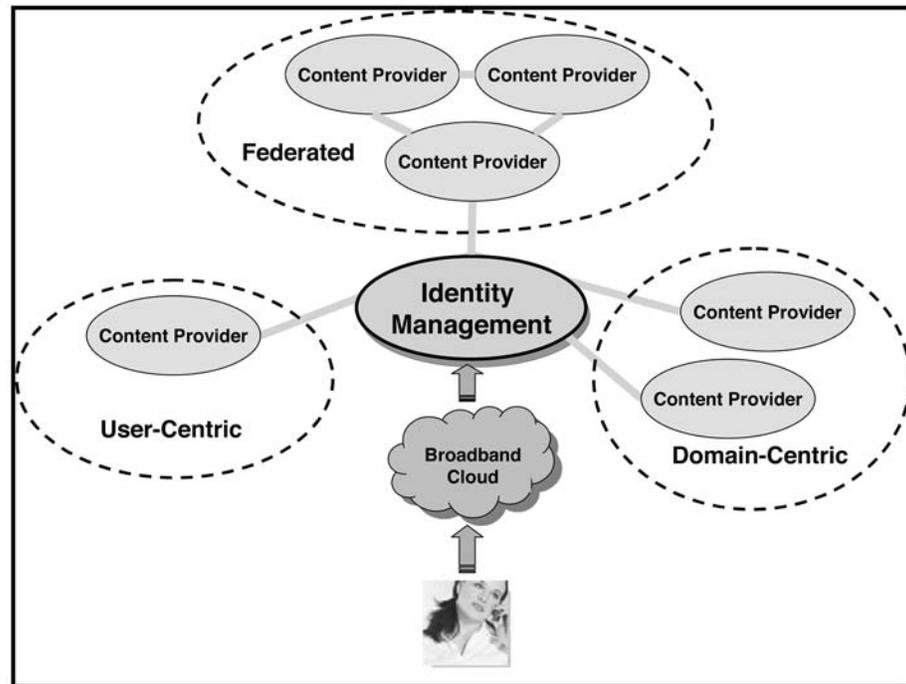

Identity Architectures

While the deployment of an identity management solution, or market positioning as an identity provider, is not the only factor that will preserve this revenue, it is a fundamental platform, indeed requirement, for any company intending to be more than a bit pipe in the future.

TeleCompetition believes all public network operators have a current advantage over Webcos and other new entrants as identity providers. This is due to the historic trust relationship with their users, which includes the protection of billing and customer data, and the relative absence of spam in voice telephone networks. While not part of the quantitative aspects of this study, hybrid network operators, those with

both fixed and mobile networks, are potentially further advantaged. This is due to their ability to leverage investments in identity management across both types of networks and customer bases.

The study also maintains that a brief window of opportunity exists where the higher quality, more stable, and trusted environment of telecom—especially mobile—can be successfully leveraged to retain customers. This initial defensive posture will lead over time to an opportunity to increase revenue through enhanced identity-dependent applications and services.

This report uses a scenario-planning methodology to explore the options and opportunities for identity management arising from the transitions currently being experienced by the communications and IT sectors. It addresses the issues by identifying and analyzing those drivers of change that most impact the deployment of identity management solutions, but whose outcome is uncertain.
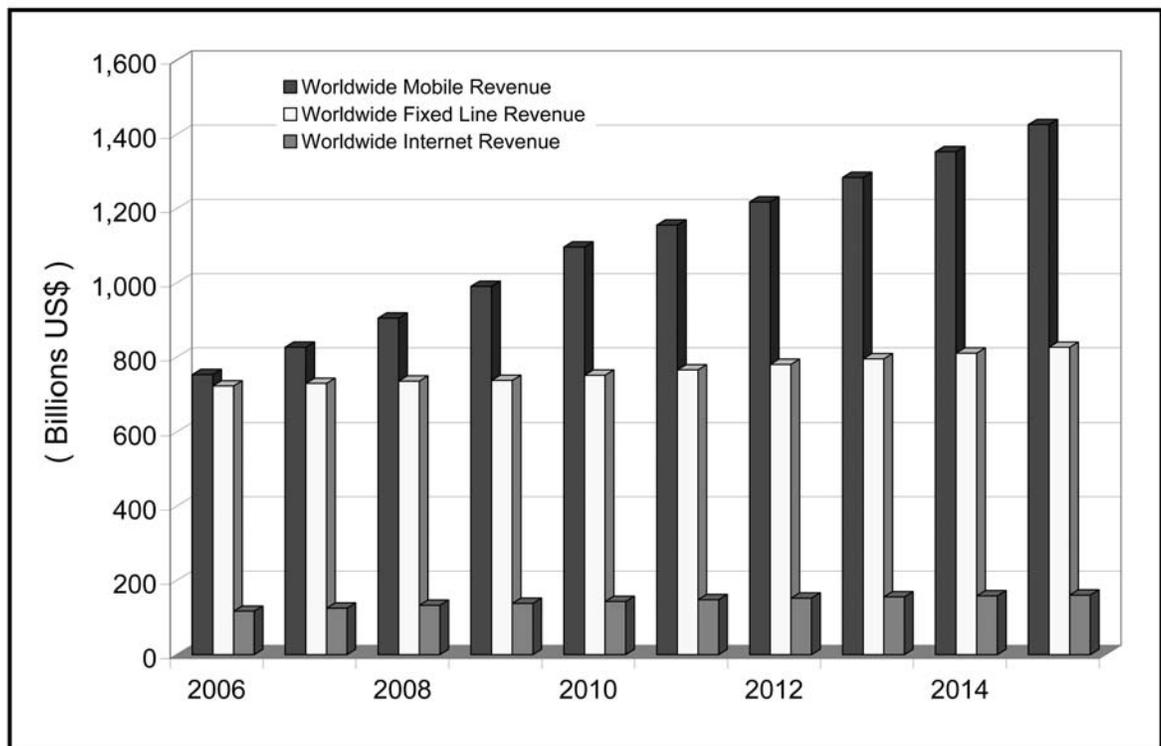
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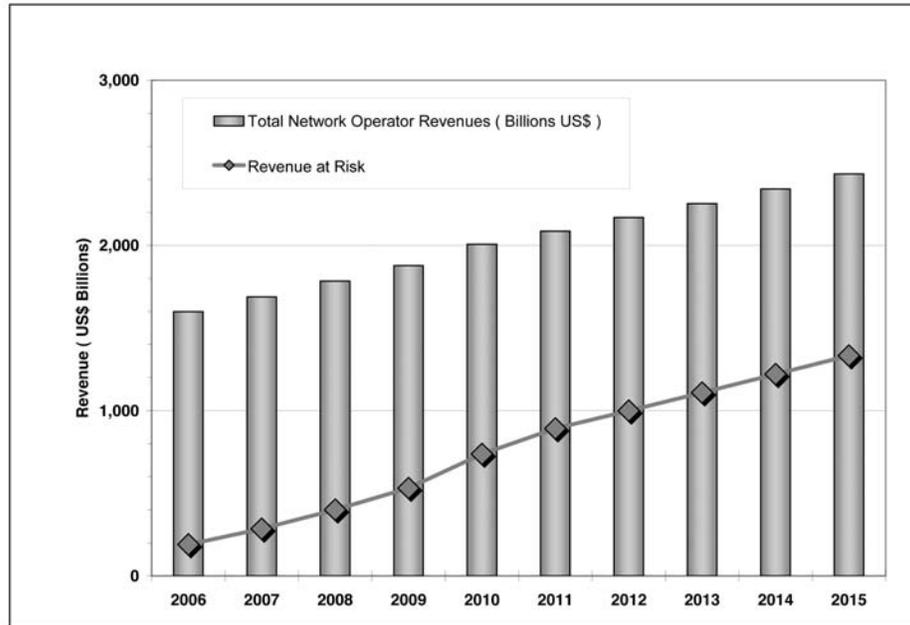
Telco Revenue at Risk

To access the full report:
http://www.projectliberty.org/index.php/liberty/resource_center/papers

"Identity validation, security, and privacy are increasingly critical issues in the world. A large community of players has developed to address these critical issues and propose solutions that are relevant to their needs. Like many emerging trends that are enabled by technology and propelled by social and political change, the solutions to this emerging identity crisis will arrive much more rapidly and profoundly than many businesses may contemplate. Thus, the current participants will likely reap the rewards of risk, while those that hope to be flexible followers may find the market has moved past their responses."

Eileen Healy, CEO, The TeleCompetition Group

Talking about the FIDELITY-Project with Jean-Pierre Tual

Today, our editors talk to Jean-Pierre Tual, the director of industrial relations in the Technology and Innovation department at Gemalto in Meudon, France, and one of the founders of the FIDELITY-Project, a European-based consortium of telecom companies, research organizations and others who've come together to implement a federated pan-European IDM system based on the Liberty specifications. Tual discusses what FIDELITY has accomplished, what the group has learned and where he sees identity and mobile networks going in the future.

How far along is FIDELITY?

The project now is officially finished. It was started in April 2005 and finished in December 2006. We had our final review last December and from that we derived a certain number of lessons.

What is the project's scope?

The scope of FIDELITY was to implement four Circles of Trust in four European countries according to the Liberty Alliance specifications. There was one Circle of Trust around Orange in France, one around TeliaSonera in Finland, another one around Telenor in Norway and a last one around Amena (that became Orange Spain by project mid-term) in Spain. The primary purpose of the project was to create Circles of Trust gathering identity providers, attribute providers and service providers among the participants, and to test their interoperability through the implementation of real business scenarios representative of the telecommunications world.

So far, the project has demonstrated that independent Liberty implementations may reach a rather good level of interoperability,

showing that local identity federations can interact at a pan-European level, enabling attribute sharing as well as exchange of identity and authentication of citizens between service and identity providers–while the usage and validity of identity and attribute data remains totally under the user's control and acceptance.

Why is this an important initiative?

The efficient management of user identities and attributes has become an essential function in e-business and e-government. But currently, user identities on the Internet are fragmented across various identity providers like e-business services, portals, employers and public online services. The management of multiple log-in/password combinations to access e-services, as well as the manual filing of complex forms is neither efficient for the organization, nor user-friendly and trustful for the end-user.

That's why we turned to Liberty and federated identity. We see federated network identity concepts that allow single sign-on as a both a powerful way to address current shortcomings and as new business enablers. What's great about Liberty is that they have developed a federated identity management model open to attribute sharing and based on open architectures and standards, as opposed to proprietary solutions.

Where does the telecom sector fit in?

Considering the actual merging of fixed and mobile networks, telecom providers are potentially key users of federated identity with a vested interest in our output. Furthermore, if identity providing is one of tomorrow's key components on the Internet, we believe that Telcos are one of the most justified actors to play this role, because they already have their customer's trust, information and means to authenticate them.

Therefore, the FIDELITY-Project has developed and evaluated technical solutions for the implementation of all appropriate elements in fixed networks as well as in mobile networks, leveraging some of their key assets such as the SIM card. The proof-of-concept tests and

demonstrations going forward in FIDELITY include mobile, fixed and Internet scenarios. Added value services based on user's attributes such as the personal profile, wallet, geo-location, or other personal identity attributes enabled us to broadly enhance the demonstrations. The project results are being analyzed and made available with recommendations and considerations about a totally new range of services particularly suited for Telcos.

Can you share with us some of the lessons that you've learned?

We got feedback from all the participants regarding the Liberty Alliance specifications in terms of how precise and unambiguous they were, relative to the implementation of the functions we targeted for enabling the discovery, access and management of services between Circles of Trust.

We derived some information on what are some of the best ways to deploy the Liberty specifications for certain given services. We also evaluated the current status of commercial implementations of Liberty-compliant software, but we have not named those vendors publicly.

In the coming weeks, we will produce a number of documents that will be directed to the Liberty Alliance. We will also publicly disclose on our Web site our consolidated test results. We have been, and we'll also be, making several public presentations, using cases and demonstrations showing how the Circles of Trust could interact with each other.

Were there any surprises along the way?

Yes, both good and bad. The good surprise is that it worked. All our scenarios were representative of real use case situations and were developed in completely heterogeneous environments, involving both commercial and in-house packages. We were also able to manage interfused services which was a good surprise. The bad surprise is that it was more complex than expected because we found some points not completely precise in the actual specs, and also differences in the way these specs are implemented by individual commercial vendors.

This is why consortiums like Liberty are so important. Their specifications are based on real world scenarios and FIDELITY represents the ultimate Liberty use case collaborator. We're working closely with Liberty and our findings will be addressed—resulting in even a stronger spec. This way, everyone benefits.

Were there any interesting outputs or other learning you could share with us?

As a smart-card builder, Gemalto has learned a lot about incorporating smart cards within a Liberty framework–and this capability is appreciated by the mobile network operators because smart cards represent an asset they completely control and they provide a high level of security for strong authentication purposes. Another capability that was highly appreciated is the capability of smart cards, with new available technology, to behave as a powerful attribute provider, able to manage very efficiently private or sensitive attributes under the control of the user. In this respect, it has been really very easy to adapt the smart card world to the Liberty specifications and also to customize the authentication levels the operators would like to use in their environment.

I was very happy to see that smart cards can be an efficient tool for supporting the Liberty specs both from the ID-FF and the ID-WSF perspective. This may lead to a kind of new distributed approach for

security and privacy management that can be integrated with Liberty Alliance–changing the way network security is handled by operators. We're also going to be putting together some guidelines that "from a Sirius perspective," could look as a basis for a "protection profile" (in the Common Criteria sense) for Inter-CoT networking.

Is FIDELITY going to close? Are you going to do another project?

Fidelity is going to close. We have the two last official "public exposures" of the project at the Berlin Celtic event (23 February 2007) and the Brussels Eureka event (end of March). But that said, there are some project activities that will continue. First, we will keep our four Circles of Trust "alive" for some months in our respective organizations. They will be used by the FIDELITY R&D team to demo the project to all the FIDELITY partners' business departments but also, in some cases, to make road shows for external organizations. We have also decided to continue pushing out additional documents, polishing them and bringing them to Liberty's attention. Last, we are considering launching new projects that directly elaborate on and capitalize on the FIDELITY concept with some extension of scope. The security guidelines are an example of what could be more elaborated in a successor project.

Where can members find out about upcoming demonstrations or presentations?

Public information on FIDELITY as well as live demonstrations are available at:
http://www.celtic-fidelity.org/fidelity/flash/index.html

For more information, you can contact us directly at:
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guillaume.garnierdefalletans@orange-ftgroup.com

"….we turned to Liberty and federated identity. We see federated network identity concepts that allow single sign-on as a both a powerful way to address current shortcomings and as new business enablers."

Jean-Pierre Tual

Mobile Resources: ITU—International Telecommunications Union

In the last few years, the need for digital identity has risen as a strong driving force behind network architecture design, service provisioning and content handling, billing, and charging. Digital identity is expected to be a powerful tool for users to access unlimited digital resources via a limited number of trusted relationships, and for providers to offer these resources across the different layers of communication systems, administrative domains and even legal boundaries. However, the lack of a common view on digital identity across these different layers has so far resulted in independently developed and therefore often inconsistent identity management frameworks as well as incompatible applications.

The development of a more consistent approach to the conflicting requirements of privacy, identification and security is a critical challenge going forward.

The ITU, the International Telecommunications Union, sponsored a workshop last December in Geneva to look at these issues and others. This workshop, a Joint ITU-T/EU IST Daidalos Project Workshop, investigated different approaches, analyzed gaps in today's standards, identified future challenges, and found common goals which will provide direction to the work currently being undertaken in the different projects and standards development organizations (SDOs). There are a number of excellent presentations at this link:
http://www.itu.int/ITU-T/worksem/ngn/200612/programme.html

The event featured presentations by several Liberty member organizations and Liberty affiliated individuals including:

- Aude Pichelin, France Telecom, "Identity Management and Operate Perspectives"
- Sangrae Cho, ETRI, "Present and Future Trends of Digital Identity in Korea"
- Hidehito Gomi, NEC, "Identity Convergence for NDN Platforms and Business"
- Hemma PrafullChandra, VeriSign, "Identity Management Ecosystem: Requirements for Youth"
- Hellmuth Broda, Sun Microsystems, "Liberty and Privacy"

A HISTORICAL PERSPECTIVE

On 24 May, 1844, Samuel Morse sent his first public message over a telegraph line between Washington and Baltimore, and through that simple act, ushered in the telecommunication age.

Barely ten years later, telegraphy was available as a service to the general public. In those days, however, telegraph lines did not cross national borders. Because each country used a different system, messages had to be transcribed, translated and handed over at frontiers, then re-transmitted over the telegraph network of the neighboring country.

To simplify matters, countries began to develop bilateral or regional agreements, so that by 1864 there were several regional conventions in place.

The continuing rapid expansion of telegraph networks in a growing number of countries finally prompted 20 European States to meet to develop a framework agreement covering international interconnection. At the same time, the group decided on common rules to standardize equipment to facilitate international interconnection, adopted uniform operating instructions which would apply to all countries, and laid down common international tariff and accounting rules.

On 17 May, 1865, after two and a half months of arduous negotiation, the first International Telegraph Convention was signed in Paris by the 20 founding members, and the International Telegraph Union (ITU) was established to facilitate subsequent amendments to this initial agreement. Today, some 140 years later, the reasons which led to the establishment of ITU still apply, and the fundamental objectives of the organization remain basically unchanged.

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Content Goes Mobile with Telefónica Móviles España

The Organization

Telefónica Móviles España is one of the world's premier mobile carriers and the leader in the Spanish and Portuguese-speaking markets, with operations in 15 countries and more than 88 million customers worldwide (at the end of September 2005). Telefónica Móviles España serves the Spanish speaking nations in the parent company's markets and offers a full range of services and applications using the latest mobile technologies including UMTS. Telefónica Móviles España has more than 19.6 million customers. Telefónica Móviles shares are quoted on the Spanish markets and New York Stock Exchange, under the ticker symbol TEM. Movistar is the commercial brand for all the companies of the Telefónica Móviles Group around the world, except in Morocco and Brazil.

Application

Business-to-Consumer, Consumer-to-Consumer

Challenge

Telefónica Móviles sought a way to provide mobile content services in a privacy friendly way, reduce mobile spam, and drive adoption of services overall. They also wanted to used federated pseudonyms rather than phone numbers for service access.

"Symlabs has a long history of building services that carriers offer to consumers. Through our participation in the Liberty Alliance, mobile operators came to us to help them tackle the privacy problems involved with mobile content messaging.By contributing an editor resource for the standardization of ID-MM7, Symlabs was able to offer a full solution – the Symlabs Federated Identity Access Manager – very early in the process. This led to a practical trial in October 2005 and now our solution has reached general market availability."

Sampo Kellomaki
Chief Architect, Symlabs

Why the Liberty Alliance

Both Telefónica Móviles and Symlabs chose to work with the Liberty Alliance for the following key reasons:

- Liberty Alliance specifications are open.

- The specifications are market-driven.

- There's no vendor lock-in. The need for proprietary implementations was eliminated.

- Liberty provides a distributed federated model and enables Circles of Trust.

- Security is appropriately addressed.

Privacy Over the Mobile Networks

Telefónica was drawn to Symlabs' Liberty-based federated solution because federated mobile identity offers an elegant way to address the privacy concerns that the mobile content services precipitate. "A very private and sensitive piece of subscriber information–the phone number–is protected by this solution," said Jeffrey M. Zukowski, Director of Marketing, Symlabs. "This helps increase subscribers' trust in value-added services, leading to an increase in usage, thereby driving up revenue per user."

By using federated identifiers, which are different for each user-service interaction, collusion or unauthorized information gathering by the service providers can be prevented. What's more, the Liberty ID Web Services Framework allows a federated identifier to be used in lieu of the phone number, thus avoiding all the issues that sharing a phone number with a weakly trusted party would create, e.g., SPAM. This is akin to the "use once" credit card numbers that the payment industry has touted as a solution to e-commerce, however the federated mobile messaging solution is fully automated and the end user need not be aware of the technology.

Push, Pull, Chat, Gaming and More: Opening up Services to Consumers

Liberty-enabled capabilities provide Telefónica with the means to engage and delight their customers in new ways through:

Mobile content sales: ring tones and wall papers

Mobile multimedia content: may require a high degree of privacy

Mobile-based interaction: interactive TV shows and games

Voting with mobile phone: (e.g., TV show asks audience to vote by sending messages to a short code)

Social networking applications: barfinder, community awareness, friend finder and chat (instant messaging gateway)

Mediated communication: (e.g., between divorced parties for benefit of common children, while respecting court mandated restrictions on approach)

UMS notifications: voice/email/fax, "I'm Away" multimedia announcement, push-type information services: location-based weather and traffic, sports, jokes

Pull-type information services: stock quote request etc.

Push-reply-type services: opinion polls, quiz games

List servers: public or private message boards, MMS Publisher, chat

With all services, the user's consent is always mandated. Person-to-person messaging applies strict permissions enforcement. The user is in control of the link with all the third party service providers and can terminate the relationship with any of them, effectively barring that third party from contacting the user in the future.

Liberty Enables Identity-based Messaging Over a Mobile Network.

Improving user friendliness was also a key driver for Telefónica Móviles. In this new environment, it's simply easier for all parties to transact business. Subscribers are assured that their privacy rights are not infringed upon. At Telefónica, a composition of several Liberty-enabled services is used to allow third parties to provide subscribers with a coherent service experience. The handset database is used to tailor content to the subscriber. The content is requested and delivered using

an identity-based messaging service over a mobile network. The solution demonstrates a modular and extensible architecture that allows mobile operators to provide services in a privacy friendly way while working with third party content providers.

This solution also enables content providers to leverage technology on a massive scale. For example, imagine being able to alert football fans by MMS video that their favorite team has scored a goal–as it happens–without fear of being spammed. Applications like this are enabled by this new service.

ID-MM7 in Action

Telefónica is deploying ID-MM7, a protocol developed and promoted by the Liberty Alliance, driven by major mobile operators such as Vodafone and Telefónica Móviles, to standardize identity-based Web services interfaces to mobile messaging.

The ID-MM7 specification adds significant value to existing Web services. MM7 has long been used by operators for relaying MMS and SMS traffic. ID-MM7 enables an entirely new business model wherein the content providers know their subscribers only pseudonymously - providing the capability to thwart spam, identity theft, and fraud. The mobile industry has started to apply Web services technologies to expose and integrate the value it holds in the mobile domain, thereby providing an opportunity to lower integration costs between operators and content partners. ID-MM7 provides subscribers the security from risks such as fraud, spam and identity theft that would otherwise impede their acceptance of these new services. The ID-MM7 specification is currently a work in progress inside the services track of the Liberty Alliance. It is targeted for achieving its final status in Q1 2006.

How does this actually work in practice? The trick is to use Liberty protocols for issuing anonymous identities and then use the Symlabs Identity Management Framework to map these anonymous identifiers back to actionable data - for instance, the phone number for sending the short message. All this takes place without exposing data to the intermediary, in this case, the fan club operator.

The same identifier is used to invoke other Liberty-based services for the subscriber (the handset database query using ID-DAP in this case).

The ID-DAP specification is a work in progress that will enable the lookup of information regarding a Liberty pseudonym in a secure way.

Symlabs is First to Market

The Liberty Alliance, driven by major mobile operators such as Vodafone and Telefónica Móviles, fast-tracked the effort to standardize identity-based Web services interfaces to mobile messaging. This effort has, in turn, produced impressive results in a fairly short period of time.

Telefónica Móviles and Symlabs demonstrated the first handset model-aware end-to-end system utilizing multiple Web services interfaces during Liberty Education Days in Tokyo and Singapore. General availability of the SLIM messaging server was announced first week of February, 2006.

"We wanted to demonstrate a real-world application of the ID-MM7 messaging specification, and not only have we have achieved that goal - the enthusiastic reception by the crowds in Singapore and Japan further shows its commercial potential," said Antonio Navarro, CEO, Symlabs.

Benefits to Service Providers

- Improved customer experience
- Increased revenue
- Increased usage as a result of end-customers enhanced sense of trust
- Reduced administration for all parties
- Re-use of the same interface for all mobile operators

Benefits to Consumers / Subscribers / End-users

- Content providers know their subscribers only pseudonymously
- Affords unprecedented protection against spam, identity theft and fraud
- Ensures that service providers cannot share the subscriber's identity
- Ensures that access control can be applied per service providers
- Provides the ability to deliver a wide variety of content efficiently and securely to subscribers
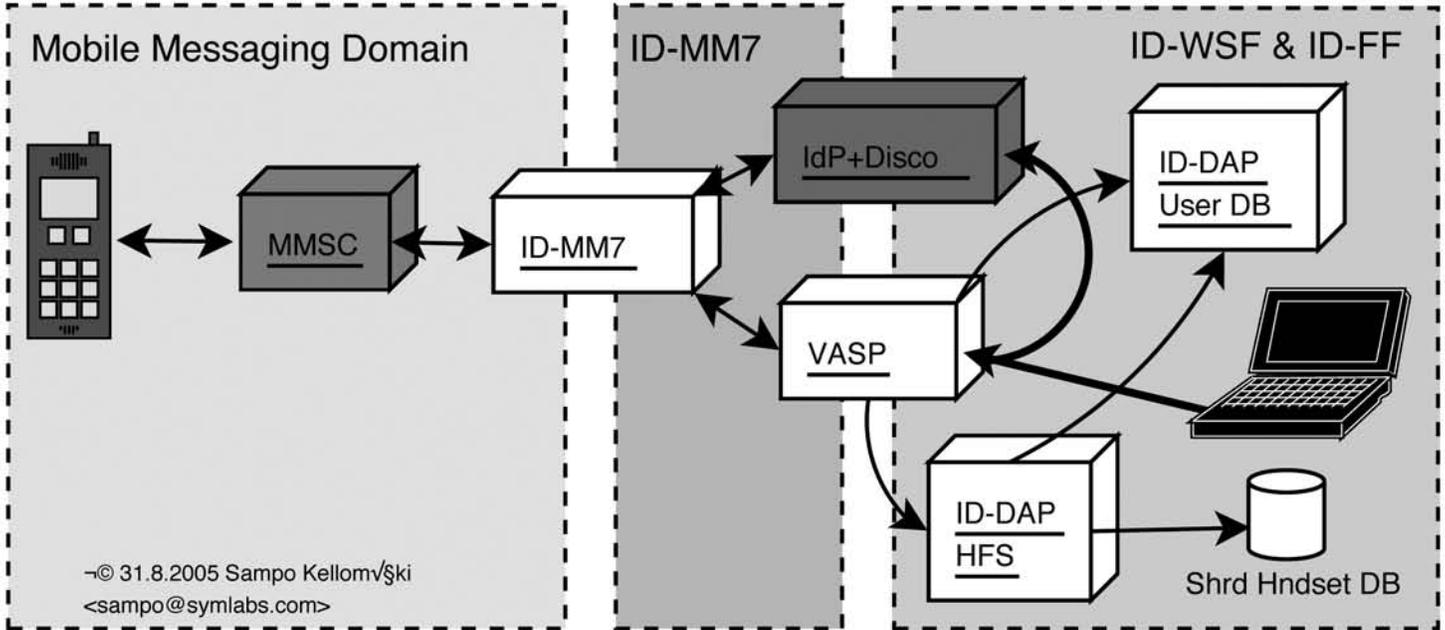
Benefits to Mobile Operators

- Increased revenue
- Increased trust by subscribers
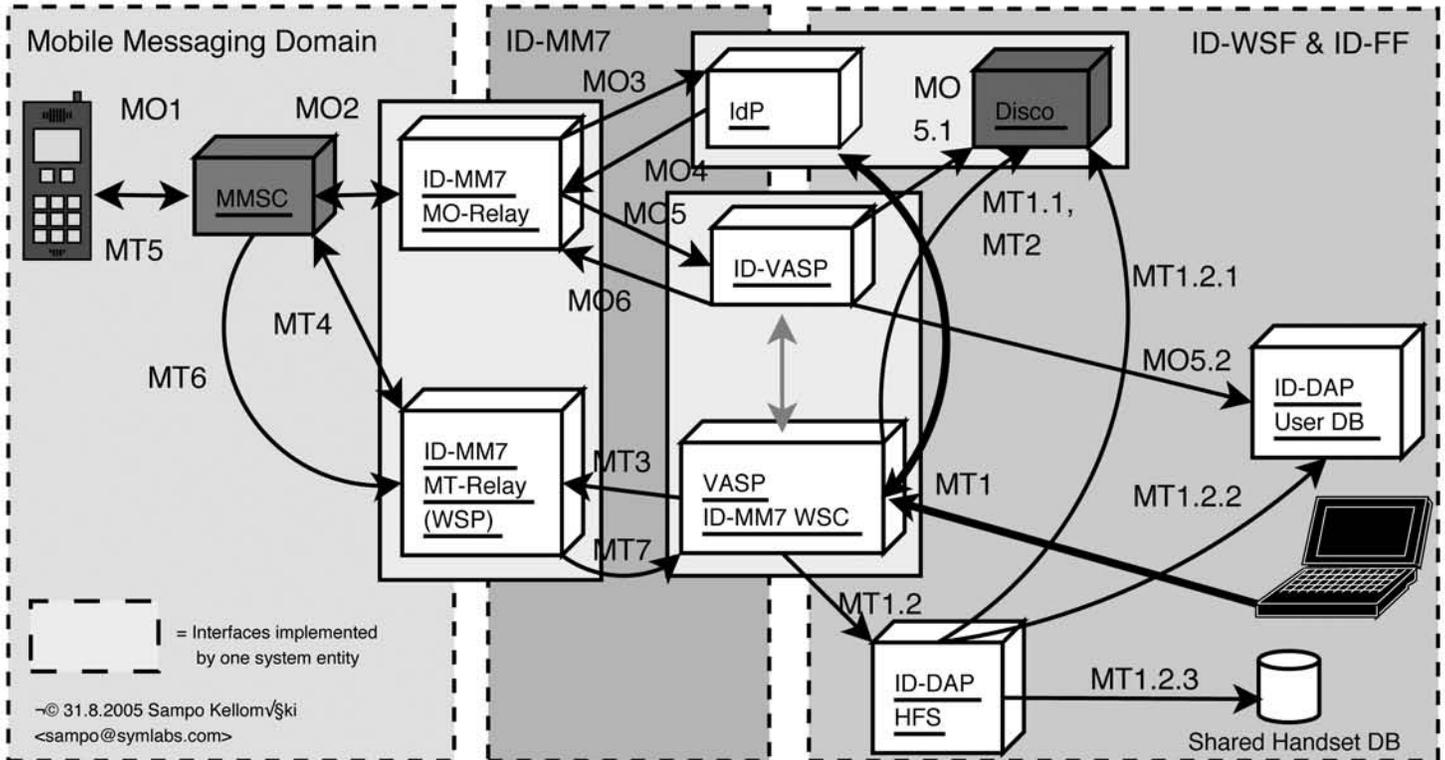- COTS software available, avoiding vendor lock-in

Benefits for Mobile Content Aggregators

- New value-added business
- Better audit trails reduce management cost
- "Arms length" relationships with new business can be maintained
- Standardized solution allows the content aggregator to have the same interface towards all operators

Architecture Overview

Mobile Messaging Domain

ID-MM7

ID-WSF & ID-FF

MMSC

ID-MM7

IdP+Disco

ID-DAP / User DB

VASP

ID-DAP / HFS

Shrd Hndset DB

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Detailed Architecture

Mobile Messaging Domain

ID-MM7

ID-WSF & ID-FF

MO1

MO2

MO3

MO 5.1

IdP

Disco

MMSC

ID-MM7 / MO-Relay

MO4

MT1.1, MT2

MT5

MO5

ID-VASP

MT1.2.1

MT4

MO6

MO5.2

ID-DAP / User DB

MT6

ID-MM7 / MT-Relay / (WSP)

MT3

VASP / ID-MM7 WSC

MT1

MT1.2.2

MT7

MT1.2

ID-DAP / HFS

MT1.2.3

Shared Handset DB

= Interfaces implemented by one system entity

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About the Liberty Alliance Project

The Liberty Alliance Project (www.projectliberty.org) is a global alliance of companies, non-profit and government organizations developing open standards and business, policy and privacy guidelines for federated network identity. Federated identity offers businesses, governments, employees and consumers a more convenient and secure way to control identity information and is a key component in driving the use of e-commerce, personalized data services and identity-based Web services. Liberty specifications are deployed worldwide by organizations that include American Express, AOL, BIPAC, Ericsson, General Motors, France Telecom, Nokia, NTT and Sun Microsystems. Membership is open to all commercial and non-commercial organizations. A full list of Liberty Alliance members, as well as information about how to become a member, is available at **www.projectliberty.org**