

Case Study:

Federated Telco Billing: The Next Wave in E-Commerce

The Company

eBIZ.mobility was established in 2003 to provide a unique digital content payment processing solution for telcos, Internet service providers, and digital content providers that is suited to the "open garden" model of consumer Internet browsing. The company's mission is to enable mobile and landline network operators, Internet service providers, and content providers to profit from payment processing by giving them the capabilities to offer their own customers a secure and convenient way to buy digital content online--from anywhere--via any electronic medium.

Application

Business-to-Consumer, Consumer-to-Consumer

Challenge

With the proliferation of mobile devices and the potential of anytime-anywhere commerce there has been a steady rise in interest among retailers, banks, vendors, payment networks and mobile network operators in participating in the digital content payment market. But there has been no interoperator standard for handling online digital content transactions in a secure and cost-effective manner for computers and mobile phones.

The Solution

eBIZ.mobility has developed a federated payment processing solution where purchases made over PCs or cellular telephones are charged directly to telecom or ISP invoices. Their product, OneTouch™ On-line Purchasing, is built to support micro-payments (even purchases less than \$1) for digital media and content, like coupons, games, dating, ring tones, music and video downloads. Their solution was developed based on proven technology using the Liberty Alliance/SAML federated identity standard.

"The federated identity standard provides a template for protecting user information and thereby encouraging online usage and commerce," said Jeremy Kagan, eBIZ CEO. "In order for the multiple players in the mobile value chain to reach their revenue potential around micropayments, low cost digital content has to be monetized and identity information protected. For this reason, eBIZ.mobility chose to model its innovative online payment solution on the Liberty Alliance specifications."

OneTouch is similar to PayPal except that with OneTouch, purchasers do not need to open another account with anyone: Purchasers only register once with their preferred online provider with whom they already have a service/billing relationship and do not have to enter credit card details with multiple online retailers. With OneTouch, only the service provider or phone company is aware of the purchaser's identity, thus creating a more secure environment. Content providers and online retailers also benefit by offering the convenience of OneTouch payment to the rapidly expanding base of subscribers to service providers.

"We see OneTouch filling a void and as a way to kick-start the mobile commerce industry," said Gershon Kagan, eBIZ.mobility's CTO. "It represents a real-time bridge between different entities that do the billing for the customer and can also handle payments to the merchants."

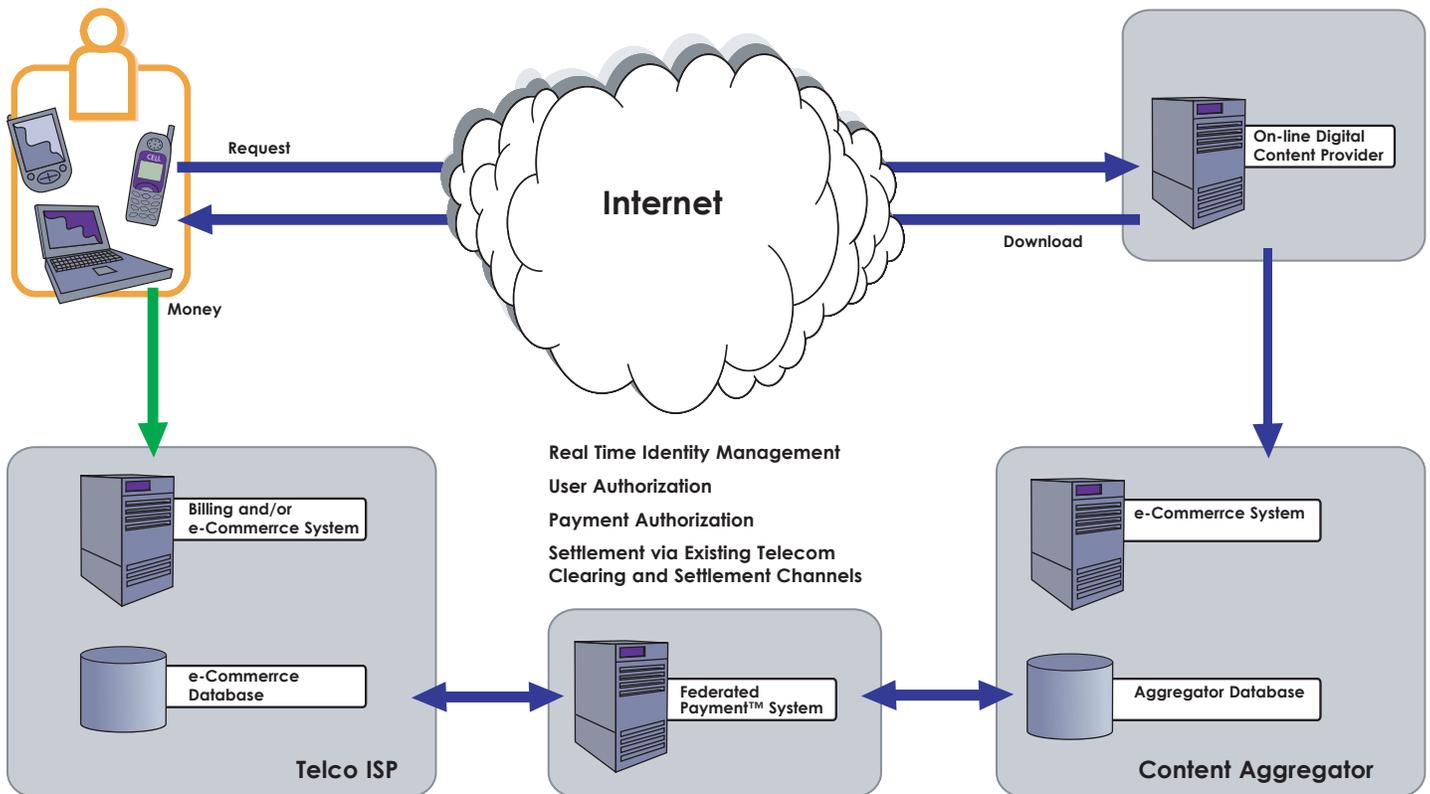
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Jeremy Kagan
CEO, eBIZ.mobility

Dismantling Obstacles to Micro E-Commerce through Federated Telco Billing

eBIZ.mobility's business model is built on the idea that e-commerce is not as big as it could be. In fact, over three-quarters (78%) of online consumers would buy more if given safer and more convenient payment options. Nearly half (46%) of consumers would purchase more digital content if given the option to add these purchases to existing telephone or broadband bills. More secure and more convenient payment options are the overwhelming drivers by a four-to-one ratio over price in providing incentives to consumers to make more online content purchases. (Source: 2005 PaymentOne Study.) "Merchants are telling us that if they had a generic format for telco billing, we'd be doubling or tripling their sales," said Gershon Kagan.

One of the key drivers behind this projected growth is the fact that so much online content is targeted to the youth market--kids who don't have credit cards. The second reason is that telco billing is perceived as a safer way to buy something small. "Studies show that people are willing to use their credit cards for a \$200 item, but for a \$2 purchase, they aren't as willing to go there, especially if they don't know the merchant," explained Jeremy Kagan, eBIZ.mobility's CEO. "And some of the ring tone providers may look iffy to people. But when they see the One-Touch logo, they know they can pay safely and easily."



How It Works: Federation in Action

OneTouch deploys a federated identity framework that enables payments or electronic commerce from any kind of device, whether it is a mobile phone, a PC or Web site. Users identify themselves very quickly without compromising any personal information and without exposing themselves to personal or credit card risk. This is a critical aspect to the eBIZ value proposition. "The fact that a consumer can make a small micropayment transaction without exposing themselves to credit card or identity theft risk is--we believe--the missing link," said Jeremy Kagan.

eBIZ has essentially created a fully interoperable bridge per transaction between any billing provider or entity like a telco, ISP, VOIP, or mobile operator and an online content provider--making micro e-commerce safe and easy.

In this model, the Liberty Alliance specifications provide a clear, intuitive, and universal approach to satisfying the industry need to maintain a consumer's privacy while not impinging on the consumer's ability to transact business in the expanding "open garden" markets of the Web. And this is why eBIZ.mobility modeled its Federated Payment™ System, which is the technology behind OneTouch, on the Liberty Alliance specifications.

Building Validated Sources of Revenue for Mobile and VOIP Providers

Most phone service providers' primary revenue source is through their monthly subscription model: they charge their customers an XYZ fee a month and that's it. Some garner additional revenue for long distance. But they often find themselves stuck when it comes to creating new sources of revenue.

OneTouch opens up a new revenue source because it enables subscribers to charge small items to their phone bill, privately and securely. Voice Over IP (VOIP) companies, for example, have been among the early adopters of this service because it provides them a way to get into both the ring tones business and online payments business, both of which are huge.

The Tower Group predicts that by 2009, digital content is going to generate more than \$11 billion a year. "If you look at credit card processing as a gauge, most credit card processors usually charge a 3 percent processing fee plus a minimum fee. What's 3 percent of 11 or 12 billion dollars?" asked Gershon Kagan.

The Walled Gardens are Coming Down

According to Vodafone UK and Orange UK, in June 2005, 70 percent of the content that customers consumed through their networks was not bought through them--meaning customers were going out to other sites and to third parties, buying content and then downloading it to their mobile phones. The mobile network operator is quickly following in the footsteps of landline telcos in becoming merely a consumer's access pipe to the World Wide Web.

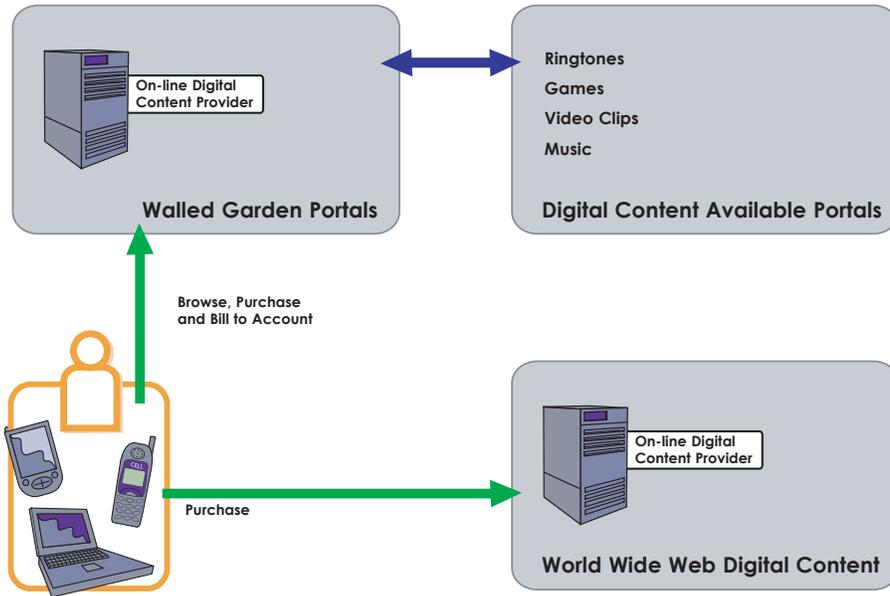
This trend is going to continue to grow for two key reasons:

1) The disintegration of SIMPAY, sparked by T-Mobile's mid-2005 decision to embrace the Open Internet with a fully unrestricted browser available on their handsets. The Simpay Alliance was established in 2003 specifically to solve this problem. Its collapse less than 18 months later in mid-2005 created a vacuum in a hot space that is now wide open. Banks don't seem to want to play and operators seemingly can't get it together.

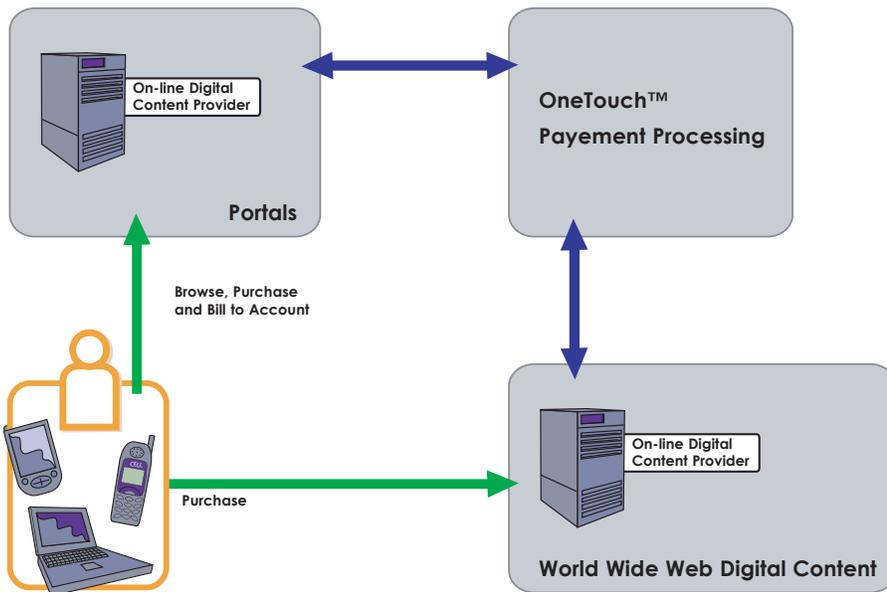
2) Regulatory pressure on network operators to remove any blocking of or restrictions on consumers' access to browsing the Web, as seen in the latest US Telecom Regulation working its way through Congress. This means that network operators or service providers cannot force their customers to remain a captive audience to their portals. Consumers increasingly demand full browsing access, and they will use service providers that give them what they want.

"I remember researching the Liberty Alliance way back before Radicchio joined in and I'd always felt positive about the Liberty Alliance. I think it's the right idea. The ability to have different Circles of Trust, and to use that in an effective way, is just going to continue to become more and more popular."

Gershon Kagan
CTO, eBIZ.mobility



Without OneTouch, consumers can either buy the subset of online content that is available through their portal, or expose their credit cards online



With OneTouch, payments are simpler as consumers have complete freedom

Exploding Digital Content Market Requires New Payment Processing Methods

Current payment methods (mostly credit cards) are inadequate for micropayments. The under-18 crowd, comprising the majority of content buyers, do not have credit cards, and the over-18 consumers are still reluctant to use their credit cards to purchase digital content from unknown merchants for fear of identity theft and other fraud. Industry reports confirm the fact that: "They look but they don't buy!"

"Content providers despise traditional payment methods due to the high service fees charged by credit card companies and service providers for processing micropayments," explained Jeremy Kagan. "They also suffer from significant

Definition of Terms

Circle of Trust (n) 1. a trusted group of identity and service providers who share linked identities and have pertinent agreements in place 2. where an individual or a business inputs a password once and minimal necessary credentials are shared among the Circle of Trust's members 3. a step strongly linked to federation, where multiple entities are involved, and there are business, policy and technical relationships in place 4. also known as "trust circle"

Federation (n) 1. an association comprising of any number of service providers or organizations 2. a model based upon trust in which user identities and security are individually managed and distributed by the service providers or member organizations 3. where the individual organization is responsible for vouching for the identity of its own users and the users are able to transparently interact with other trusted partners based on this first authentication 4. resembles the credit card model in that vendors accept an individual's ability to pay and then that ability is authenticated/verified through a single location

ID-DAP (n) 1. a well known protocol for looking up information. ID-DAP enables an entirely new business model wherein an application can access information about a principal known only by their federation pseudonym

Identity (n) 1. the most basic element in a high value relationship 2. the individual characteristics by which a person, business, business partner, government agency or other entity is recognized or known

Identity Provider (IdP) (n) 1. a service that authenticates identity; often a trusted party such as a bank, mobile operator, or an Internet Service Provider (ISP)

'revenue leakage,' meaning lost revenues due to one-sided accounting by service providers, and it is hard to dispute absent objective transaction tracking by an independent entity."

The Kagan Brothers note that telcos and mobile operators are losing a lucrative revenue stream with the collapse of their artificial restrictions on their subscribers' ability to purchase content anywhere on the Web through their "Walled Garden" portals. Their only hope to continue receiving some revenue from digital content purchases is to use their existing billing infrastructure to provide reasonably priced payment processing services irrespective of the source of the content.

"They've told us that they want to be able to sell Web content and to make a profit from payment and processing from customers going to places like National Geographic.com or Barbie.com," explained Gershon Kagan. "That's where our fully interoperable bridge comes in. It bridges between any billing provider like a VOIP or mobile operator and the world of content, the world of the online merchant."

Verification and Access

OneTouch provides an age verification capability as well. How it works is simple: Customer information is held by the billing entity--so that when someone signs up for telephone service, the billing entity--the telco--gets his/her address, bank account and often social security information.

The age verification feature allows parents to exercise effective parental control assuring that their kids are downloading only "age-appropriate" content, and to set and enforce spending limits for kids. It does not change the kids' downloading experience. Its presence is completely transparent, and does not add any extra steps to the purchasing process for allowed content. Once set, the age verification controls are enforced automatically in real time on every transaction.

"We can provide the age verification information to the merchant in real time without knowing anything about the customer," said Gershon Kagan. "Via an application in Liberty federated identity, the telephone operators aren't liable for problems associated with minors getting into trouble, because we've already accounted for the age of the consumer in our private, secure system."

Building a Circle of Trust

By deploying a federated identity model or Circle of Trust, OneTouch eliminates the possibility of identity theft. In this model, no identity information is being transmitted in order to affect a transaction.

A consumer who wants to buy a set of ring tones on a OneTouch enabled merchant, simply types in their OneTouch password. The order--without any identity information--is routed to the telco or billing entity, and the transaction is done.

"As a consumer you are setting up a Circle of Trust with the telco as your identity provider," explained Gershon Kagan. "Your billing provider is whom you trust. That merchant isn't necessarily someone you trust and you never have to provide them with any identity or credit information. You pick who you want to deal with and then you can transact with them securely."

According to the Kagan brothers, telcos make ideal billing partners because customers trust them and because telcos have a long history of deploying systems that are in the business of charging people for small increments like ten cents. "This is very different from credit cards, which traditionally have trouble billing for items below a certain amount," said Jeremy. "Micropayments represent a win-win for telecom billing. They have the systems in place. The market is there and it's cost effective for them and not for a credit card company."

Definition of Terms

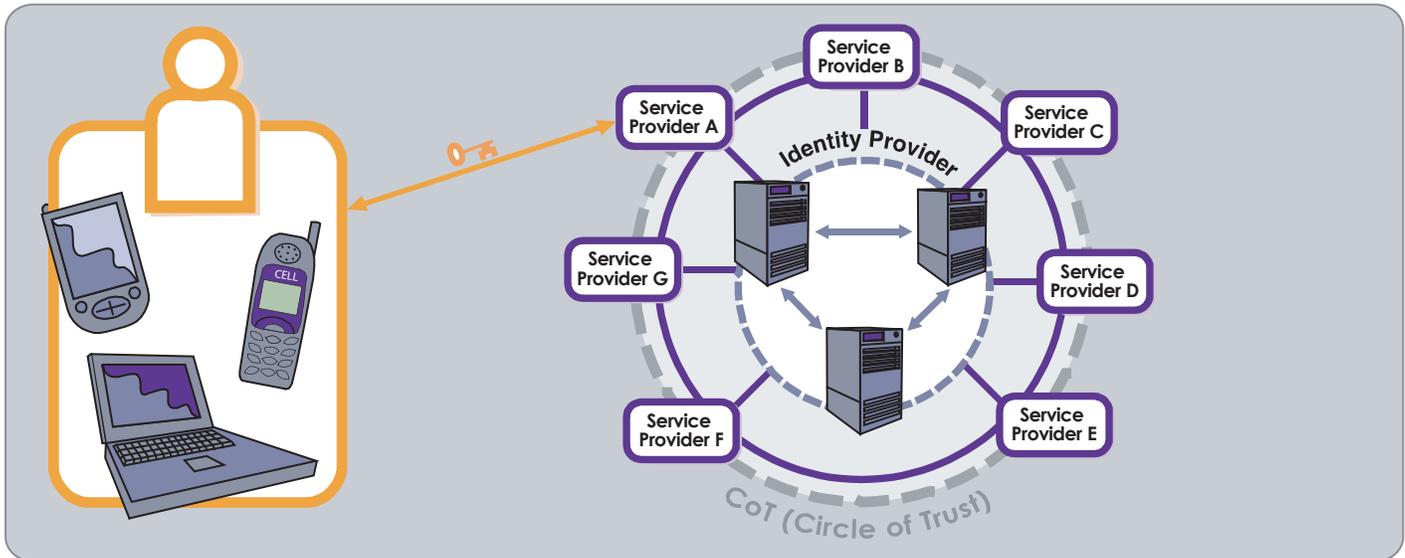
ID-MM7 (n) 1. MM7 is a specification that has been long used by operators for relaying MMS and SMS traffic. ID-MM7 enables an entirely new business model wherein the content providers know their subscribers only pseudonymously – thus providing unprecedented ability to thwart spam, identity theft and fraud

MM7 (n) 1. a protocol standardized by the 3GPP to allow the delivery and submission of messages between valued-added Service Providers and mobile operators

Mobile Web Services (n). 1. where Web Services technologies expose and integrate the value it holds in the mobile domain 2. an opportunity to lower integration costs between operators and content partners

Service Provider (SP) (n) 1. a federation partner that provides services to an end user; service providers typically do not authenticate users but instead request authentication decisions from an identity provider

Single Sign-on (n) 1. having the capability of accessing an online system once and having that authentication honored by other system entities, often service providers 2. sometimes called SSO



The Potential for Federating Other Applications

Micropayments represent just the beginning. Person-to-person money transfers, bill payments, and other kinds of financial transactions via the phone may be available in the not-so-distant future.

"Federated identity is used as the underlying concept for the OneTouch application," said Gershon Kagan. "The same infrastructure can serve as a platform for a variety of future identity-management-based applications in banking, private network access, and others."

Consumer Benefits

- Single sign-on to multiple merchants using the same login/password
- Uniform single button purchasing from any electronic medium (PC, Mobile, etc.) anywhere in the world
- No need to provide credit information to multiple unknown merchants, so increased security
- No need to subscribe to any additional payment service (such as PayPal)
- Privacy ensured through use of an anonymous alias to buy content
- Safety from identity theft

Telco and Service Provider Benefits

- Additional revenue generated through existing infrastructure
- Increased customer loyalty and reduced churn
- Profit opportunities with off-portal content providers
- Robust Age Verification that gives service providers the ability to enforce age limitation regulations on digital content in real time

Merchant (Content Provider) Benefits

- Significantly expanded customer base
- Higher revenue share
- Increased sales

About the Liberty Alliance

The Liberty Alliance Project (www.projectliberty.org) is a global alliance of companies, nonprofit 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, General Motors, Fidelity Investments, France Telecom, Nokia, NTT, and Sun Microsystems. Membership is open to all commercial and noncommercial organizations. A full list of Liberty Alliance members, as well as information about how to become a member, is available at www.projectliberty.org.