

The background features a large, abstract blue sphere with a grid of white binary code (0s and 1s) overlaid on it. A blue, glowing, chain-like structure spirals around the sphere. The overall color palette is light blue and white, with a prominent yellow square on the right side.

OPEN SOURCE BUSINESS CONFERENCE

Building Your Big Data Future with Open Source

COMPUTERWORLD
OSBC

SAN FRANCISCO



Building Your Big Data Future with Open Source



Creating Value to Drive Open-Source Adoption: **Security-Related Examples with Big Data, Big Cloud and Big Legal**

Admir Abdurahmanovic
VP, co-founder
PrimeKey Solutions AB



PrimeKey Solutions AB © 2011

Why?

- Why are we here, at OSBC?
 - domain: Open Source technologies
 - focus: Business aspects
 - to collaborate: discuss, learn, share
- Why is PrimeKey here, at OSBC?
 - to share our experiences within Open Source, security-related technologies and services
 - to discuss with and learn from other attendees

The Sublime Ingredient

The Differentiated Strategic Value in Open Source

“Rain, Steam and Speed”,
J.M.W. Turner



Railroad in 1844

Tactical Value	Strategic Value
Comfort	Speed
Prestige	Access

Open Source in 2011

Tactical Value	Strategic Value
Robustness	Maturity
Sophistication	Risk Abatement
Lower TCO	Enrichment
Customization	Adaptation
Fallback	Domain Mastery

Business and Engineering Sources

Strategic Value Creation

Attributes of our Examples

- Drive Adoption
- Create Strategic Value
- Depend on Open Source
- Improvement over Proprietary Models

civitas

1. the body of citizens who constitute a state, especially a city-state, commonwealth, or the like.
2. citizenship, especially as imparting shared responsibility, a common purpose, and sense of community.

Value-Creation Sources

- Maturity
- Risk Abatement
- Enrichment
 - Simplifying Adoption Decisions with Net Present Value Comparisons
 - *Civitas*: Positive Acts
 - Total Factor Productivity
- Adaptation
 - Engineering Innovation
 - Required Visibility
- Domain Mastery
 - Systems Engineering
 - Experience in Applied Crypto



Building Your Big Data Future with Open Source

About PrimeKey Solutions AB

Security Domain Innovations for Engineering and Business

Public Key Infrastructure (PKI)

- PrimeKey Solutions Assure Authentic Interactions
- Complete Open-Source Implementation of a Certificate Authority
- Solutions Technology Innovator
- Solution Components:
 - EJBCA* – Open Source
 - SignServer – Open Source
 - PKI Security Core – Open-Source
 - Strategic, Mission-Critical Services

Texture

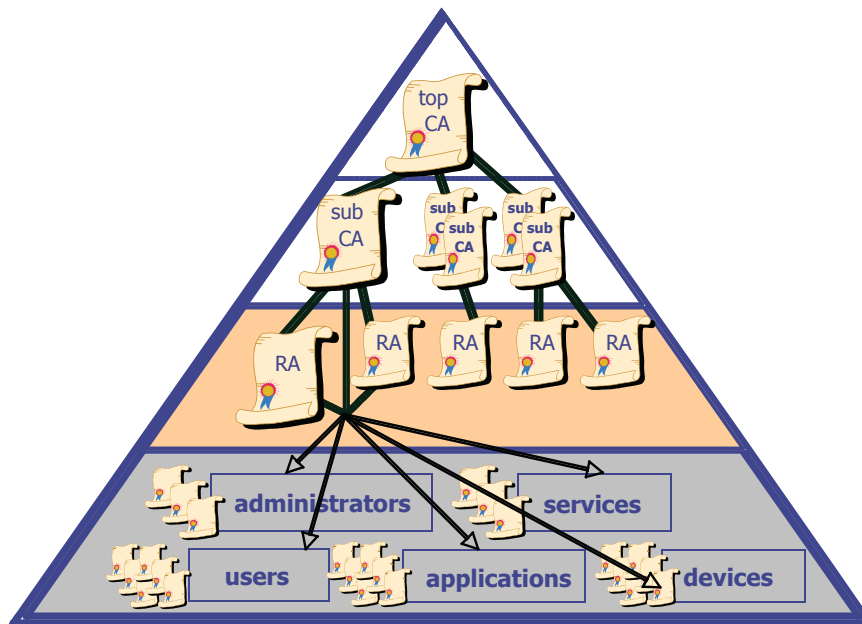
- Global Reach, from Sweden
- Founded in 2002
- Approaching 30 Global Headcount, plus Partner Network
- Strong Customer Retention
- Customers
 - Industry
 - Government
- Common Criteria Certification in Process

* Enterprise Java Beans Certificate Authority



What is PKI?

One-page course



- Based on asymmetric cryptography - each entity has the private and the public key.
- By managing certificates we manage entities' identity authenticity claims.
- By using certificates we get variety of services.

Open-Source Big Innovation

Strategic for Customers

A Snowball Accreting Value



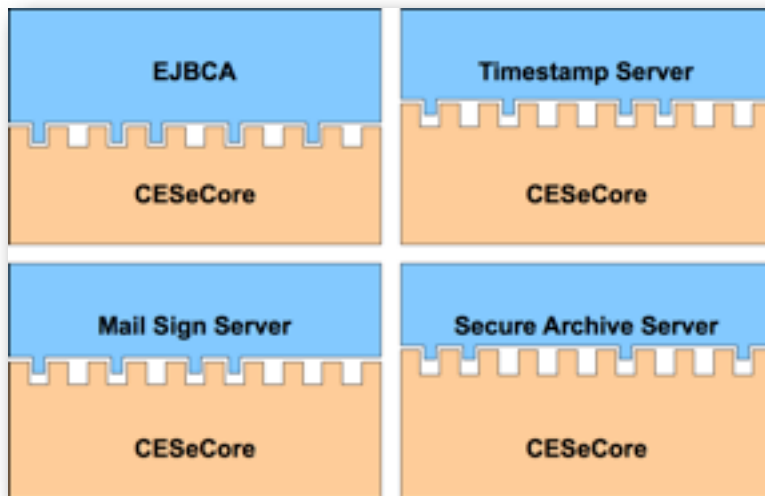
About Innovation

- Why Innovate?
 - To Create New Value for Customers
 - To Drive Adoption of your Open Source Offering
- Scope
 - Engineering
 - Business
- Metrics
 - Strategic Impact
 - Outcompetes Proprietary
 - Influences Customer Behaviors

Example, Innovation

Common Criteria certified Security Core - CESECORE

“Enable easier to create CC certified Open Source products”



core set of services:

- create electronic signatures
- validate electronic signatures
- create digital certificates and CRLs
- protect the integrity of data
- secure audit logs
- handle authentication and authorization
- handle key management

Join us!

Example, Innovation

Benefits from CESECORE, For Vendors

- Vendors of PKI-enabled applications:
 - certified core set of services increases reliability, through “inheritance”
 - simpler process of CC certification of such applications, if needed
 - focus on business aspects, relying on CCSeCore for PKI aspects
- Other solutions vendors:
 - easier to integrate with PKI applications
 - increased value proposition of the total offering
 - decreased development time & resources needed

Example, Innovation

Benefits from CESECORE, General public - users, customers

- CC certification - “formal” indication of quality
 - sometimes “must”-requirement (gov)
- combined with Open Source
 - peer review of source code - another indication of quality
 - alternative to proprietary solutions
 - lower costs (implementation, licenses, ownership)
- Java/JEE - multi platform,
- Academia - further research
- Co-financed by Eurostars programme





Building Your Big Data Future with Open Source

Examples of Service-Value Creation

Open Source for American Computer-Equipment Manufacturers

Fortune 500 PrimeKey Customer Anti-Counterfeit	Fortune 50 PrimeKey Customer Cloud Anti-Fraud
Factories	Cloud
Rejected In-House	Always In-House – Except PrimeKey
PrimeKey too Small?	Stringent References
Inbound: E-mail	Inbound: Phone
Two Months to Services	Same
Short Implementation: Travel to USA	Same

PrimeKey Mission-Critical Service Value Created	
Time to Profit Recovery ~\$50M/yr	Time to Authentic Transactions ~n\$B
No per-Use Fees	
Faster Maturity	
Strategic Barrier	
Strategic Consulting	

Maturity

A Value-Creation Source

Versailles: Precision Barrier



PrimeKey Services:
Fencing the Enterprise

Safe Corridor	→	Threat Channelled Away
Digital Barriers	→	Policy Automation
Countermeasures	→	Laser-Tuned

PrimeKey Maturity

Open-Source Code	Mellow
Processes	Continuously Improving
Services	Strategic

Maturity

A Source of Value Creation

Maturity for Open-Source Code

- Mellow
- Few Incidents to Support
- Short “To-Do” List
- No “Hot” items in To-Do List
- More Maturity Criteria:

Is the source code well-behaved when a user does something anomalous such as configuring `cmp.ra.caname` in `cmp.properties` with a value that names a certificate authority that does not exist?

Engineering Innovation for Solution Maturity

- Core PKI Role – No EJBCA
- Common Criteria Certification
- WS Calls, SOA, PKIaaS
- Security as an Afterthought
- On-Demand PKI Enrichment for Solutions: Get it Now
- Open Source Value Proposition
- Transparently Built In: Simpler

Risk Abatement

A New Kind of Value Creation in Services



“Unknown Unknown”

Open-Source Enabled

Quick Maturity with Openness →
a Service Shift:

Old: about Bug Traffic, Incidents

Now: Strategic **Barriers** to **Risk**

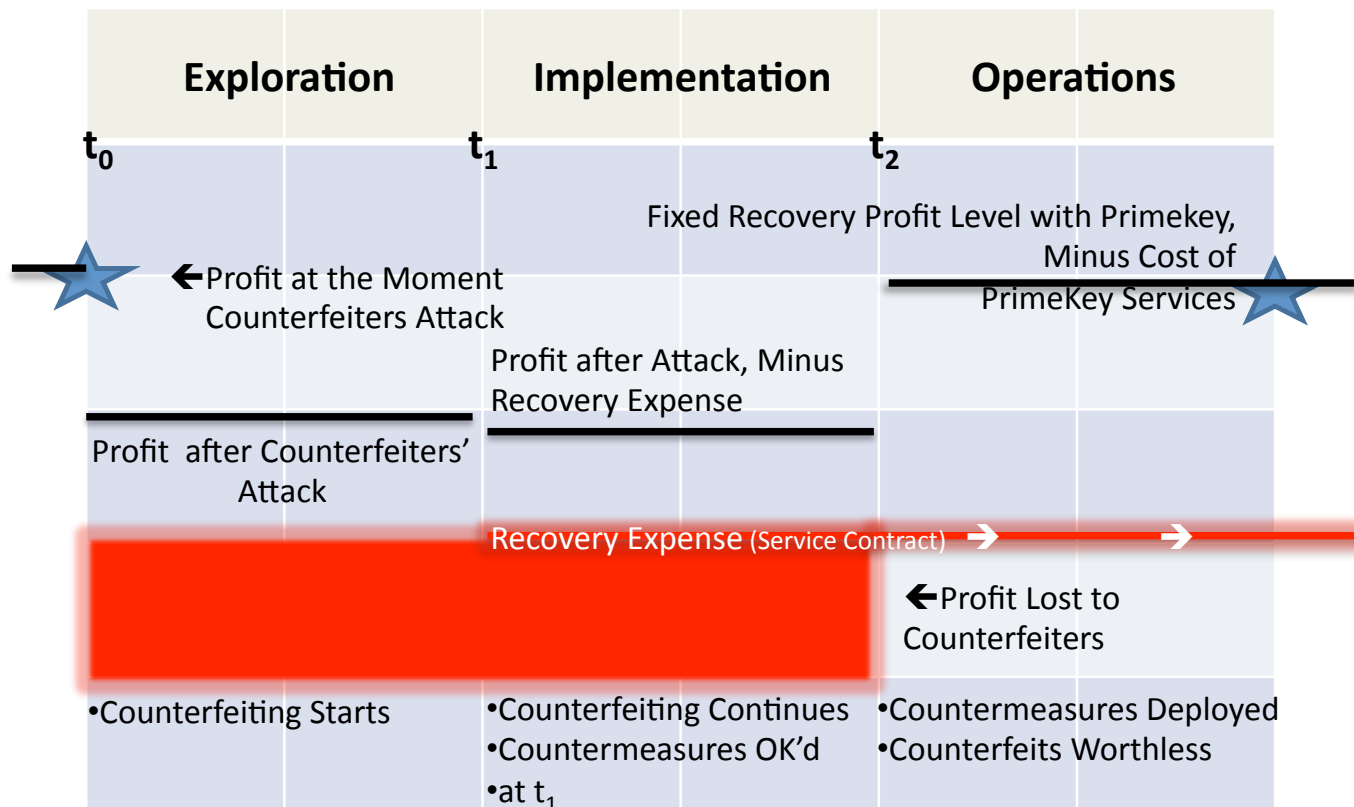
Service → Strategic Collaboration

Services Cut Mission-Critical Risks:

- Projects
- Brand
- Liability
- Safety
- Supply Chain
- Continuity
- Security, Data

Financial Enrichment

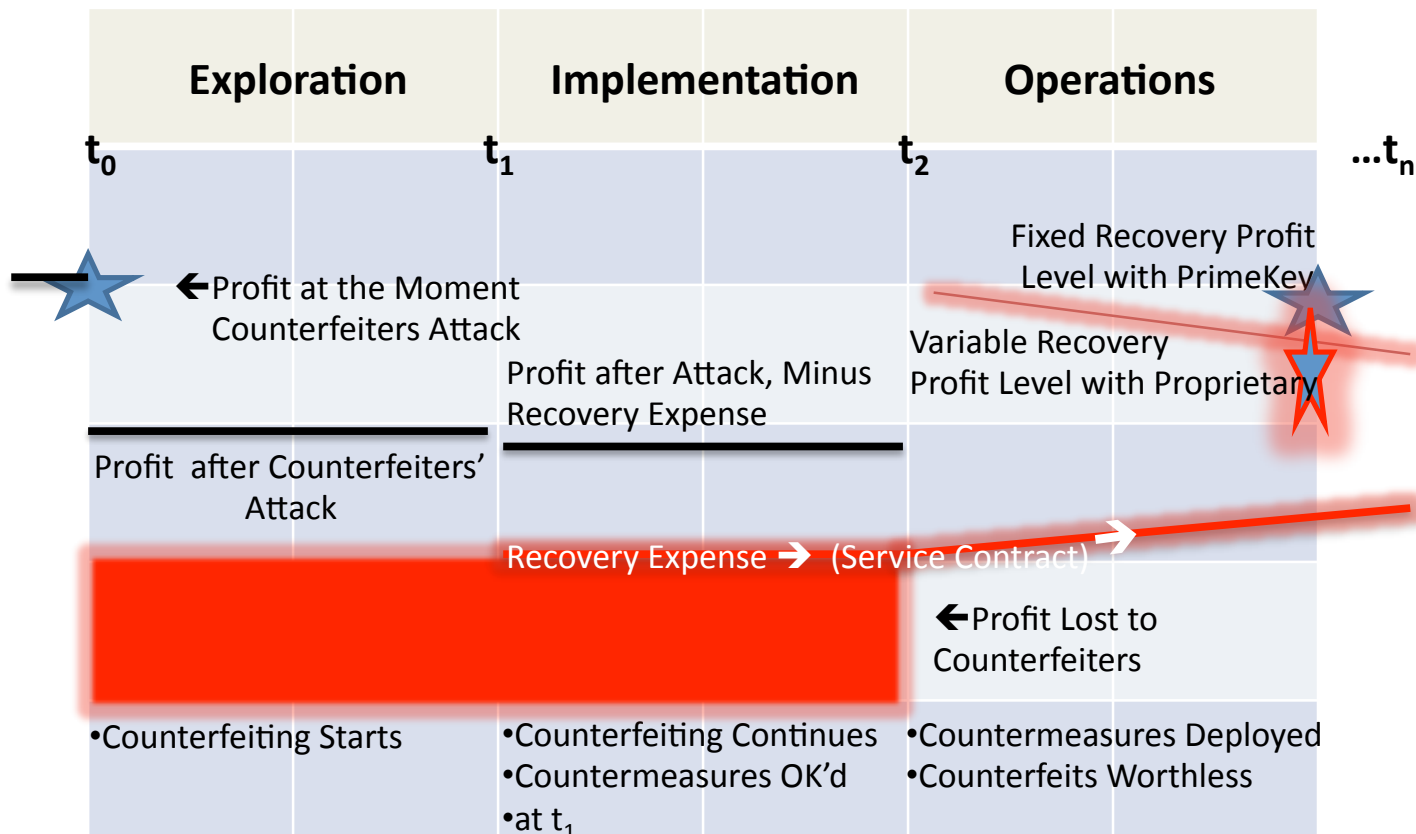
Profit Recovery from Counterfeiting – Open Source Vendor



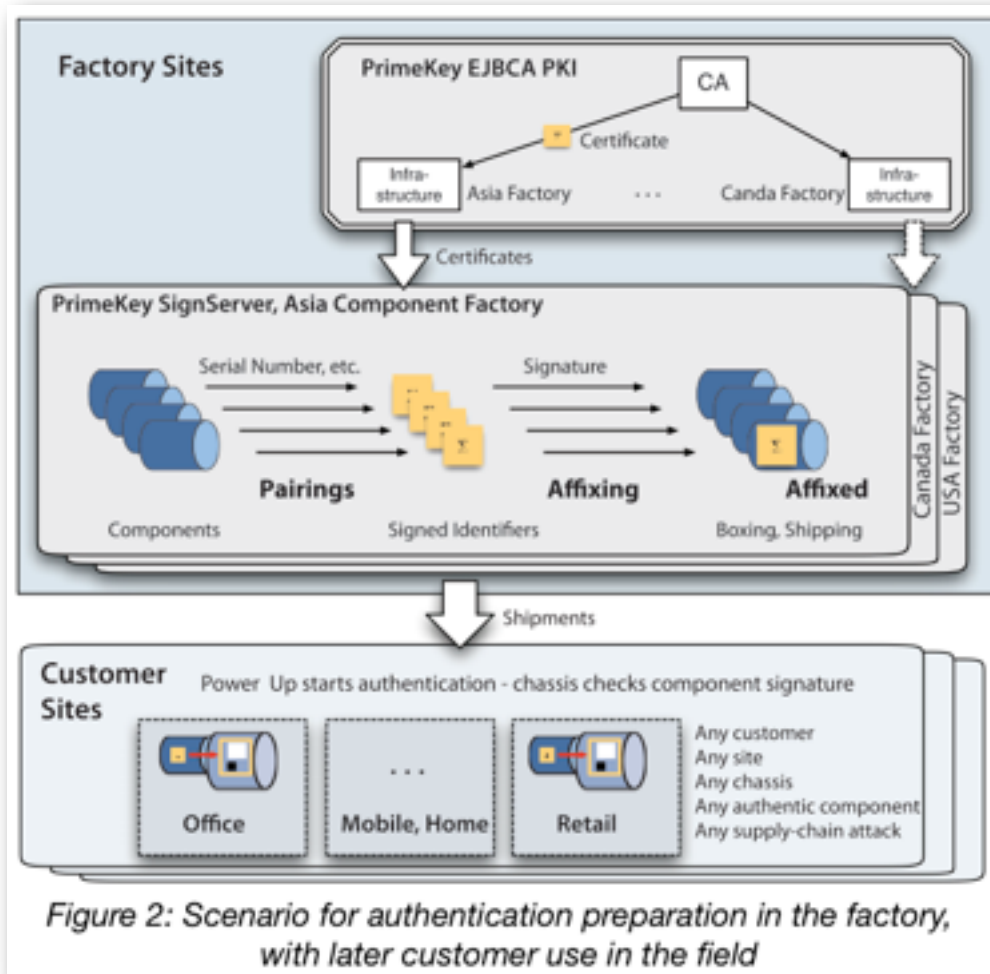
Not Drawn to Scale

Financial Enrichment

Profit Recovery from Counterfeiting – Proprietary Vendor



Financial Enrichment / Counterfeit



- Big Data
- Big Legal
?!

Financial Enrichment

Civitas

Agora at Izmir, Time of Alexander



Civitas: Positive Acts

PrimeKey Examples:

- The Open-Source Offer
- The Opening of the New PKI Security Core
- EJBCA Developer Conference
- eID & ePassport National Conference

Total Factor Productivity

A Free Lunch?

$$\text{Productivity} = \text{Capital} + \text{Labor} + r$$

r is the unaccounted-for variation, nearly as important as the other terms

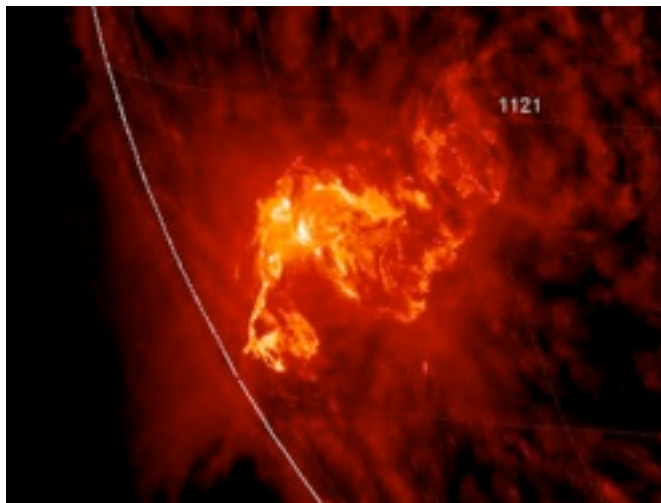
r is interpreted as productivity increases arising from management innovation

- PROPRIETARY SOFTWARE Customers Need to Budget Capital Outlays – No Free Lunch
- OPEN-SOURCE FREE RIDERS that Assign Inexpert Labor Get a Negative Lunch Due to Delays, Risks, and Costs in Human-Capital Development
- OPEN SOURCE WITH SERVICES Customers Need Only Nominal Adjustments to Current Budgets – the Free Lunch

Adaptation, Flexibility

A Value-Creation Source

Transparency: An X-Ray
View of Solar Dynamics



X-Ray Flare, M5.4-Class Eruption
Courtesy: Solar Dynamics Observatory

Transparency: A Security Requirement

- Proprietary Software is less appropriate for PKI
- Would a Prudent Consumer Prefer the Asserted Attributes of Proprietary PKI Software or the Visibility of Open-Source PKI Software?
- Is Open-Source Software the only Sensible Choice for Security Software?

Domain Mastery

Mastery Prepares Open-Source Vendors for Strategic Collaboration

A Scientific Framework for Domain Mastery:

- **Completeness**
- **Consistency**
- **Correctness**
- **Collaboration**
- *Civitas* - Missing from Science

Incidents Profile – after Domain Mastery

- Few Incidents – Mature Open Source
- Low Labor Effort
- High Knowledge, Readiness
- Many Mission Critical Issues
- Synchronized, Proactive

Fit for Strategic Collaboration?

Europe: Government Contractor

- Invisible Free Rider on PrimeKey
- Massive Extended Outage
- Irate – Wanted Free Fix
- Accused Us to Government
- Error was Firewall Edit

Asia: B2B/B2C Customer

- Factory Flooded
- All Systems Down
- Recovered Security
- Four-Hour SLA; Five Years Under Contract

North America: B2C Cloud Customer

- PrimeKey is the only vendor in five years to support a mission-critical project for this B-to-C PrimeKey customer.

Domain Mastery

Counterfeiting Case Study: Value Creation with PrimeKey Services

Table 2: Benefits of Countermeasures

Benefit Type	Description
Financial	<ul style="list-style-type: none"> • Tens of Millions of Dollars of Profits/Yr. • Repeat Business • Restored Pricing Power • New Process Data
To Customers	<ul style="list-style-type: none"> • Customer Satisfaction • Operations Continuity
Abatement of Strategic Risks	<ul style="list-style-type: none"> • Brand • Safety • Liability • Security • Maintenance • Distraction from Core Business

Table 3: Sources of Service Value

Service Type	Description
Exploratory Collaboration for Solution Composition	<ul style="list-style-type: none"> • Technical Feasibility • Uses Cases, Systems Engineerings • Business Issues, Processes • Strategic Project Planning • Detailed Project Planning
Implementation Collaboration in Solution Development	<ul style="list-style-type: none"> • Integration • Test • Implementation • Debut of Operations
Operations Collaboration toward Tactical and Strategic Objectives	<ul style="list-style-type: none"> • Factory-Operations Enablement • Strategic Threats Abatement: • Customer: <ul style="list-style-type: none"> ✓ Safety, Continuity • Manufacturer: <ul style="list-style-type: none"> ✓ Brand, Liability, Safety ✓ Operational Security ✓ Business Continuity ✓ Intelligence from PrimeKey

Sources of Value Destruction

Big Legal - how can Open Source providers help against destruction?

Company	Strategic Event	Impacts	Value-Creation Remedies
Amazon Cloud Services	Work Sent to Wrong Resources	Outage Customer Data Lost Brand Damaged	Maturity Systems Engineering – Automated Policies to Monitor Roles, Processes
Oracle IT Solutions	Fork of OpenOffice	Value Destruction for Users, Oracle, and Open Developers Brand Damaged	Civitas Strategic Services model of Financial Enrichment for Open Source
Sony Consumer	Personal User Data Stolen	Outage, Income Loss Customer Data Lost Brand Damaged	Expertise in the Security Domain Risk Abatement
National Government Public Services	An Open Source Free Rider Mistook Cause of Outage	Outage -- Weeks Tens of Millions of Lost Transactions	Risk Abatement – Free Rider on PrimeKey Open Source → PrimeKey Strategic Services
Comodo Security Infrastructure	Security Credentials Stolen	Quest for More Depth Brand Damaged IETF WG Formed	Civitas – Google Certificate Catalog Maturity – Add PrimeKey Strategic IV&V Service for Security Providers

Case on Legal

Swedish National Police Board (Swedish “FBI”)

Challenge

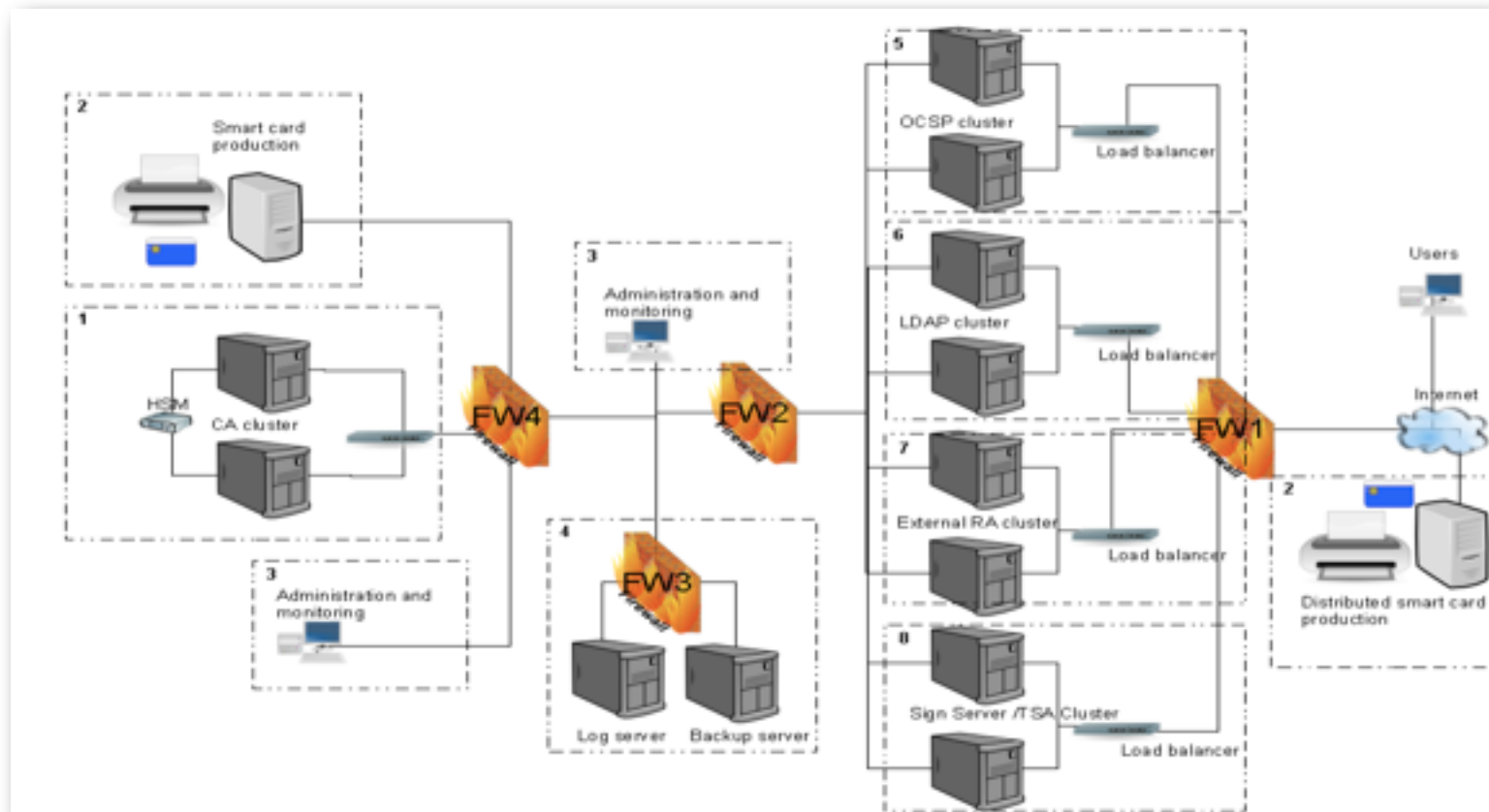
- Law & Regulations
 - ✓ Strong authentication
 - ✓ Authorization
 - ✓ Audit trails
- The Administrative view
 - 24*7*365 operations
 - User focus - keep it simple
- Organizational changes
 - Buyer-Supplier internal organization
 - Process oriented
 - Centralization of IT-staff



PKI and smart cards for 25000+ users,
240 IT personnel
7 in security

Case on Legal

Swedish National Police Board (Swedish “FBI”)



Innovating in order to Drive Open Source Adoption

3 millennia old product



- Civitas is the Sublime Ingredient of Value Creation
- Civitas Gives Voice to Collaboration Fitness
- Civitas Depends on each Kind of Value Creation

Innovating a New Locomotive to Drive Open Source Adoption



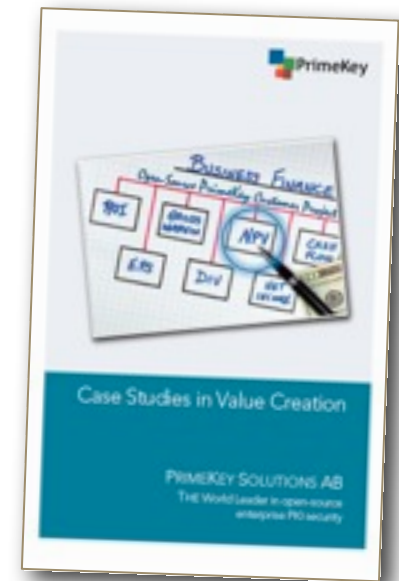
**Civitas, Citizenship
is about a Timeless Balance
between Open-Source Vendors'
Rights and Obligations**

- Their Discovery
- Their Standardization
- Their Bounds
- Their Maturity

How to contacts us?

Silver Sponsor at OSBC 2011

- Here at OSCB 2011:
 - Konstantin Papaxanthis, CEO; Admir Abdurahmanovic, VP
 - Tier 1 Vendor: SiO2 Corp; Charles Miedzinski, CEO
 - Tier 1 Vendor: Mirada Systems, Inc; Thomas Arkwright, CEO
- Get In-Depth Related PrimeKey Publication:
 - CASE STUDY: Stopping Manufacture of Counterfeit Computer Equipment
 - BUSINESS CASE: The View of the Decision-Maker, Focus on NPV
 - CASE STUDY: How PrimeKey Services Create New Strategic Value
 - CASE STUDY: BankID
- Visit www.primekey.se, or email sales@primekey.se





Thanks :-)

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