

Open Source: Community and Ambient Intelligence

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- | **ANCI = National Association of Municipalities**
- | **Ancitel**
 - | **ANCI as majority owner**
 - | **ANCI's technical branch**
- | **Major stake holder in national IT (e.g. eID)**
- | **Bridge between central and local government**

Open Source of the 3rd kind



- | **Many understandings of what open source is**
 - | **Something you use (free software)**
 - | **A software license**
 - | **A way of solving problems with the help of the community**

To Have or to Do

**freely adapted from Erich Fromm's
*To Have or To Be***

To Have



- | **Linux on Servers or even Desktops**
- | **Open Office**
- | **Open Source components and environments**
- | **...**
- | **Develop software in isolation and then release it under open source licence**

Nice, but limited benefit

To Do



Solving problems with the help of the community

- | **Amplify ones limited resources**
- | **Access to: (ambient intelligence)**
 - | **Knowledge, expertese**
 - | **Ample experience**
 - | **Vision** (not limited to software)
- | **Know-how is often the key to success**
Quality, elegance, efficiency, security

Case Study

- | **Pilot Project of the Italian eID** (consultant at municipality)
- | **Municipality in role of user**
 - | **No resources for development**
- | **Technology Provider**
 - | **Delivers eID Access Control System**

Relax and enjoy ..but..

***Life is what happens to you
while you're busy making other plans***

(J ohn Lennon)

An Indecent Proposition



The Yearly Tax (license)

all software was copyrighted by the Ministry

except for a small, but critical, component (needed by citizens)

pre-existing to the project, hence proprietary

Further:

- ! **Mono-platform**
- ! **Not standard**
- ! **Mono Smart Card** (by law, administrations need to support two)
- ! **Technology Specific** (only Java, several technologies in use)

No Way! Let's roll our own



- | Getting married is a serious matter and you had better be very sure..**
 - ..and this also applies to Technology Providers**
- | Who rejects married life has to do his own cooking, washing, ironing, and..**
 - ..development of an eID Access Control Syst.**

Complaining about others is much easier than living up to one's own demanding standards

How to get yourself in trouble: **Swim or Sink**

We had a real problem:

- | Security !!!**
- | Quality**
- | Small and elegant**
- | Long term sustainable**

- | Lack of Resources**
- | Lack of Knowhow and experience**

Required Human Resources



- **Security Expert:** (crypto, attack scenarios, ..)
- **Smart Card Expert:** (CSP, PKCS#11, APDU ..)
- **PKI Expert:** (Revocation Lists / OCSP, ...)
- **Apache Expert:** (handler, processing stages)
- **Tomcat Expert:** (authenticator...)

***even large Corporates have difficulties to get these resources,
let alone a municipality!***

Community -- the Solution to the Problem

Break out of isolation:

the only thing worse than facing tough challenges is facing them alone.

Amplify your Knowledge

No matter how smart we are, our knowledge is always limited

To reach beyond our limits, we need to collaborate with others

Open Source is a skill to collaborate with people who are not on your payroll

Act Locally, Think Globally

- Success often lies in breaking out of ones barriers and reaching beyond

- Too often we stick with our own kind (lack of diversity)

 - Local gov. sticks with local gov...

 - Collaboration restricted to owns province/region

- We need to extend our Networks:

 - International Open Source Community

 - OpenSC, OpenSSL, Apache mod-Python, ...

 - International eID Community

 - Porvoo Group

 - Architect of the Belgium Solution

Conceive it Big but keep it Simple

- Complexity in Informatics is fashionable
- Open Source seems more resistant to this disease
- Only *simple* solutions can be *secure*
- Only *simple* things are *feasible* for who lacks resources

Reuse - Don't re-invent the wheel



The easiest way of keeping it simple is to avoid doing anything:

- **Reuse requires access to the knowledge behind the software (the community)**
- **Reuse without open source licensing is often problematic**

■ **Our system is an extension of the Belgian system**

■ **The Belgian system is an extension of Apache**

■ **Our system is available for reuse on OSOR**

Hands off - it has to be Secure!

- ! Attacks are very intelligent and subtle
- ! Threat scenarios are constantly evolving (security is difficult)
- ! Development of Security SW requires:
 - ! A different skill set from normal software engineering
 - ! Secure design, public review, rigorous testing

**For most, the development of security software
is out of the reach**

**Open Source offers mature and massively reviewed/tested
security components for reuse**

Conclusions from Case Study



Open Source:

- big potential to empower the little
e.g., municipalities

Doing it the Open Source way:

- Knowledge, experience, vision from community
- Amplify resources
- Quality and Security

How to Replicate the Experience

- Existing Project
- Existing Funding
- Foster and promote the necessary skill:
 - Use a “champion” who already has the necessary collaboration skill
 - Add staff who learn by doing

Open Source adoption: Two paradigms



Horizontal

Migration to free sw

- whole organization
- top-level decision
- large scale
- leap adoption
- high risk

Vertical

Trial in limited area

- one area of opportunity
- technical decision
- small / limited
- gradual adoption
- low risk

Critical Issues

Communication skills:

- English
- e-mail lists (collab beyond software)

Additional Scrutiny:

- Discussions on public lists
- Everyone sees and evaluates code

Willingness to contribute own products

- Not an issue for public administrations

Conclusions

Open Source is something we need

- ! **Lack of resources / knowledge**
- ! **Need to be more efficient**
- ! **Need to be internationally competitive**

Easy to replicate

- ! **Pragmatic, Low-risk approach**
- ! **Small experiment, expand it based on growing confidence**
- ! **Use a gradual, opportunistic approach**

Contact



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