Agora Virtual
e-learning federated by design

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TERENA EuroCAMP
Dubrovnik
November 15th 2007

Outline

1 **Motivation**

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1. **Motivation**

2. **Foundations**

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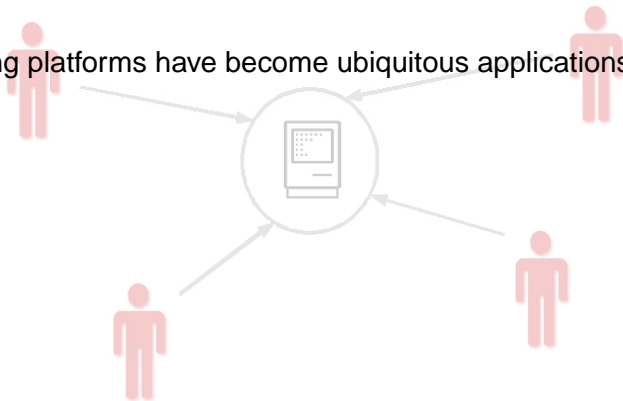
3. **Implementation**

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1. **Motivation**

2. **Foundations**

3. **Implementation**

4. **Perspectives**

Why a federated model for e-learning?
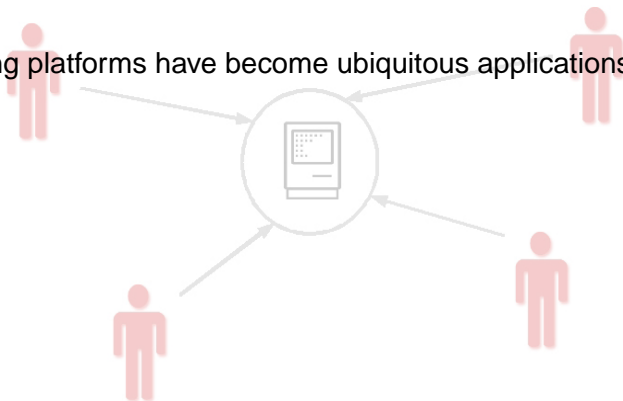The failure of the monolithic application

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Why a federated model for e-learning?
The failure of the monolithic application

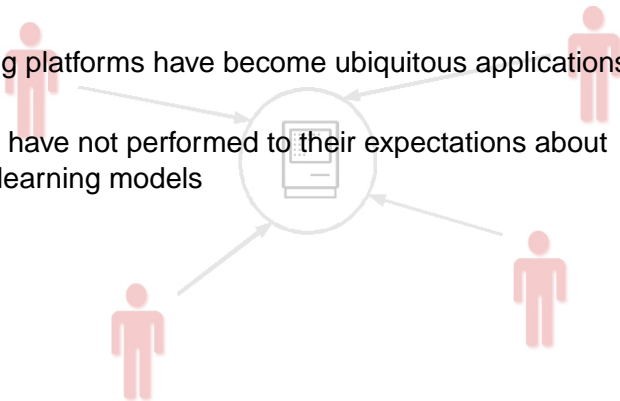e-Learning platforms have become ubiquitous applications but. . .

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- Does it make sense to speak of "constructivist" platforms?

Why a federated model for e-learning?
A user centered approach

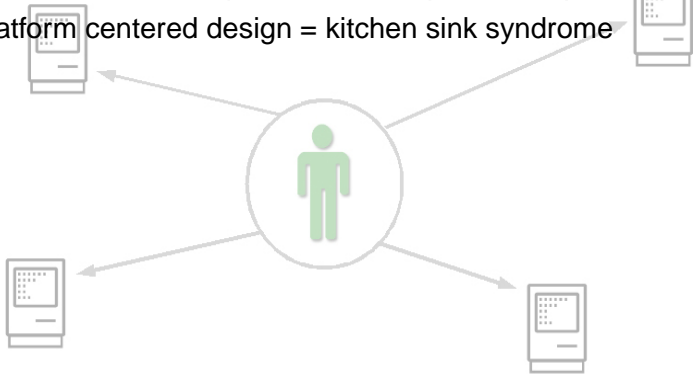New uses of *The Net* require new concepts for the platforms
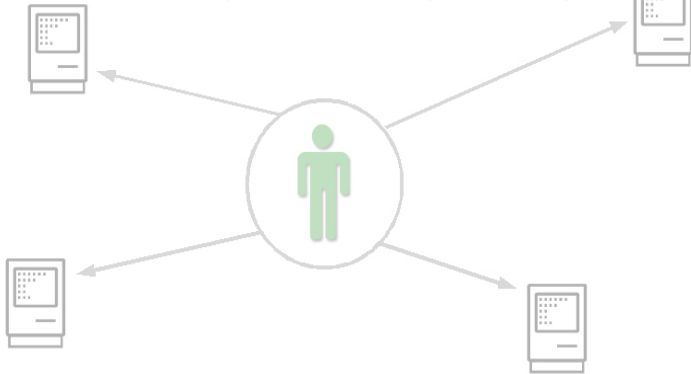
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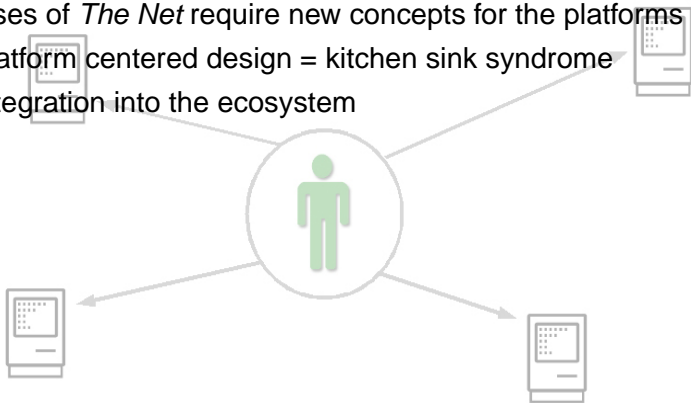
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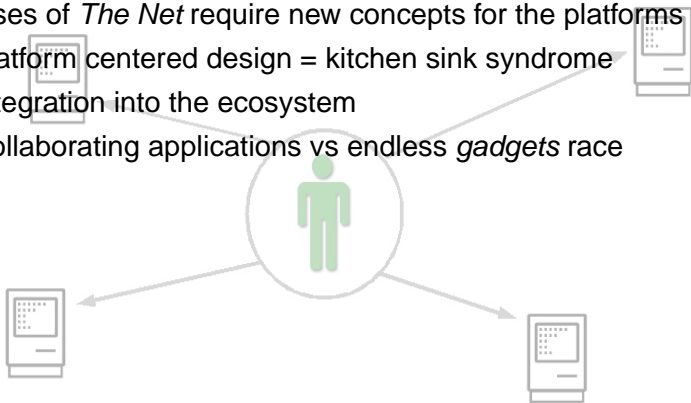- Integration into the ecosystem
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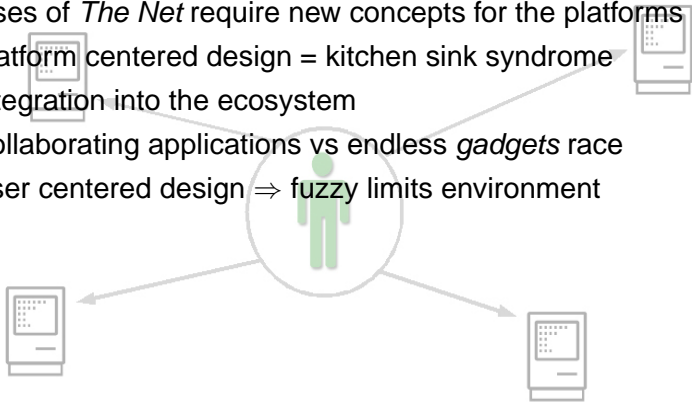- Collaborating applications vs endless *gadgets* race
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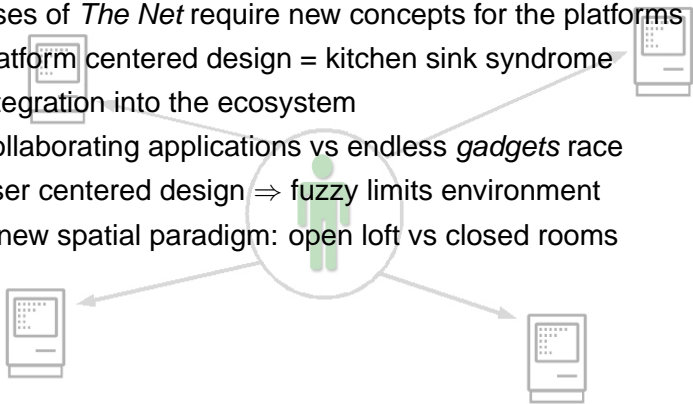- User centered design $\Rightarrow$ fuzzy limits environment
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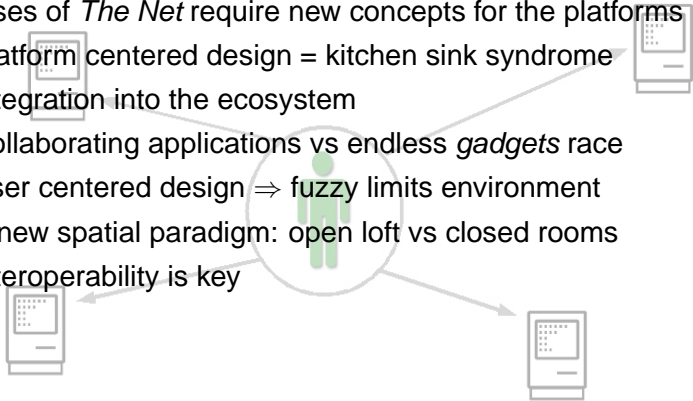- A new spatial paradigm: open loft vs closed rooms
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  *Interoperability is the degree to which a provider and
  a consumer can succesfully interface having never met*

  Coppeto, T.: Introduction To OSID V3 for developers

Materials for building a new platform
Available technologies for collaborating applications

We need some basic tools to transform the flat into a loft

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- Platform

Agora Virtual 1.0 → 5.0

- Test bed for new approaches
- Two years in use for postgraduate courses and international research projects
- Some degree of interoperability since v1: Jabber server, authN OSID, Google Maps API. . .
- . . . but other tools remain in traditional form

Materials for building a new platform
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- Platform
- Interoperability

OKI OSIDs
(Open Knoledge Initiative Open Service Interface Definitions)

- Specifications describing comunications between components of a software environment
- Service oriented architecture
- Interoperability as main goal (even better in v3)

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Harmoni framework

- Led by the Curricular Technologies Group at Middlebury College
- PHP implementation of OSID v2 (v3 is on its way)
- Rapid development and easy maintenance of curricular IT projects

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- Platform
- Interoperability
- Identity

phpPoA → PAPI

- Easy to deploy
- PHP support
- Widely used in our context

The simplest and easiest way to put SSO

into PHP applications

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SimpleSAMLphp

SAML	$\Rightarrow$	federations
simple	$\Rightarrow$	easy to integrate
php	$\Rightarrow$	*our* language

In all:
  a clever SAML 2 SP and IdP implementation
or
  the simplest and easiest way to get
  PHP applications into SAML 2 federations

Evolving the platform
Starting point: Agora virtual v4

Evolving the platform
The Harmoni framework
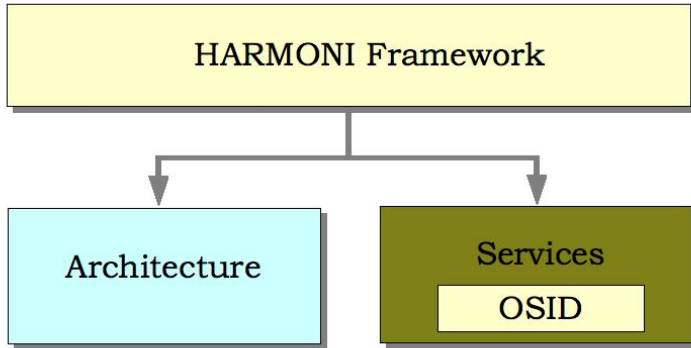
Evolving the platform
The Harmoni architecture

HTTP Request

Controller

LoginHandler → Authentication

ActionHandler → Modules → Actions

ThemeHandler ← Actions ← Actions

HTML Output

Other Harmoni Services
- File Storage
- MetaData Storage
- DB Access
- ...
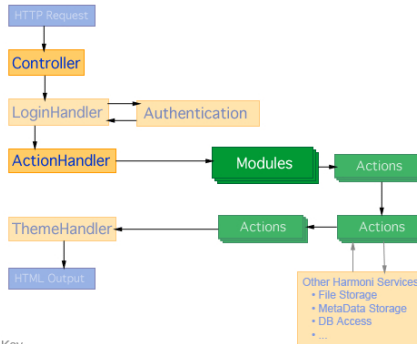
Key

Orange boxes = indicate parts of the Harmoni Project (faded boxes indicate optional modules)
Green boxes = program-specific code, the code you write
→ = program execution flow
Blue boxes = HTTP data flow

Evolving the platform
End point: Agora virtual v5 redesigned architecture

Evolving the platform
The new AuthN architecture

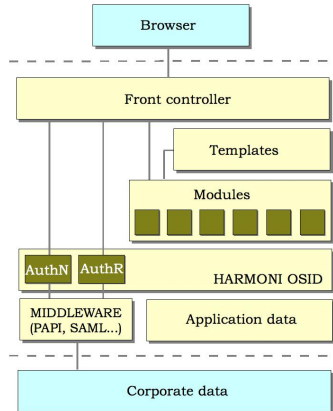APPLICATION ◄──► SSO INFRASTRUCTURE

SP ◄──► IdP

| OSID
isUserAuthenticated() | phpPoA
check_Access() | GPoA
(Assertion) | Login
LDAP, Radius |

SAML 2.0
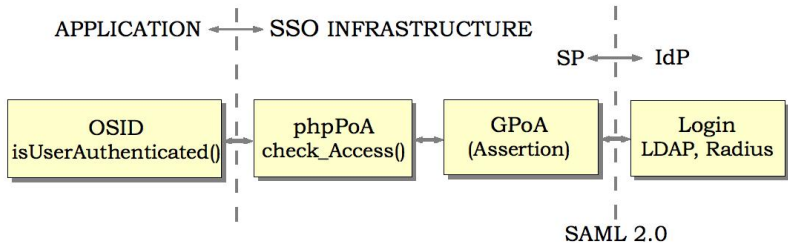
Evolving the platform
The new AuthN process
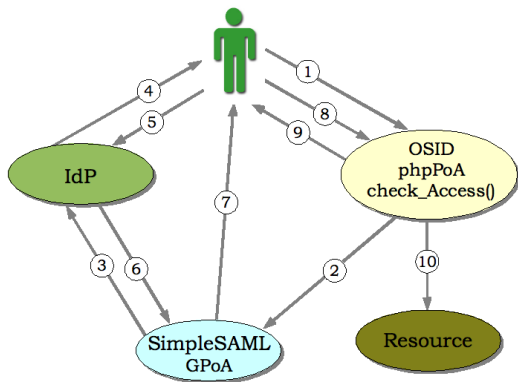
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Thinking out of the box

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Thinking out of the box

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- One SimpleSAML GPoA is able to
  manage several applications
- There is no need for having
  distinct SPs for each application

Possible uses
Choosing the best approach for each case

An institution could opt for . . .

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- Developing its own OSID implementation

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- Use this SimpleSAML GPoA setup with other phpPoA enabled applications
- Get an alternate GPoA for other authentication mechanism (e.g.: basic auth)
- Use this model against a SimpleSAML IdP just choosing the adequate plugin
- Even writing a PAPI plugin for SimpleSAML authentication against PAPI

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- User centered implies being identity centered
- Applications need to collaborate themselves in order to help the user

Pointers

Application	:	http://agoravirtual.es/
Harmoni framework	:	http://harmoni.sourceforge.net/
O.K.I.	:	http://www.okiproject.org/
Technical knowledge	:	accino@uma.es
Domain knowledge	:	mcebrian@uma.es
"Marketing"	:	victoriano@uma.es