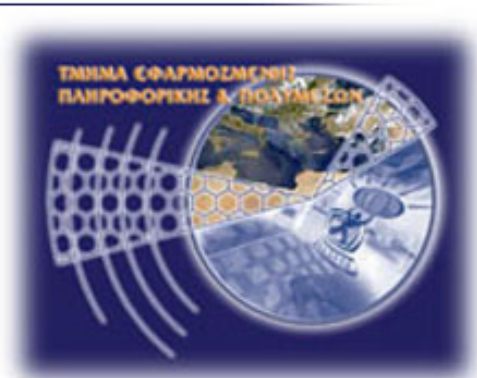


*Computer-supported  
informal learning in an  
electronic village of local  
interest*



**ΤΜΗΜΑ  
ΕΦΑΡΜΟΣΜΕΝΗΣ  
ΠΛΗΡΟΦΟΡΙΚΗΣ  
& ΠΟΛΥΜΕΣΩΝ**

Akoumianakis D., Kotsalis D., Vellis G., Milolidakis G.,  
Vidakis N.



Dept. Applied Information Technology & Multimedia  
Technological Education Institution of Crete,  
Stavromenos 715 00 Heraklion – Crete, GREECE



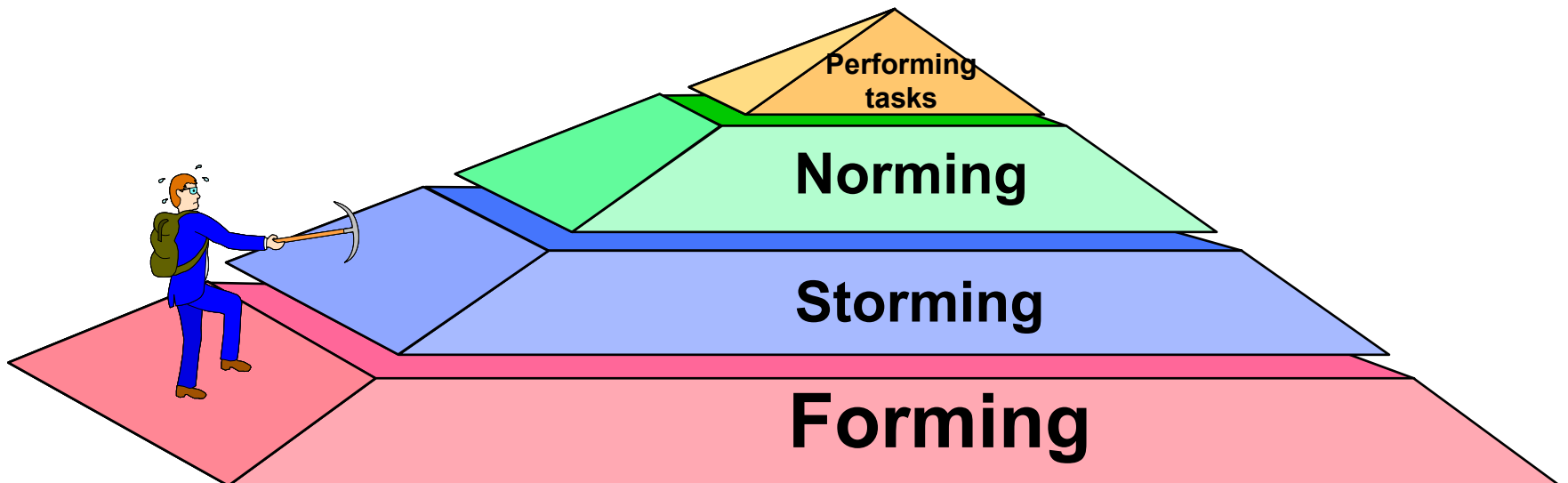
# Overview

- The issue under investigation
  - ▣ Learning in small communities of practice
    - Implicit learning by
      - Sharing data
      - Collaborative construction of artifacts
      - Social negotiation
  - ▣ Learning roles
    - Moderating
      - Inviting participation
      - Mentoring
      - Guiding, etc
    - Participating
      - Expressing opinion
      - Contributing, etc



# *Theoretical links*

- Learning by doing
  - ❖ Doing = Collaborative construction of domain-specific artifacts which require negotiation and agreement
- Learning process
  - ❖ Sharing knowledge codified into artifacts (description, rationale, supporting materials, etc)
  - ❖ Achieving competence levels





# eKoNES

## ■ An electronic village of local interest

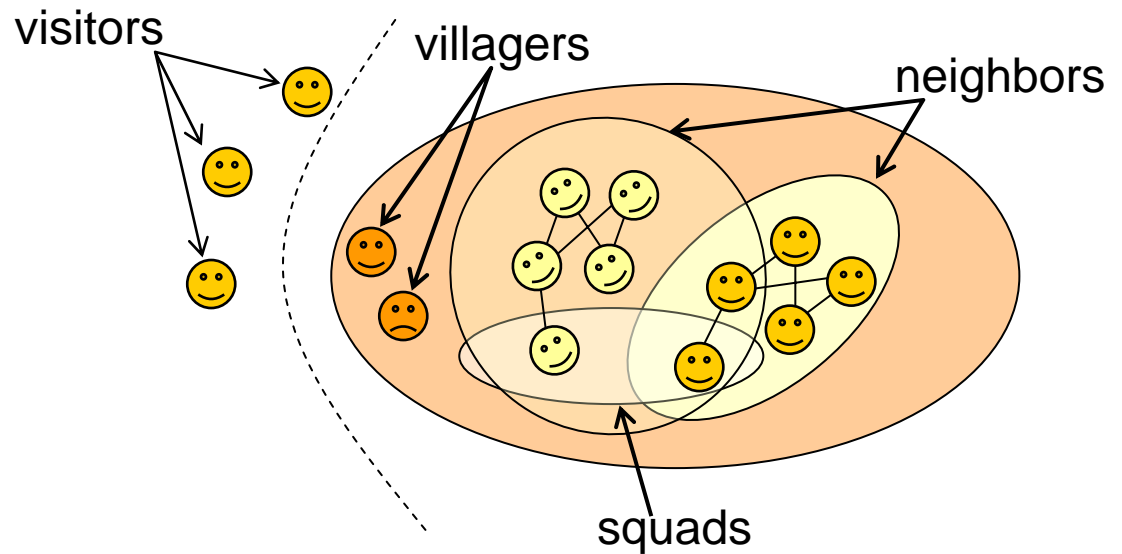
The screenshot shows the eKoNES website interface. At the top, there is a banner with the eKoNES logo and a background image of a village. Below the banner is a navigation menu with links: eKoNES Village, Village's News, Message Board, Activities, The Project, and Contact Us. The main content area is divided into several sections:

- eKoNES Village**: A sidebar menu with links for Community, Neighbourhoods, Village Mail, and Visitors. The Neighbourhoods section lists: Entertainment, Food and Beverage, Accomodation, Transportation, Antiquities, Sightseings, and Activibes.
- Analog Clock**: A digital clock showing the time as approximately 10:10.
- Language**: A section with flags for the United States and Greece.
- Neighbourhoods**: A main content section with a title and two paragraphs of text in Greek, followed by a bulleted list of activities.
- Calendar**: A section with a navigation bar (Summary, Day, Week, Month, Year, Events) and a calendar grid for July 3, 2007. The grid shows days 1 through 14. To the right of the calendar is a message box: "There are no events on this day."
- Advertisement**: A banner for "Απεριόριστο internet και τηλέφωνο μαζί" (Unlimited internet and phone together) with a price of "μόνο με 39,9€/μήνα" (only with 39.9€/month) and the logo for "forthnet2play".



# *eKoNES squads*

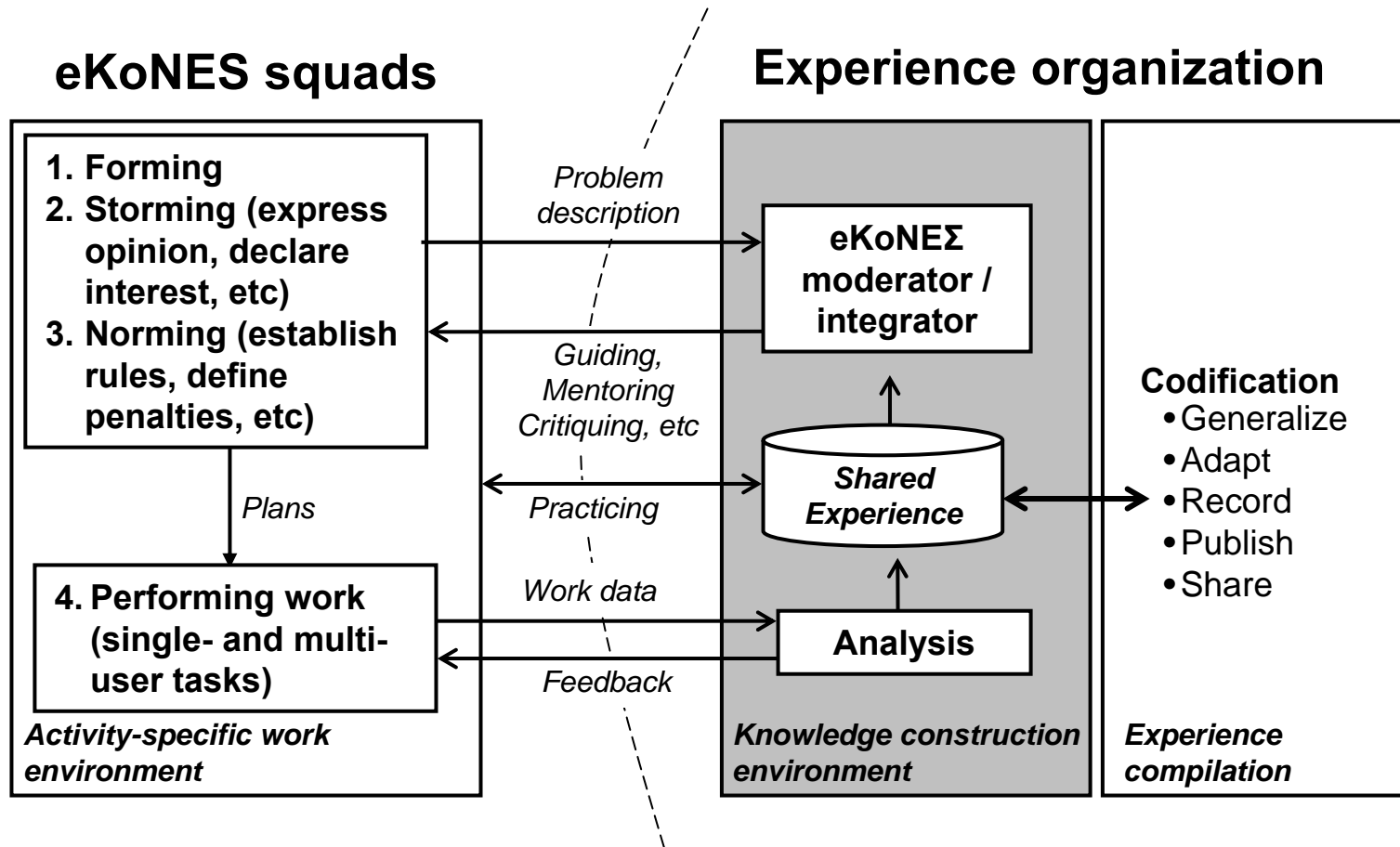
- Virtual teams working on an agenda
  - ▣ Agenda = work package
- Social nature of work
  - ▣ developing
  - ▣ negotiating
  - ▣ executing
- Stages
  - ▣ Forming
  - ▣ Storming
  - ▣ Norming
  - ▣ Performing





# *eKoNEΣ – A social experience factory*

## ■ Factory set-up





# Type of engineering problems

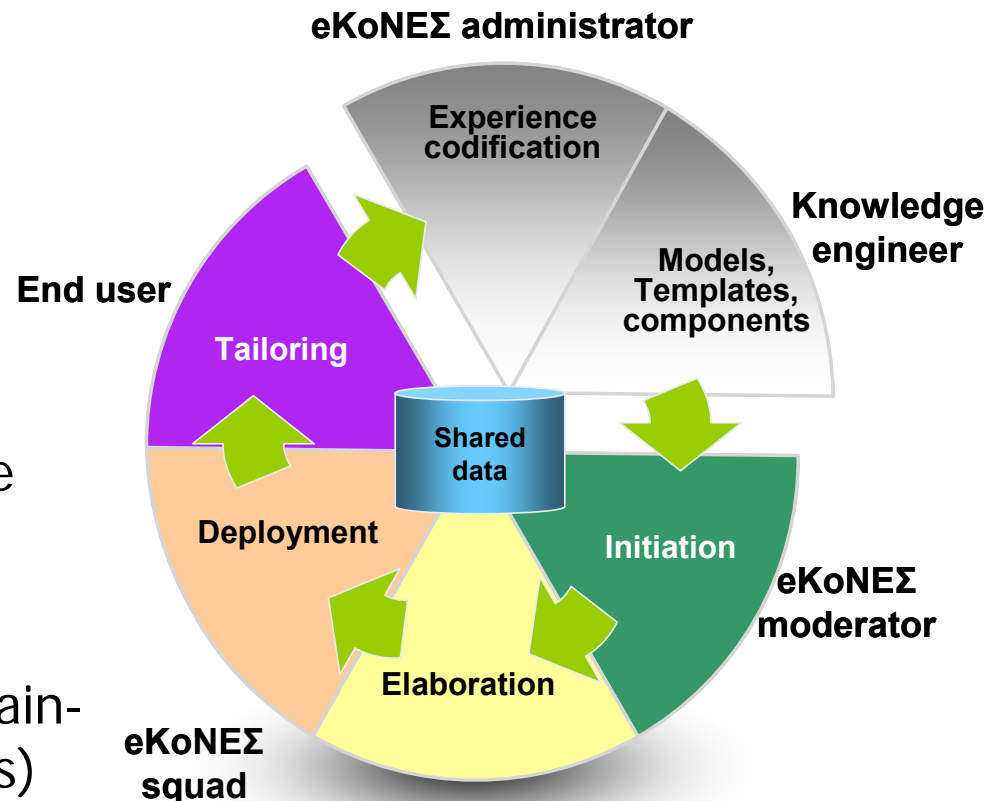
- Planning and constructing
  - ... a five-day tour around the island of Crete
  - ... cultural events taking place in a period of time
  - ... a conference plan

- by

- Assembling components (reuse)
- Making proposals
- Negotiating issues
- Ranking alternatives
- Packaging / codifying the final outcome

- using

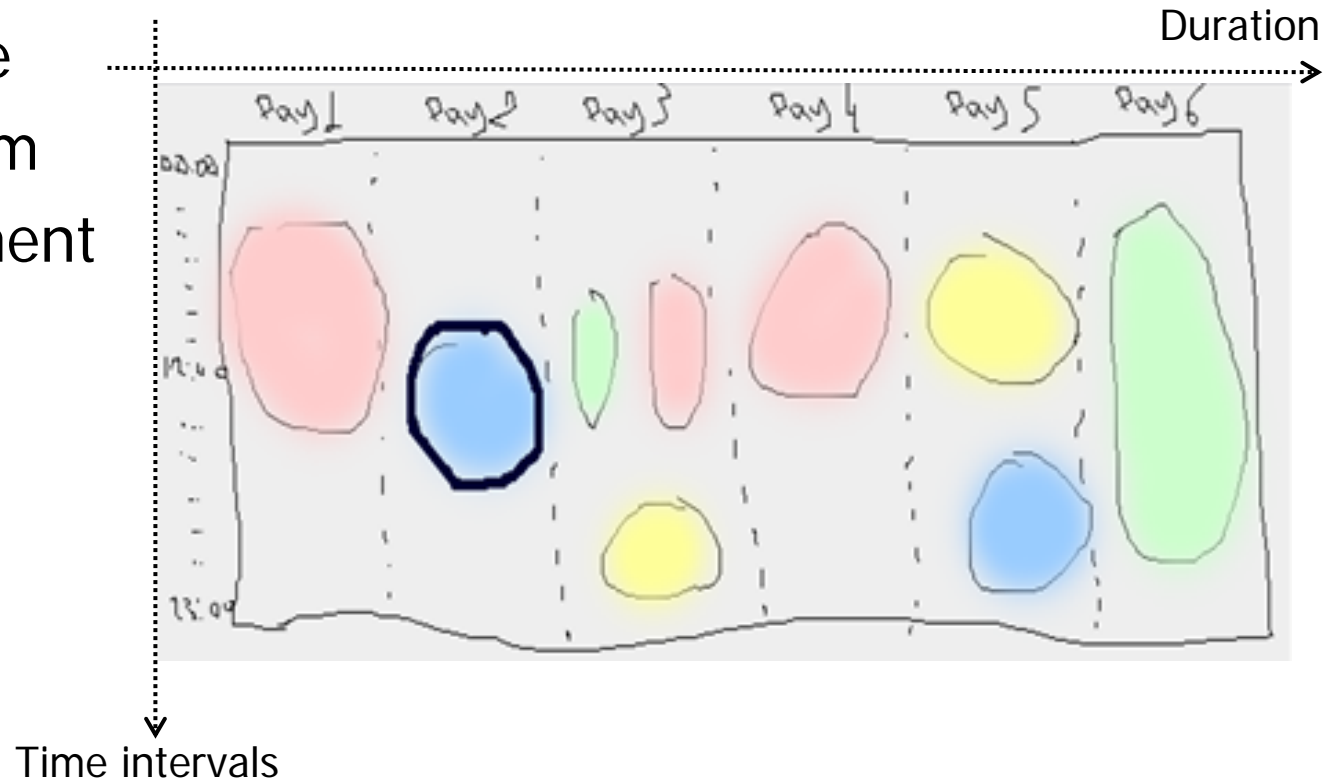
- Collaborative tools (domain-specific design languages)





# Visualizing collaborative artifacts

- Structural characteristics
  - ▣ Containment types
- Temporal characteristics
  - ▣ Sequence
  - ▣ Parallelism
  - ▣ Containment







# Interaction metaphor

- A collaborative artifact

The screenshot displays the 'Business Partners Console' interface. On the left, a hand-drawn diagram shows four phases labeled 'Day 1' through 'Day 4'. Each phase contains colored shapes representing activities: Day 1 has a large red shape; Day 2 has a blue shape; Day 3 has a green and a yellow shape; Day 4 has a red shape. Below the diagram are sections for 'Selected Activity' (with fields for Start DateTime, End DateTime, and Categories) and 'My Parameters' (with fields for Committed and Price/Person).

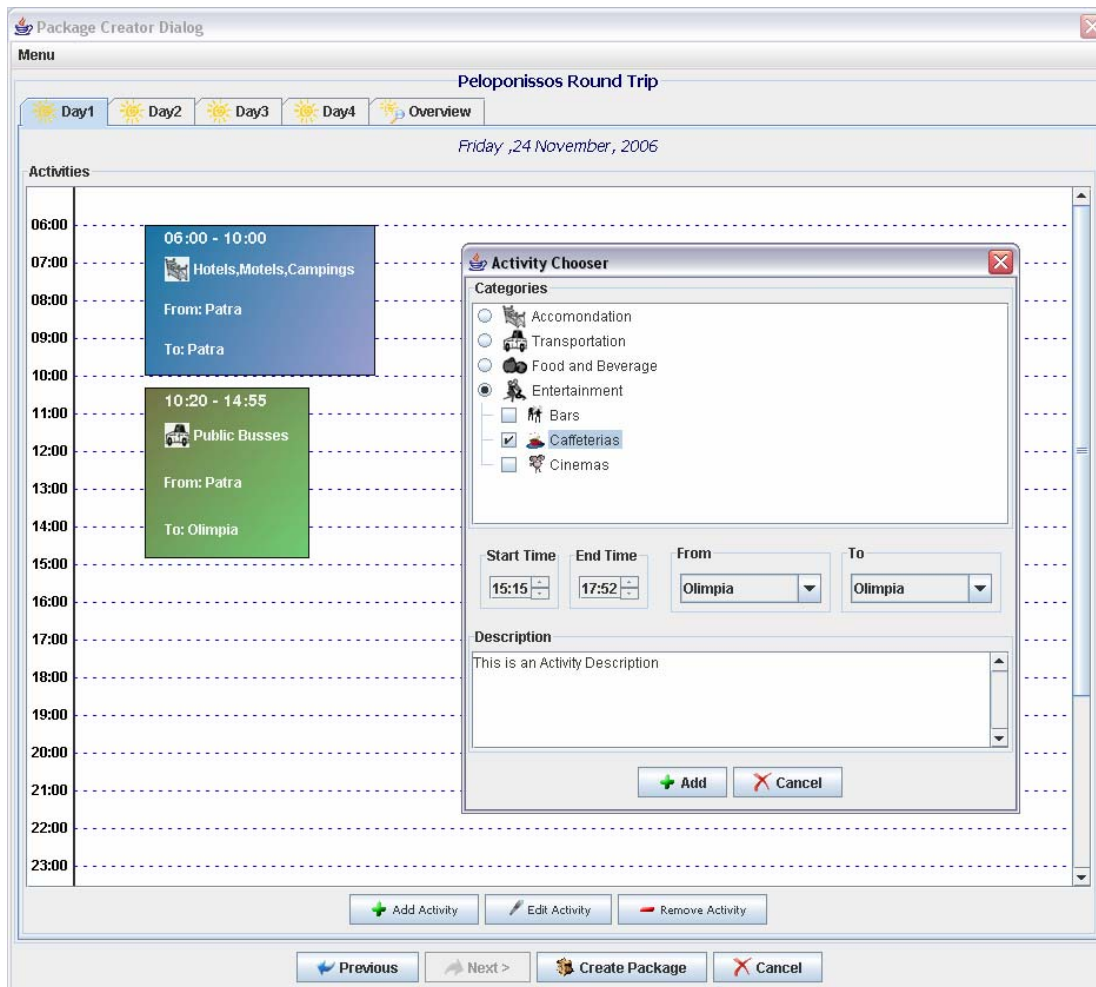
On the right, a detailed activity schedule for the 'Peloponisos Round Trip' is shown. The schedule is organized by day (Thu 25/Jan/07, Fri 26/Jan/07, Sat 27/Jan/07) and time slots. Activities are represented by colored blocks with icons and text:

Day	Time Slot	Activity	From	To
Thu 25/Jan/07	10:19 - 15:19	Hotels, Motels, Camping	Patra	Patra
Thu 25/Jan/07	15:51 - 20:30	Taverns, Fast Foods	Kalamata	Kalamata
Thu 25/Jan/07	21:00 - 23:59	Taverns, Fast Foods	Korinthos	Korinthos
Fri 26/Jan/07	17:22 - 20:30	Bars, Cafeterias, Ciner	Patra	Patra
Sat 27/Jan/07	09:00 - 12:46	Hotels, Motels, Camping	Patra	Patra
Sat 27/Jan/07	13:15 - 17:46	Taverns, Fast Foods	Patra	Patra
Sat 27/Jan/07	18:00 - 23:46	Bars, Cafeterias, Ciner	Patra	Patra



# Constructing artifacts

## ■ Domain-oriented tools



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# Negotiating artifacts

- Deciding what is subject to synchronous collaboration

admin-CollaborationJI, Welcome CollaborationAdmin!

Collaborative Work Space

Collaboration Controls

Business Partner Console

Community Thessaly Tour

Overview Selected Activity

Activity Parameters

Messageboard

Initialization Parameters

working..

Select categories for the new session

- Larisa
- Peloponissos Round Trip
- Hotels
- Motel
- Camping
- Taverns
- Fast Foods
- Bars
- Caffeterias
- Cinemas
- Public Busses
- Rent A Car
- Crete Exploration
- Thes/niki-Chalkidiki
- Thesaly Round Trip

Select package's stage:

Elaboration Stage

Engage Cancel



# Negotiating artifacts

## ■ Role-based views

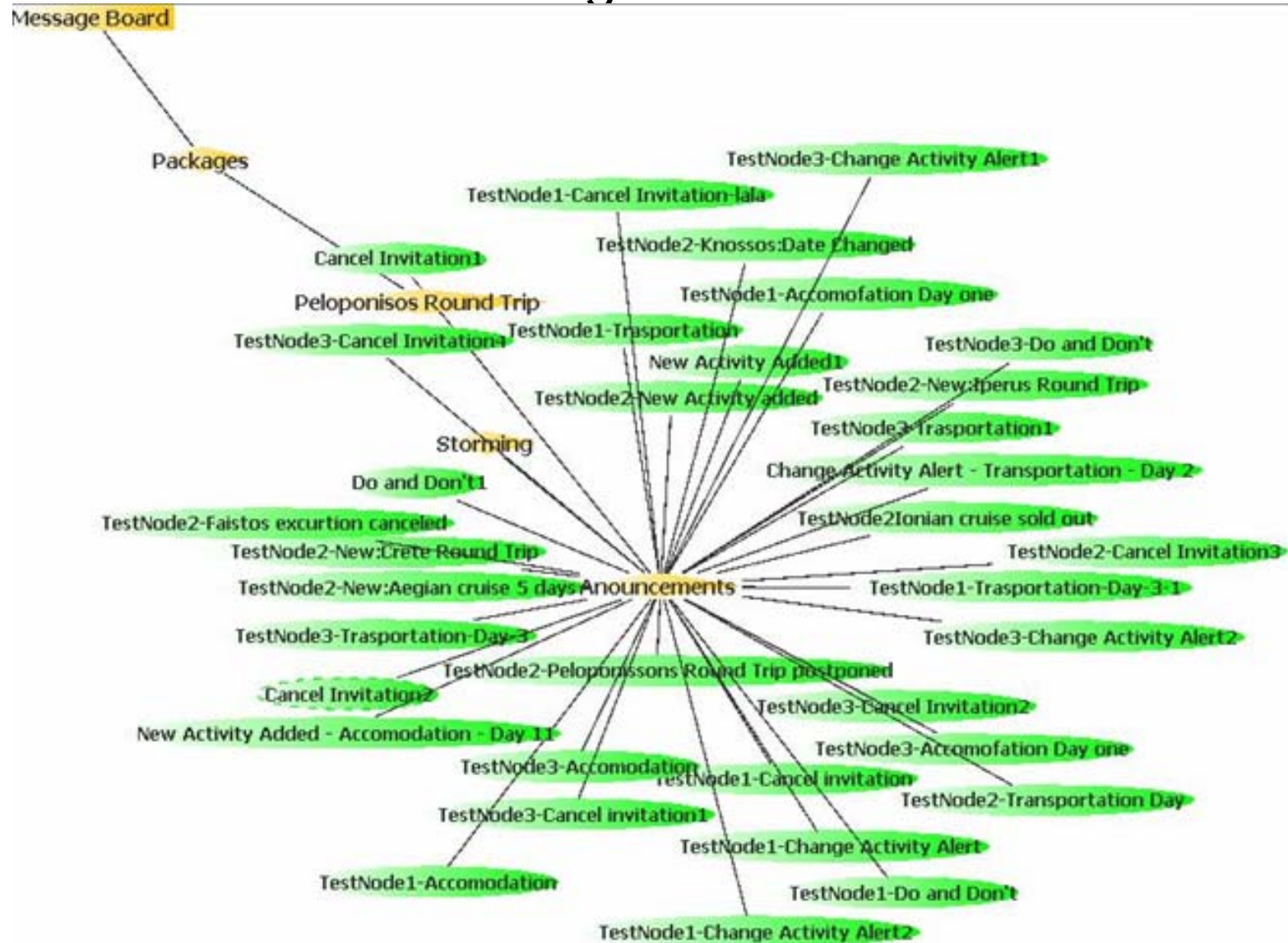
The screenshot displays the admin-CollaborationUI interface, which is divided into several panels:

- admin-CollaborationUI, Welcome CollaborationAdmin!**: The main window title.
- Menu**: A vertical sidebar on the left with zoom controls (Cat Zoom, Day Zoom, Hour Zoom) and a status indicator "Status: Connected."
- Collaborative Work Space**: A central grid showing activities for three days (Day 1, Day 2, Day 3) across five categories: Food and Beverage, Entertainment, Transportation, Accommodation, and another Accommodation. Activities are represented by colored blocks with details like time, location, and source/destination.
- Collaboration Controls**: A panel on the right with buttons for "Engage A Collaborative Session", "Release Floor Control", "Save Job", and "Cancel Job". It also shows "Java Collaborative Toolkit" and "Collaborative Sessions With their Running participants".
- Business Partner Console**: A window in the foreground showing a "Community" view with a "Thessaly Tour" selected. It displays a detailed activity schedule with colored blocks for various activities like "Public Buses, Airplanes, Rent A Car", "Taverns, Fast Foods", "Bars, Cafferterias, Cinemas", and "Hotels, Motel".
- Overview**: A panel at the bottom showing "Selected Activity" parameters: Activity Id (146), Start Date (Wed Jun 06 10:26:00 EEST 2007), End Date (Wed Jun 06 15:30:00 EEST 2007), Departure (Trikala), and Destination (Trikala).
- MessageBoard**: A panel at the bottom right showing a JTree with categories like "colors" (blue, violet, red, yellow) and "sports" (basketball, soccer). It includes "New" and "Reply" buttons.



# Rationale behind an artifact

## ■ The collaborative message board





# *Implications on learning*

- Learning as
  - ▣ Adapting to
    - End user requirements
  - ▣ Reusing experience
    - New applications domain / problems
    - Rationale behind an artifact



# Learning as adapting

eKoNEΣ administrator

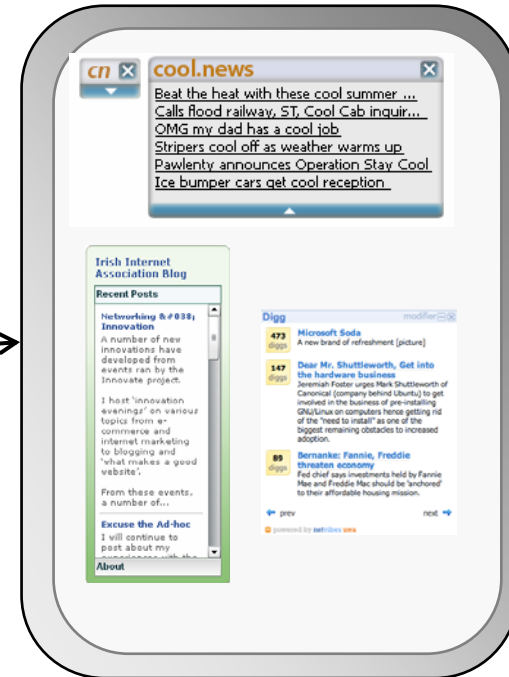
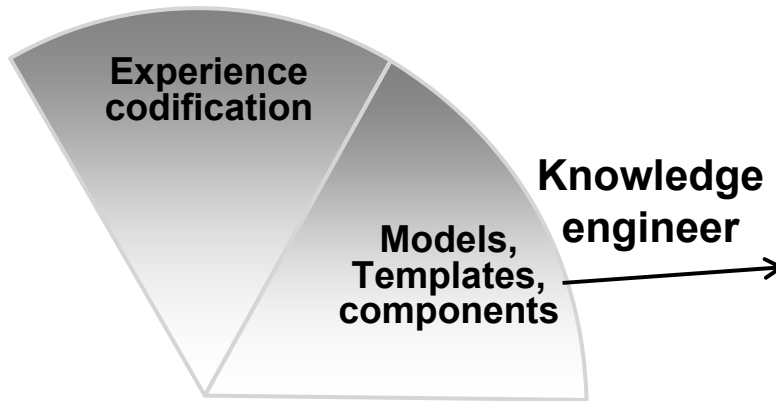
Experience  
codification

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# Learning as adapting (cont.)

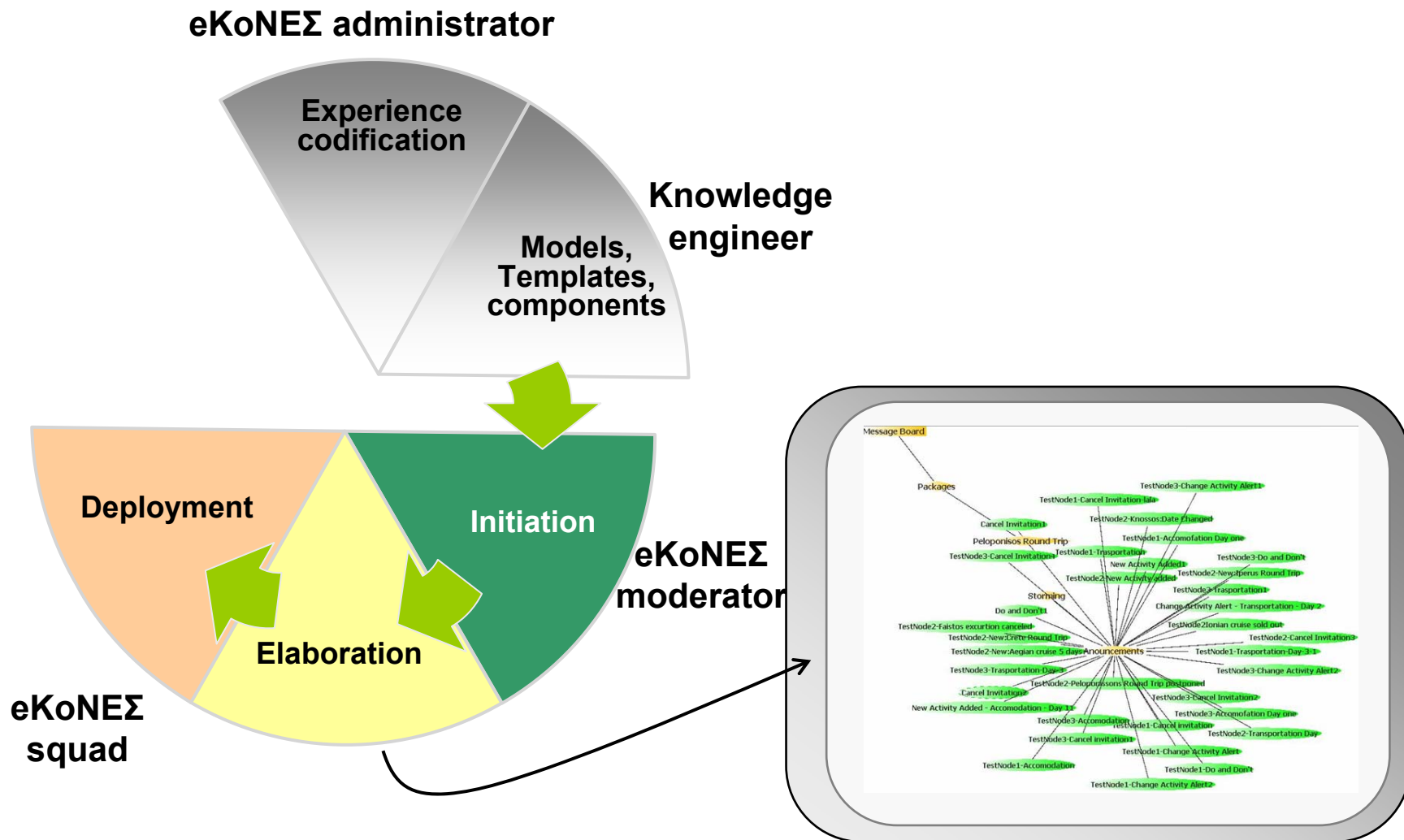
eKoNEΣ administrator





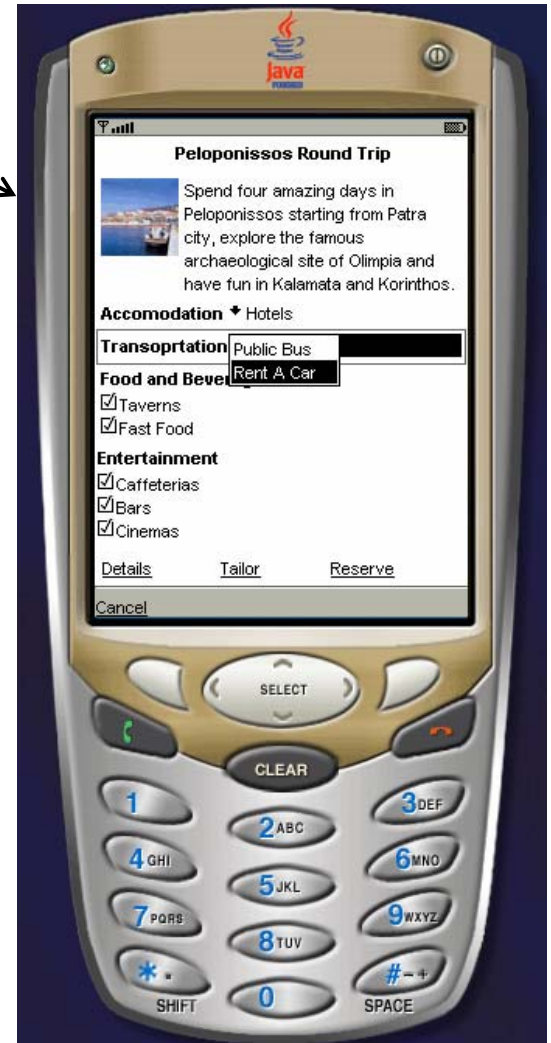
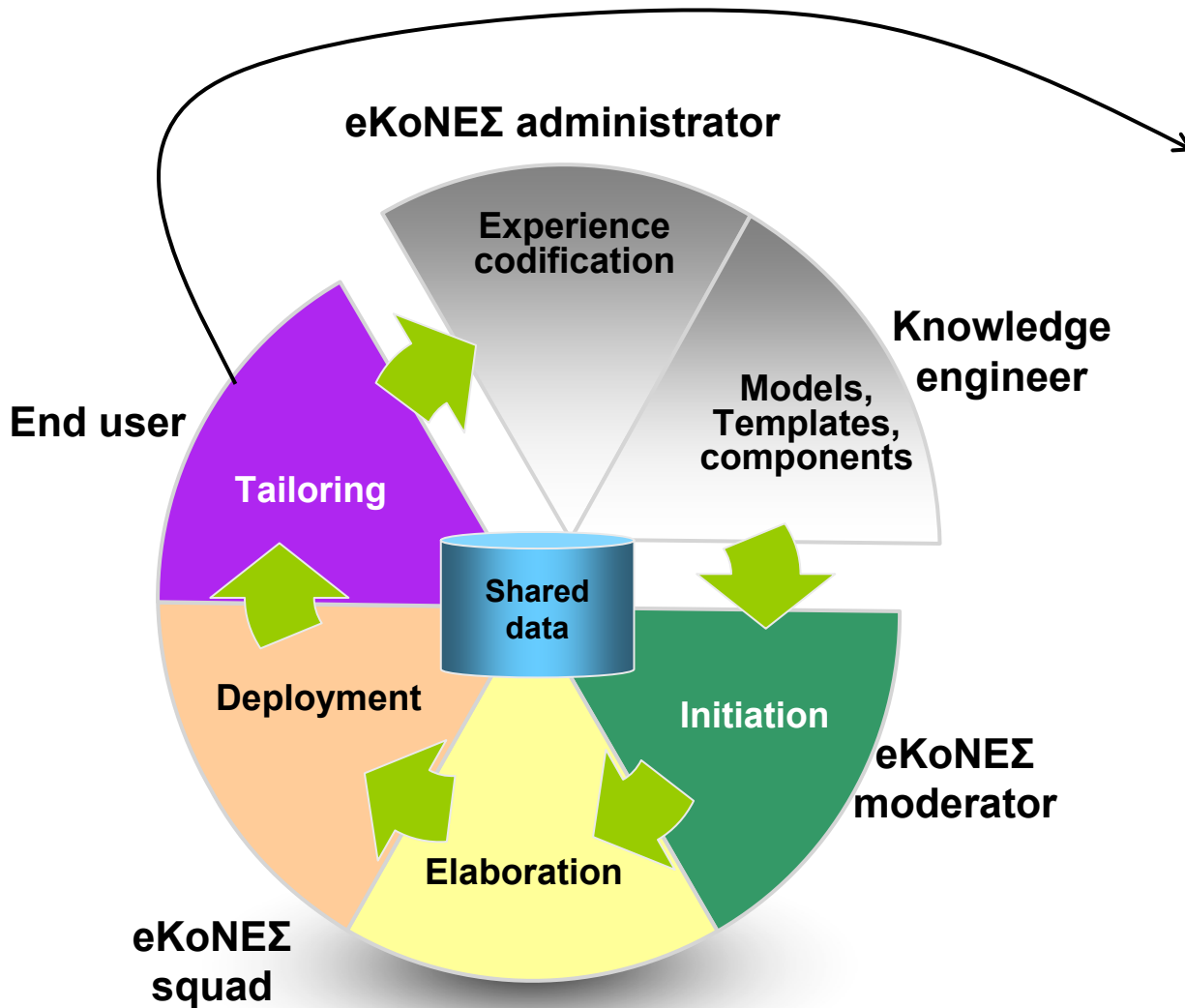


# Learning as adapting (cont.)





# Learning as adapting (cont.)





# Learning – Reusing

## ■ CBLIS'07 conference plan

The screenshot displays the 'Administrator Console' for the 'CBLIS Conference'. The main window shows a grid of sessions:

Time	Session Title	Speakers	Room
09:00 - 09:30	Strategies of forming students' critical thinking in the face of new technologies during biology lessons	Katarzyna Potyrała & Alicja Walołek	Room 1
09:00 - 09:30	Design and Implementation of Integrated Laboratory Activities with Measurements, Data Analysis and Modelling	Meris Tsakiri, Euripides Hatzikraniotis	Room 2
09:31 - 10:00	informal learning in an electronic village of local interest	Demosthenes Akoumianakis, Dimitrios Kotsalis, George Vellis, Giannis Miliodakis, Nikolas Bidakis	Room 2
09:31 - 10:00	Integrating ICT into Physics Teaching-Learning Based on Sound Pedagogical Principles	Yap Kueh Chin	Room 1
10:01 - 10:30	Realistic multimedia from physical models to instructive multimedia content	Ioannis Pachoulakis	Room 1
10:01 - 10:30	continuous education with the use of asynchronous distance education	Papachristos Dimitrios, Tzoukalas Vasilius, Alafodimos Constantinos, Tolontzi Nona, Mathias Lias	
10:31 - 11:00	Coffee break		
11:01 - 11:30	When can we see moon in clouds?		
11:01 - 11:30	On the design of an		

The bottom panel shows the 'Squad Lifecycle' configuration for a session:

- Categories:  Conference,  Paper Presentation
- Start: 06/10/2007 15:23
- End: 06/10/2007 15:23
- From: Heraklion To: Heraklion
- Description: Computer - supported informal learning in an electronic village of local interest. Demosthenes Akoumianakis, Dimitrios Kotsalis, George Vellis, Giannis Miliodakis, Nikolas Bidakis. Room 2

Buttons: + Add, - Remove, Update, Reset



# Learning – Reusing (Cont.)

## ■ Planning a course

**Administrator Console**

File View About

**Community** Class Schedule

Day 1  
1/8  
2007

Time	Activity	Title	Class
12:00 - 14:45	[Laboratory]	Title: Databases Prof. Demosthenes Akoumianakis	Class: 2NK
15:00 - 17:45	[Lecture]	Title: Human Computer Interaction Prof. Demosthenes Akoumianakis	Class: 3PK
15:00 - 17:45	[Laboratory]	Title: Software Engineering Prof. Nikolaos Yidakis	Class: 6PK
18:00 - 20:45	[Lecture]	Title: Databases Prof. Demosthenes Akoumianakis	Class: 8-9
18:00 - 20:45	[Lecture]	Title: Software Engineering Prof. Nikolaos Yidakis	Class: NK3

Package Lifecycle Squad Lifecycle

Initialization Elaboration Deployment Tailoring

Categories

- Class Schedule
- Laboratory
- Lecture

Description

Title: Human Computer Interaction  
Prof. Demosthenes Akoumianakis  
Class: 3PK

Start: 01/Auy/2007 15:00  
End: 01/Auy/2007 17:45  
From: Heraklion To: Heraklion

+ Add - Remove Update Reset



# *Summary & Conclusions*

- Collection of tools which allow bi-directional learning through social interaction
  - ❖ Sharing and collaborating
  - ❖ Negotiating
  - ❖ Capturing and codifying experience
  - ❖ Reusing experience to address new problems
- Pilot evaluation expected to show
  - ❖ Measurable learning outcomes
    - Number of new packages
    - Number of adapted / reused packages
    - Messages exchanged as an index of package complexity, agreement, disagreement, etc
    - Average number of active participants as a measure of return on investment
    - etc.



*Goodbye*

Thank you !