



ON THE DEVELOPMENT OF SHARIF **VIRTUAL** UNIVERSITY

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Agenda

- What is virtual University?
 - What is Distance Learning?
 - Why Distance Learning?
 - From traditional to new Era ...
 - Sharif Virtual University
 - Why Standards?
-
- What are the Standards?
 - Architecture considerations
 - Discussion

Definitions

Distance Learning (DE)

- Distance Education refers to teaching and learning situations in which the instructor and the learner are geographically separated, and therefore rely on electronic devices and print materials for instructional delivery

E-Learning = Technology-based learning

- covers a wide set of applications and processes, including computer-based learning, Web-based learning, virtual classrooms, and cooperative learning

Online Learning = Web-based learning

- constitutes just one part of technology-based learning and describes learning via Internet, intranet, and extranet

Definitions

Virtual University (VU)

- VU is normally referred to as an online environment that models the process of education and research. Therefore, VU can be considered as a web-based DE system along with the required systems such as LMS, CMS, Digital Library, and E-Commerce to provide the required services to students, faculty and staff.

Learning Management System (LMS)

- A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process.

Learning Object (LO)

- A Learning Object is a self standing, discrete piece of instructional multimedia content that meets a learning objective. LO consists of material, activities and assessment

Subsets of Virtual University

Virtual University

Distance Learning

Online Learning

Computer-based Learning



Why Distance Learning

On-demand learning: instruction is available when and where the learner needs it, eliminating the need to wait for, or travel to, a scheduled class. In addition, distance learning increases access to learning for the disabled

Learner controlled: each learner is able to review topics or to skip the information they already know

Increased motivation: students frequently report that they find technology-based interactive learning more interesting and enjoyable than classroom lectures

Increased achievement: when corrective feedback or a learning strategy designed to help students achieve mastery in a certain area is provided, students often show better test results, retention, or job performance from technology-based interactive learning

Reduced learning time: typically 30–40 percent less time is required for learning to be achieved compared to classroom instruction

(Dennis, 1994; Kearsley, 1990; Wilson, 1991)

Why Distance Learning

Better quality control: Learning experience in Distance Learning is more consistent and reliable than classroom instruction

Greater flexibility: fluctuations in the number of learners, or their backgrounds, can be accommodated more easily than classroom instruction

Improved accountability: automatic collection of data on learner performance can verify that learning has been accomplished and identify learning problems

Faster revision: learning experiences are delivered via a networked system, simplifying the process of making changes and updates to the curriculum

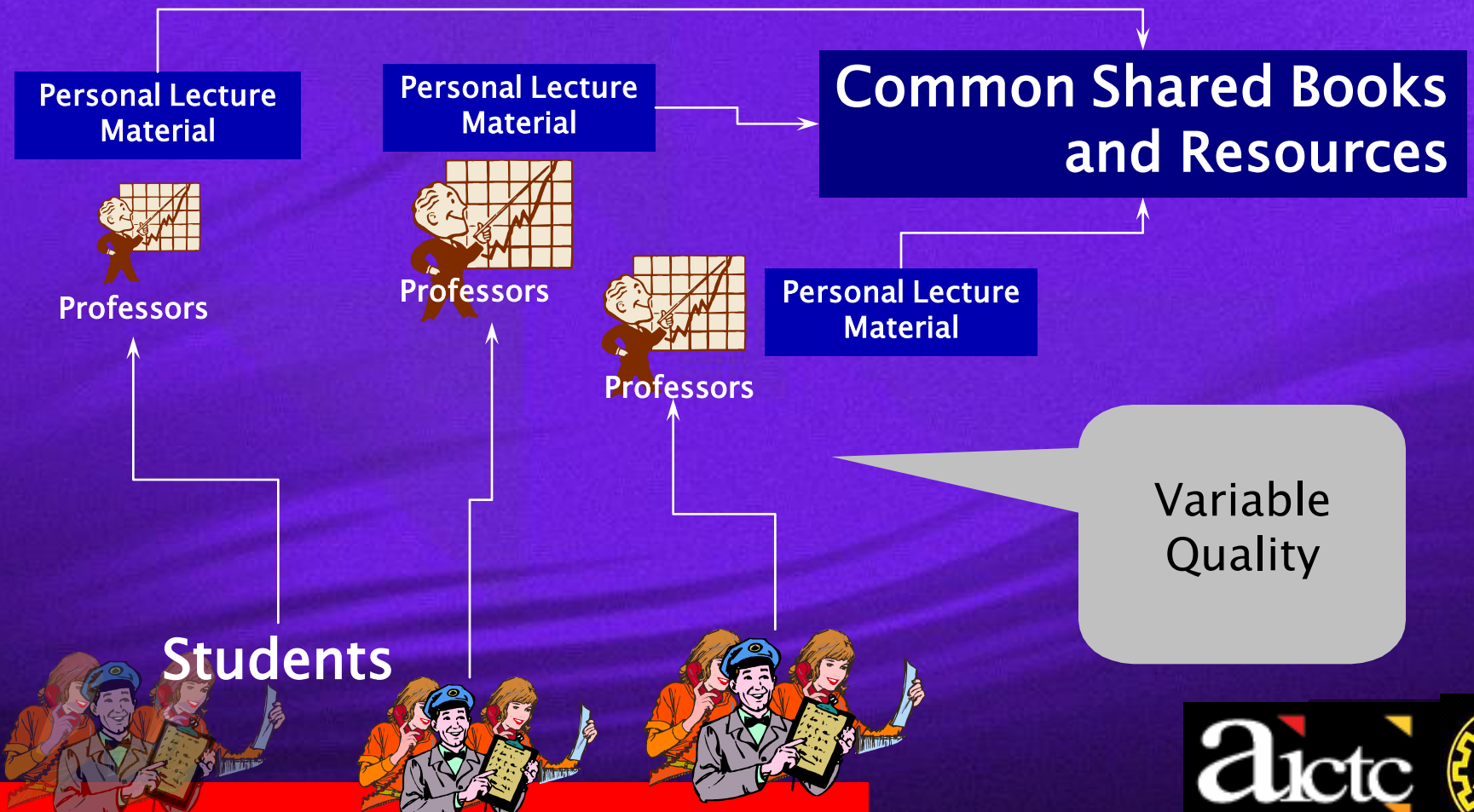
Reduced delivery costs: once developed, technology-based interactive learning is likely to cost less when compared to traditional, labor-intensive classroom instruction

More benefits...

- Learner controlled
- Higher retention of content through personalized learning (Intelligent Tutoring Systems)
- Face-to-Face Instruction via VC
- Self-paced
- Uniformity of content
- Customizable content
- Managed Knowledge Bases
- Improved collaboration and interactivity between students (cooperative learning)
- Technology revolutionizes learning ...

Traditional Model of Instruction

Done separately for each class at each university



Better Model of Instruction

(with team of authoring specialists)

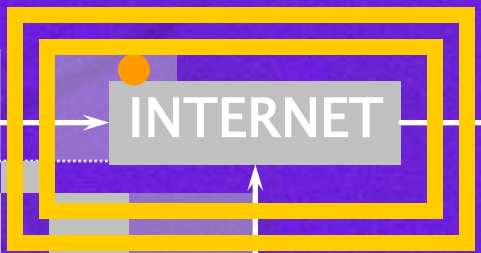
Professors

(with team of authoring specialists)

Professors

Common Shared Books Plus e-Resources

Possible local Students



Students



- Learner Controlled
- High Quality by Selection

A New Era in Education

E-learning



Grid Computing



Digital Libraries



Administrative Computing



Global Collaborations



Business Incubators



Service Providers



Portals

Sharif Virtual University

- You Would not become a fast runner by buying good shoes!
- Toward Building Sharif Virtual University
 - Workshops & Information Portal: Building the culture & Laws
 - Training: To make the transition smooth
 - Transforming the Courses: Multimedia Contents
 - Building the standard courseware: Standard Content Generation
 - The First Step: On-Line Courses
 - The Second Step: Virtual Class Room
 - Building the standard multilingual LMS: To Start VU Culture
 - Toward Virtual University: Building the Digital Library
 - Toward Deployment: Realizing the Complete E-Environment

Sharif VU Design Considerations

- Availability
 - Scalability
 - Portability
 - Adaptability
 - Reusability
 - Accessibility
 - Security
 - Interoperability
 - Quality
- Therefore we need standards



E-Learning Building Blocks

- Courseware :: Learning Objects (LO)
- Learner Model (LM)
- Intelligent Tutoring System (ITS)
- Course Management System (CMS)
- Learning Management Systems (LMS)
- Knowledge Management System (KMS)
- Digital Librsry (DL)

Example::Learning Objects

LO: A Learning Object is a self standing, discrete piece of instructional multimedia content that meets a learning objective. LO consists of material, activities and assessment. Each LO must be reusable across different platforms

EXAMPLE

Core literacy concept = Critical evaluation of information

Discipline = Biology

Learning level = 1 (knowledge)

Instructional goal: Learn and recall steps in process of evaluating Web sites.

ASSOCIATED LEARNING OBJECTS (atoms)

Materials:

1. Animation (VI)
2. Tutorial (VE, VI, KI)

Activities:

1. Construct a chart comparing two biology web sites (VI, KI)
2. Write evaluative descriptions of two biology web sites (VE)

Assessments:

1. Multiple-choice quiz
2. Short answer quiz

Learning Levels:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis

Learning Styles:

1. Verbal (VE)
2. Visual (VI)
3. Kinesthetic (KI)

Emerging E-Learning Standards

- ● ● ● • **IMS** –Instructional Management Systems
- **SCORM** – Shareable Courseware Object Reference Model
- **SIF**– School Interoperability Framework
- Important collaboration with **MIT OKI**, ADL Co-labs, and IMS
- **AICC** : Aviation Industry CBT (Computer–Based Training) Committee CSF (course structure format)
- Other standards (OpenVES, JASIG)
- And other standards such as: **XML**, **UML** , UI standards , ...

Standard Usage Possibilities

- Describing Content and People
 - IMS Learning Objects Metadata
 - IMS Learner Information Profile
- Packaging/Sharing Content
 - IMS Content Packaging
- Supporting Content/System Interoperability
 - AICC

IMS :: Content & Learners

Learning Objects Meta Data

Attributes to describe learning resources, education usage, technical requirement, contributor

Question & Test

Formats for constructing and exchanging assessment info

Content Packaging

Instructions for wrapping and exchanging learning content

Learner Information Package

Information about people/student progress

IMS :: Global Learning

Accepted as XML standard for e-Learning

Forum for collaboration

Consensus between partners and competitors

Protecting customers investment in content and technology

...

SCORM

Sharable Content Object Reference Model: Department of Defense
reference implementation of IMS

Interrelated technical specifications

Unified online learning "content model"

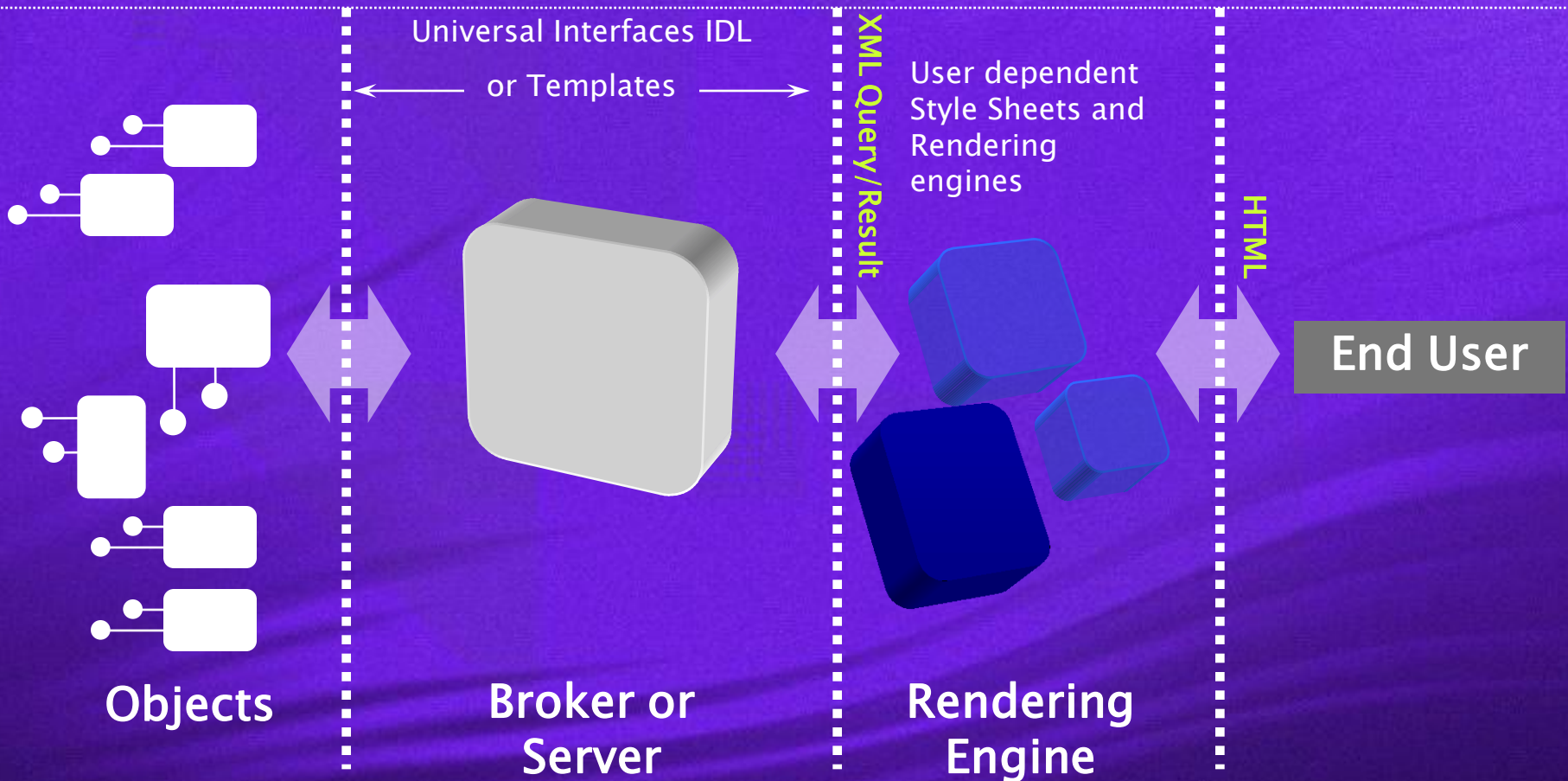
For the re-use of web-based learning content

To work across multiple environments and platforms

...

One more thing!

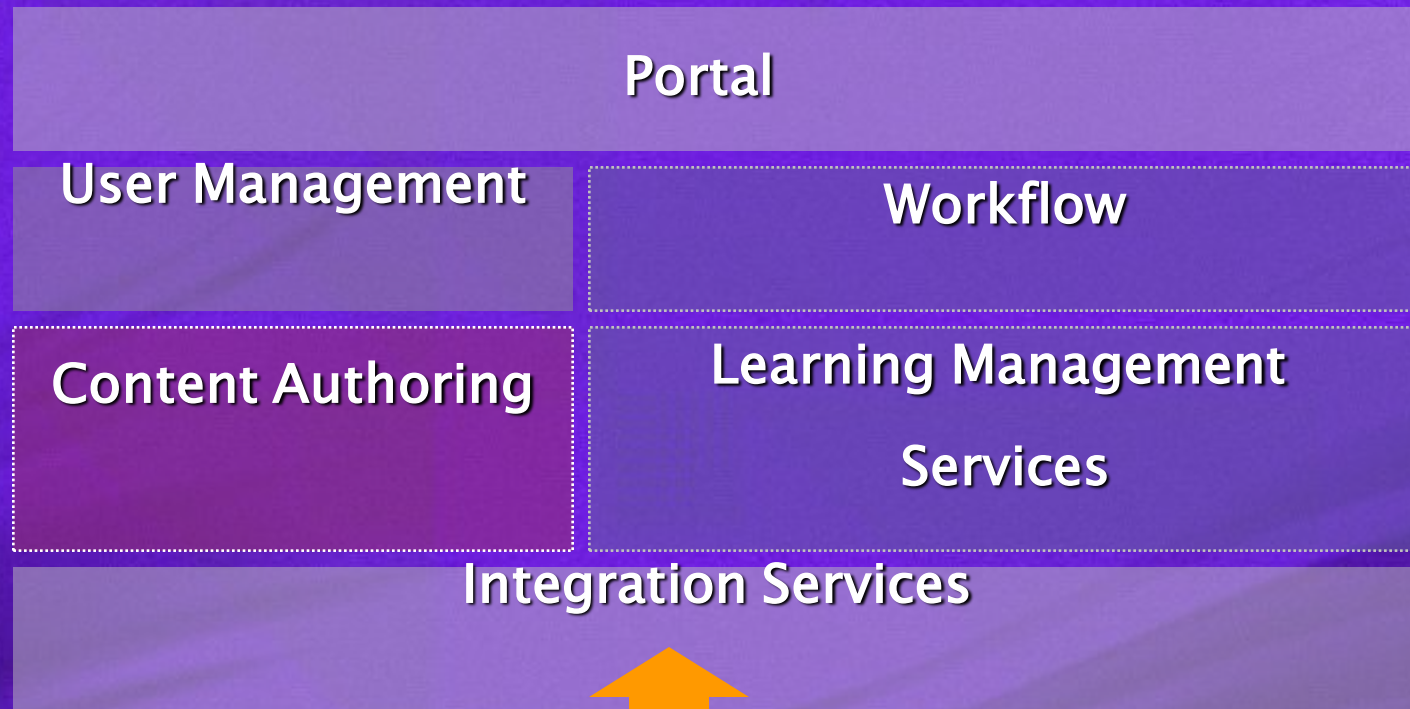
Basic Multi-Tier architecture for Distance Learning



- Define Objects and properties / methods (backend) and define services (front-End)

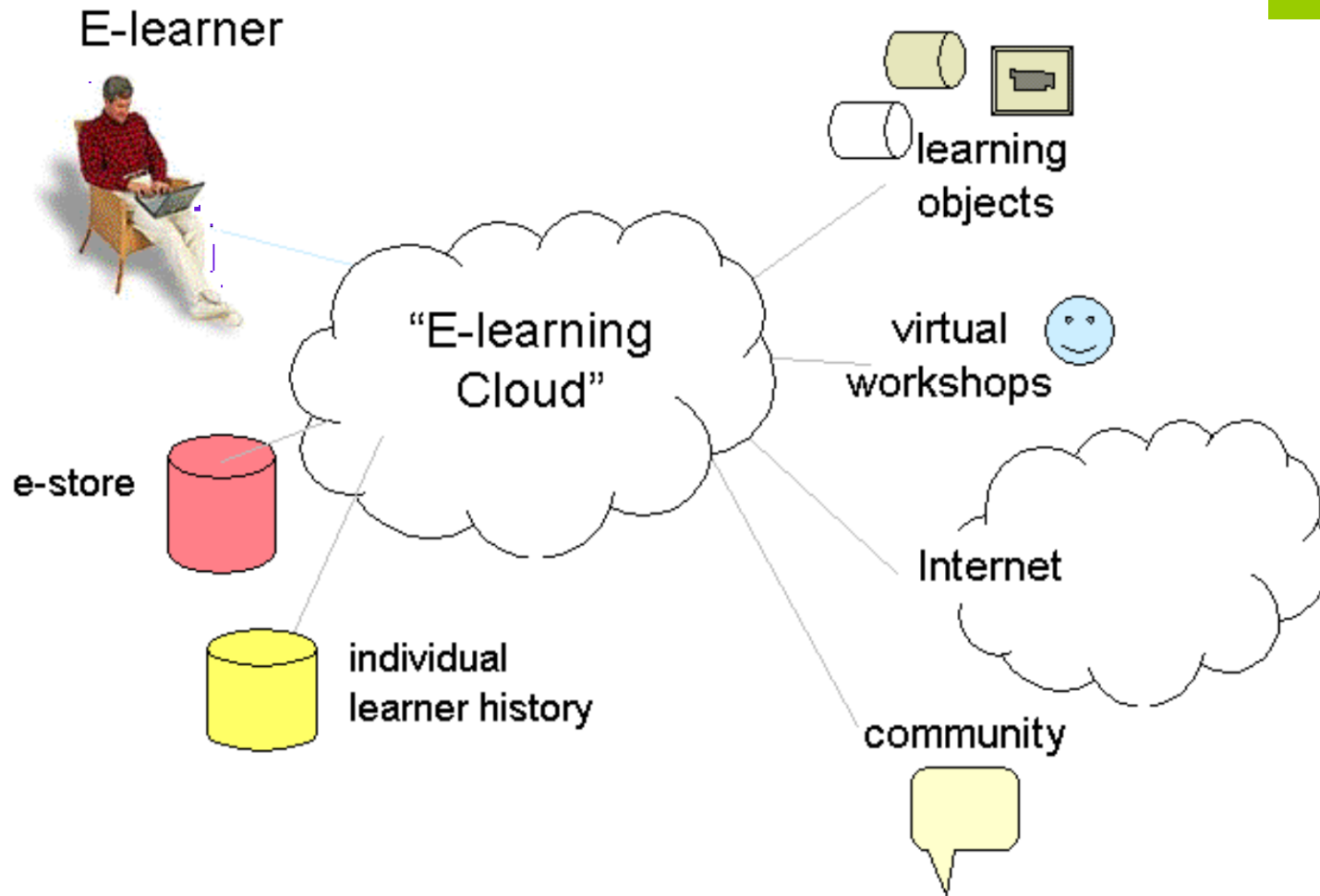
- Objects (at "backend") can be on client of course

An E-Learning Architecture

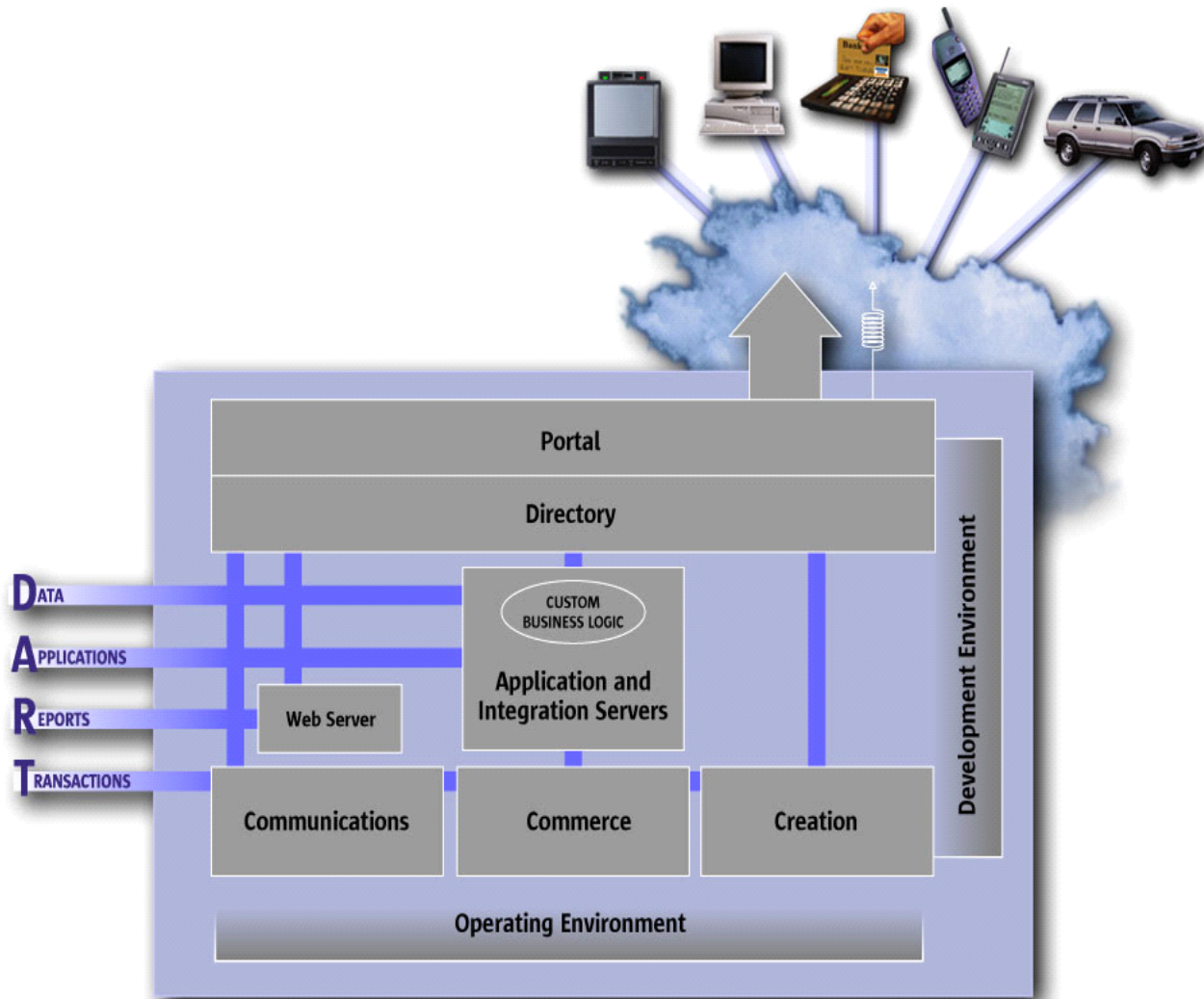


User and Content Data Resources





Any Devices



VU Project Activities

- Workshops & Information Portal: Building the culture & Required Laws
- Information Portal: vu.aictc.com

home
Forum
vu@aictc.com
mail list

وزارت علوم، تحقیقات و فناوری | شورای عالی اطلاع رسانی

کمیته راهبردی

امضای خارج از کشور کمیته راهبردی پروژه های دانشگاه مجازی

- آقای دکتر علی ربیعی (مسئول دانشگاه مجازی های ایران خراسان)
- آقای دکتر اربک نایهوند (دانشگاه پارمیشات آلمان)

امضای کمیته آموزش کشورهای شورای عالی اطلاع رسانی

- آقای دکتر حمیدرضا ربیعی (مجرط طرح)
- آقای دکتر محمد قدسی (دانشگاه صنعتی شریف)
- آقای دکتر پارسایی (دانشگاه تهران)
- آقای دکتر خلای (دانشگاه علم و صنعت)
- آقای دکتر حسن شمانز (دانشگاه شهید باهنر کرمان)
- آقای دکتر بدیع (مرکز تحقیقات مخابرات)
- آقای دکتر مقدم (دانشگاه تربیت مدرس)
- آقای دکتر داود کریم زادگان (دانشگاه پیام نور)

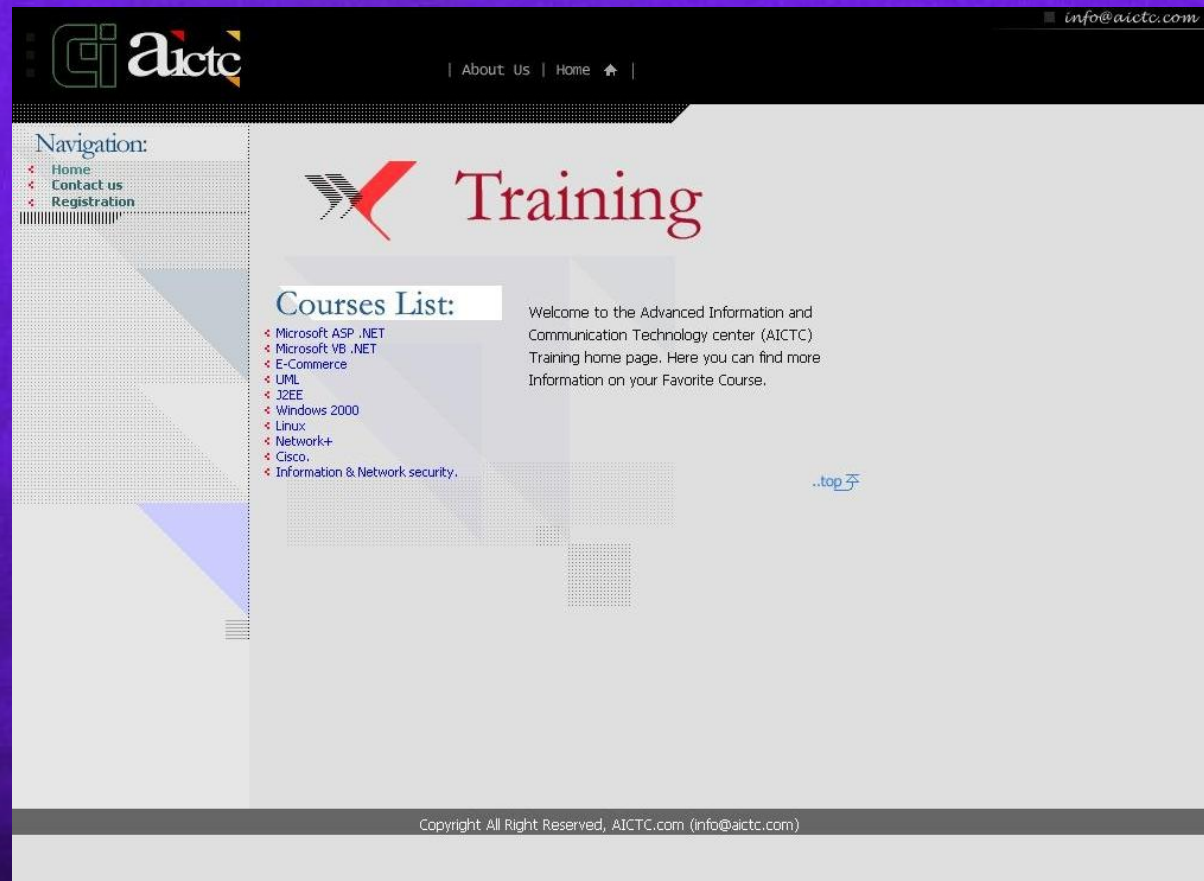
امضای کمیته راهبردی پروژه های دانشگاه مجازی

- دکتر غلامحسین عطیعی
- دکتر علیرضا صانغری
- دکتر سید محسن موسوی
- دکتر خلیل خلیلی
- دکتر حبیبی ابراهیم زاده
- مهندس محمدی زنجیره
- دکتر علی اکبر رسولی
- دکتر ناصر الله مقدم
- علی اکبر پورسرباز
- رهبر حیاتی
- دکتر سید محمد صادقی صادق زاده
- دکتر سربازگ
- دکتر بابک شنگری
- دکتر رضا صیغودی
- دکتر مرتضوی
- دکتر سیروس جوادپور
- دکتر علیرضا صد اقلایی
- دکتر محمود اشرفی زاده
- دکتر احمد گاردان
- آقای سعیدان زکاتی
- دکتر عادل ترکفان رحمانی
- دکتر فرشاد بعضیایی
- دکتر کاشانی
- مهندس فردین شافوری
- عبدالحسین مسعود
- دکتر نادر توپمان زاده
- دکتر بهروز نصیری
- دکتر غلامی حسینی زاده دکن
- سرکار خانم فرشته فارسی
- مهندس یحییاری فرج
- مهندس، هادی فاضلی

درباره
مجزو
اخبار
اسناد و مدارک
تعاریف
دانشگاه ها و مجاز ایران
سایرته ها و مرتبط
ابزار
مقالات
تماس با ما

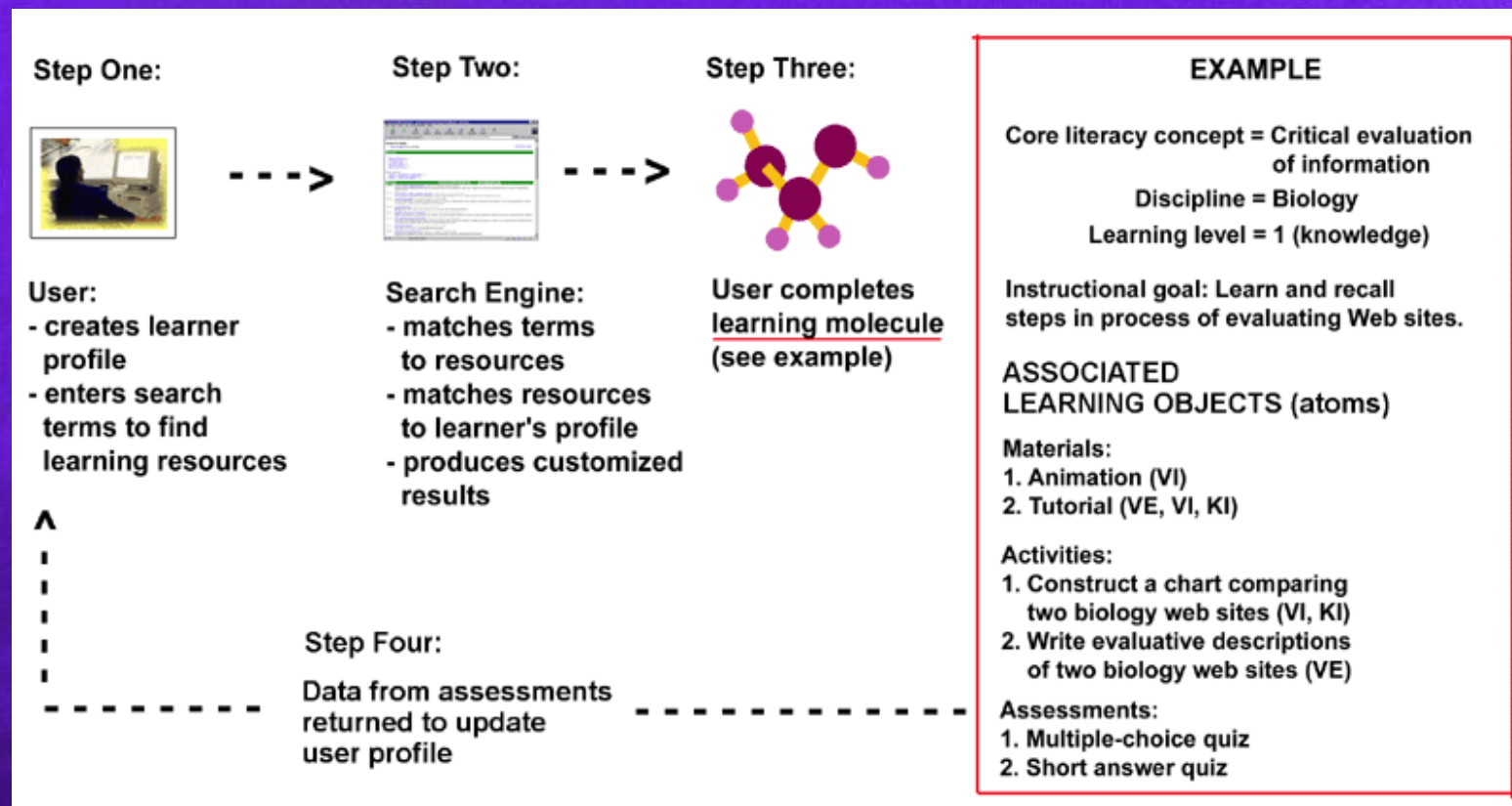
VU Project Activities

- Training: To make the transition smooth
 - On-Line Short Courses



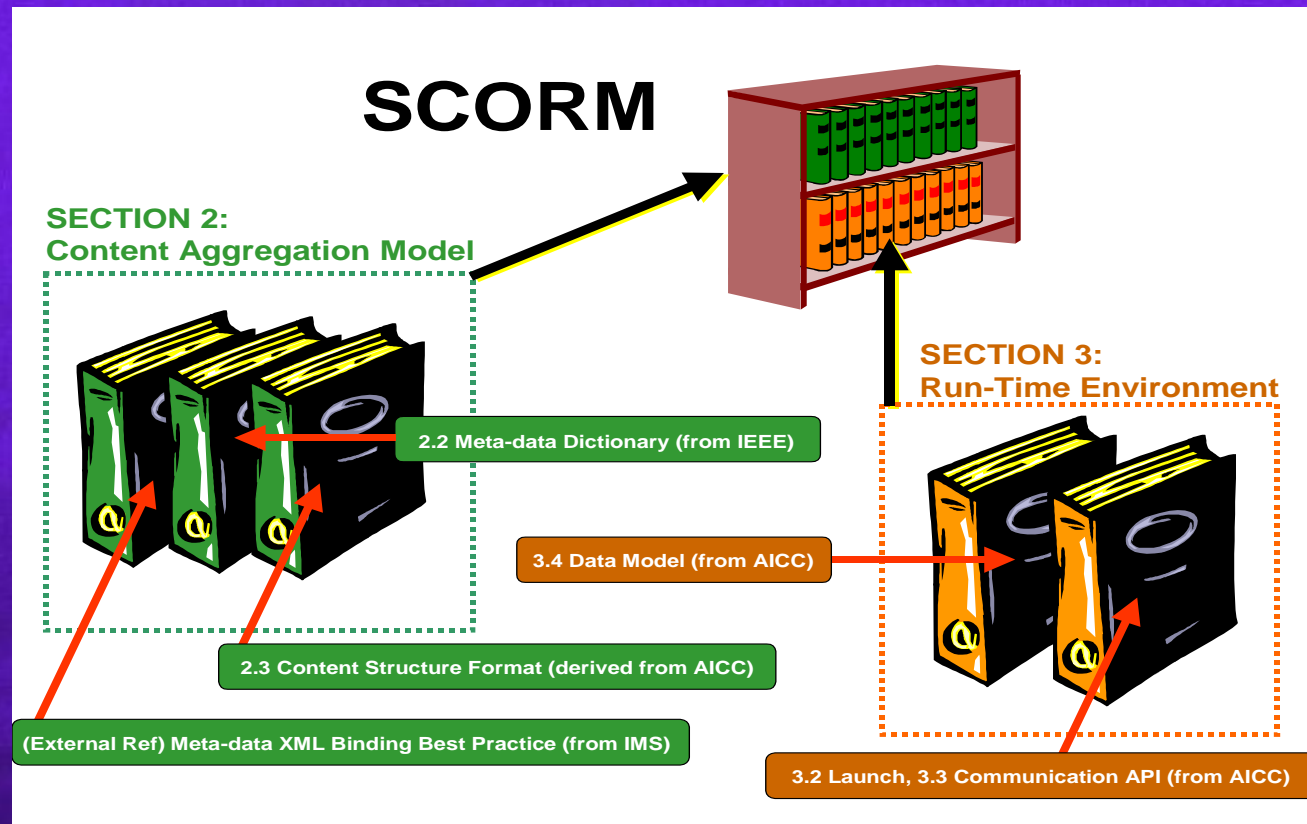
VU Project Activities

- Transforming the Courses: Multimedia Contents
 - Courseware Authoring



VU Project Activities

- Building the standard courseware: Standard Content Generation
 - E-Education Standards



VU Project Activities

- The First Step: On-Line Courses
 - E-Courseware On-Line



12/3/2002 مدیریت استاد دانشجو رویداد ها کتابخانه لیست رشته ها لیست دروس

ورود / خروج

دروس

دروس جاری

دروس گذشته

ثبت نام

برای ورود به سیستم نام کاربری و رمز عبور را وارد کنید :

نام کاربری

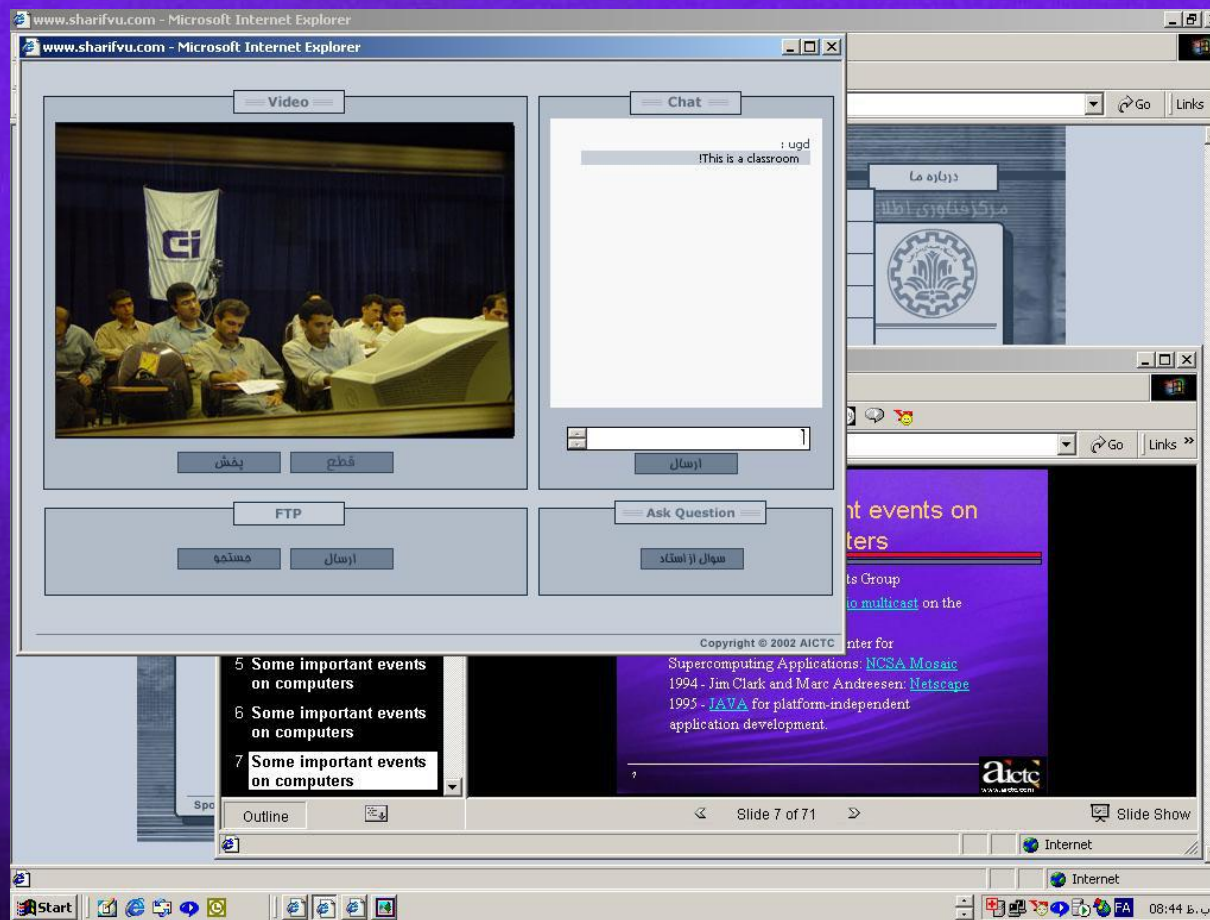
رمز عبور

ورود

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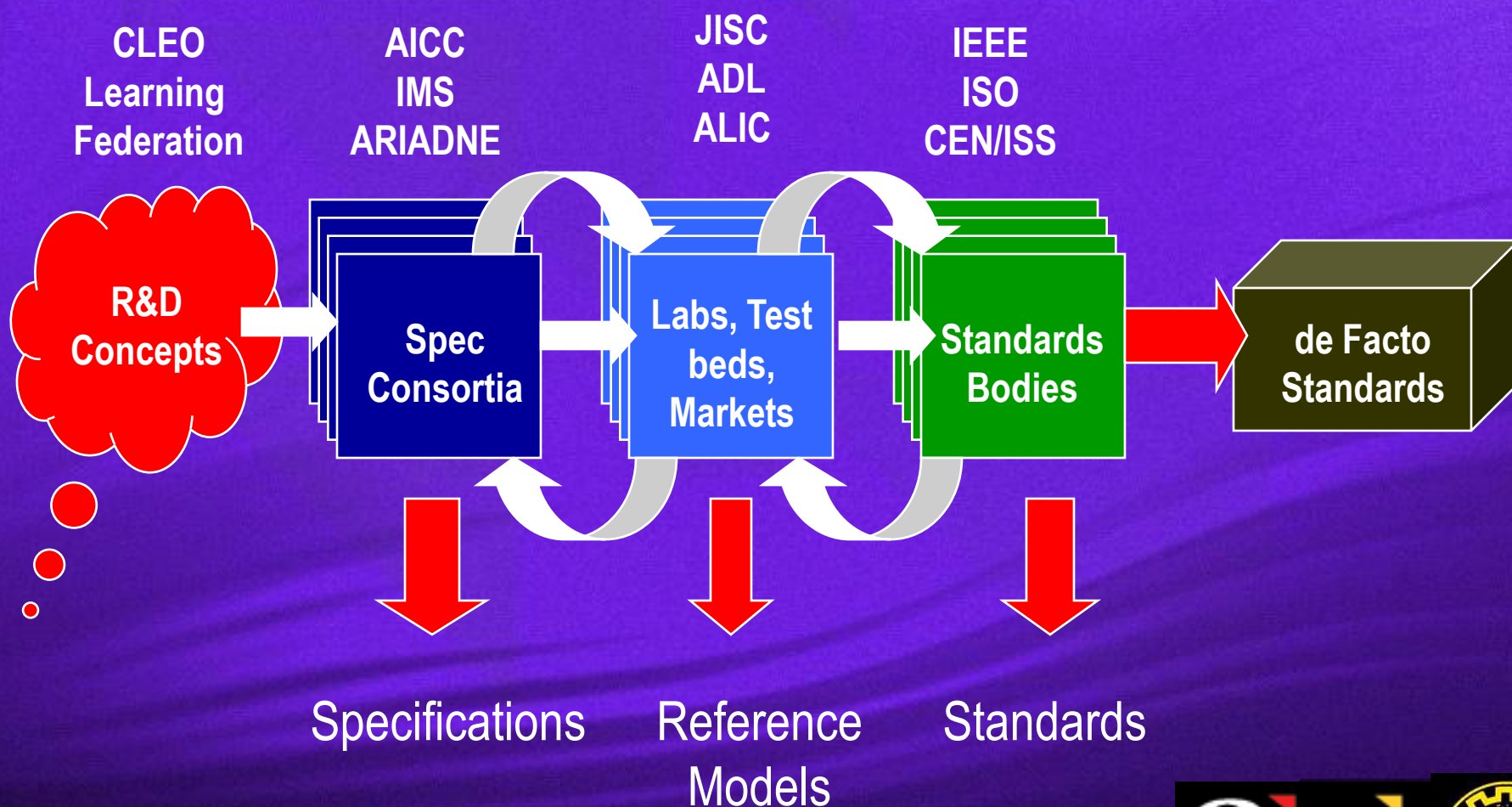
VU Project Activities

- The Second Step: Virtual Class Room
 - <http://www.sharifvu.com>



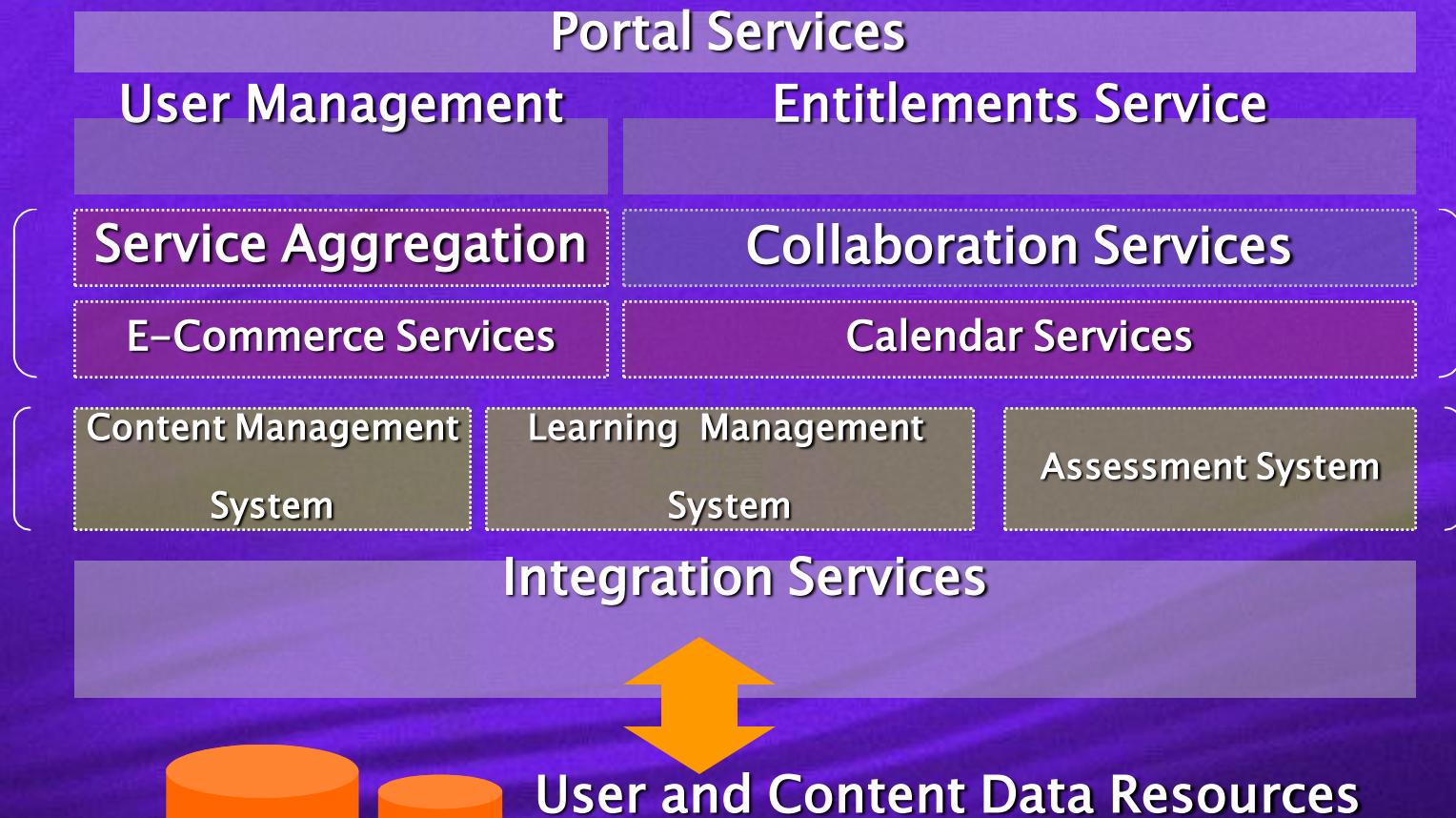
VU Project Activities

- Building the standard multilingual LMS: To Start VU Culture



VU Project Activities

- Toward Virtual University: Building the Digital Library & Integration



VU Project Activities

- Toward Deployment: Realizing the Complete E-Environment

The screenshot displays the Sharif VU website interface. At the top left is the Sharif University of Technology logo. A navigation bar contains the following items: 12/3/2002, مدیریت, استاد, دانشجو, رویداد ها, کتابخانه, لیست رشته ها, and لیست دروس. The main content area features the Sharif VU logo and a circular image of a building entrance. Below this is an "e-Learning" section with the following text: "Interactive", "Flexible", and "Ready to go". To the right, there is a "رویداد ها" (Events) section with a bullet point: "۱۰۰ کتاب جدید در زمینه مهندسی شیمی به کتابخانه افزوده شده است." Below this is a "ورود به سیستم" (Login) section with input fields for "نام:" (Name) and "رمز:" (Password), and a "ورود" (Login) button. At the bottom of the page, there is a copyright notice: "©Copyright 2002, Payam-e-Noor University, By ESP Group, AICTC".

In Summary

- Virtual University with the help of e-learning standards, removes time and place barriers to support new, more effective models of learning, thereby enabling organizations to leverage knowledge to foster innovation and maintain a competitive edge.
- Virtual university can become a reality only if we have the required laws, infrastructure, effective learning models, and correct strategy.

AICTC

It's Time To E-Learn!!

Thank you for taking the time to
review this presentation

Any Question? vu@aictc.com