USTH MM2.1
Soft. Eng. for Interactive Media
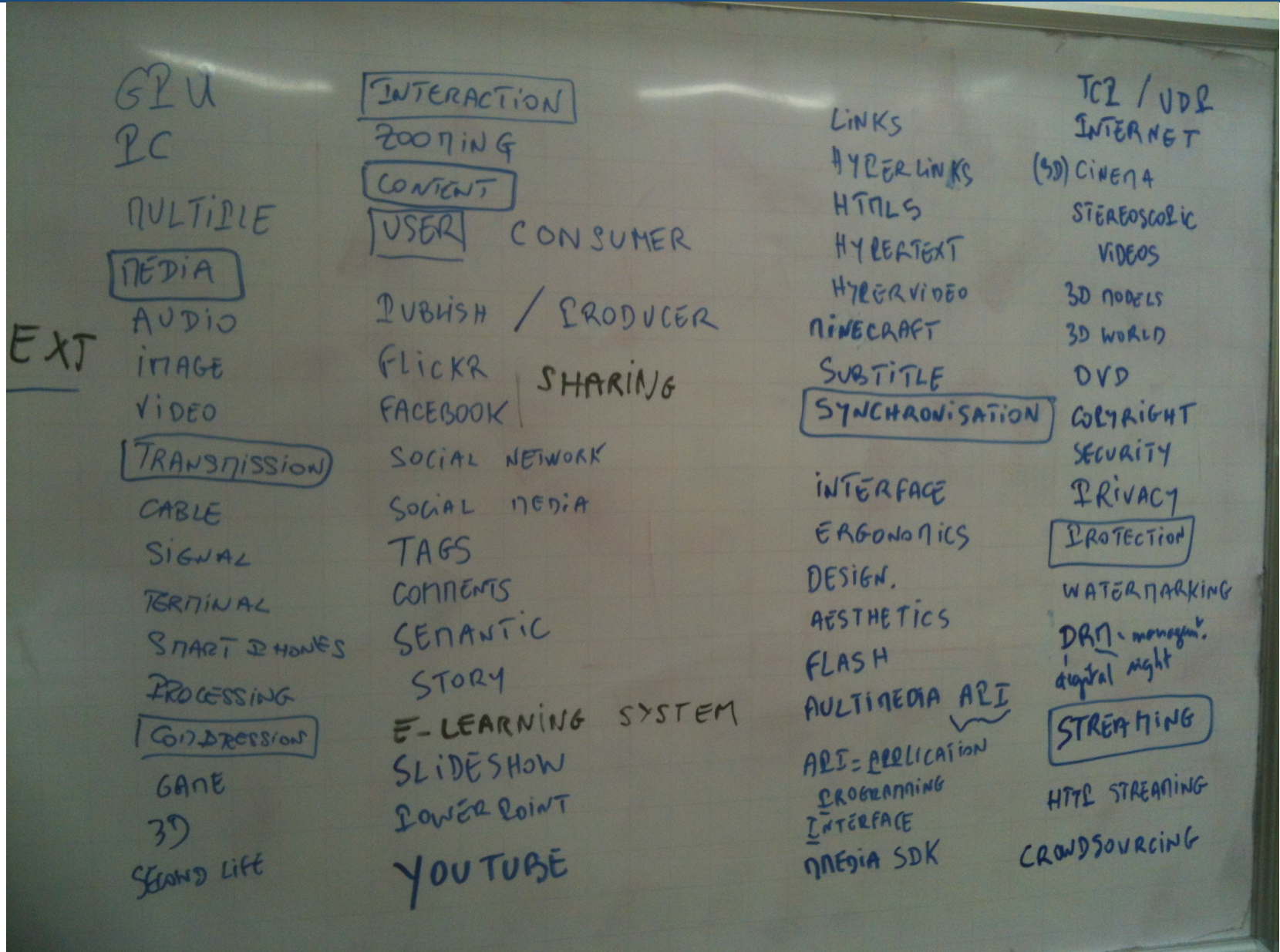

Lecture #1 – Introduction

What is Multimedia?

When different people mention the term multimedia, they have quite different, or even opposing, viewpoints:

– A PC salesman: a PC that has sound capability, a media center, and perhaps the superiority of multimedia-enabled microprocessors that understand additional multimedia instructions.

– A consumer entertainment vendor: interactive cable TV with hundreds of digital channels available, or a cable TV-like service delivered over a high-speed Internet connection.

– A student: applications that use multiple modalities, including text, images, drawings (graphics), animation, video, sound including speech, and interactivity.
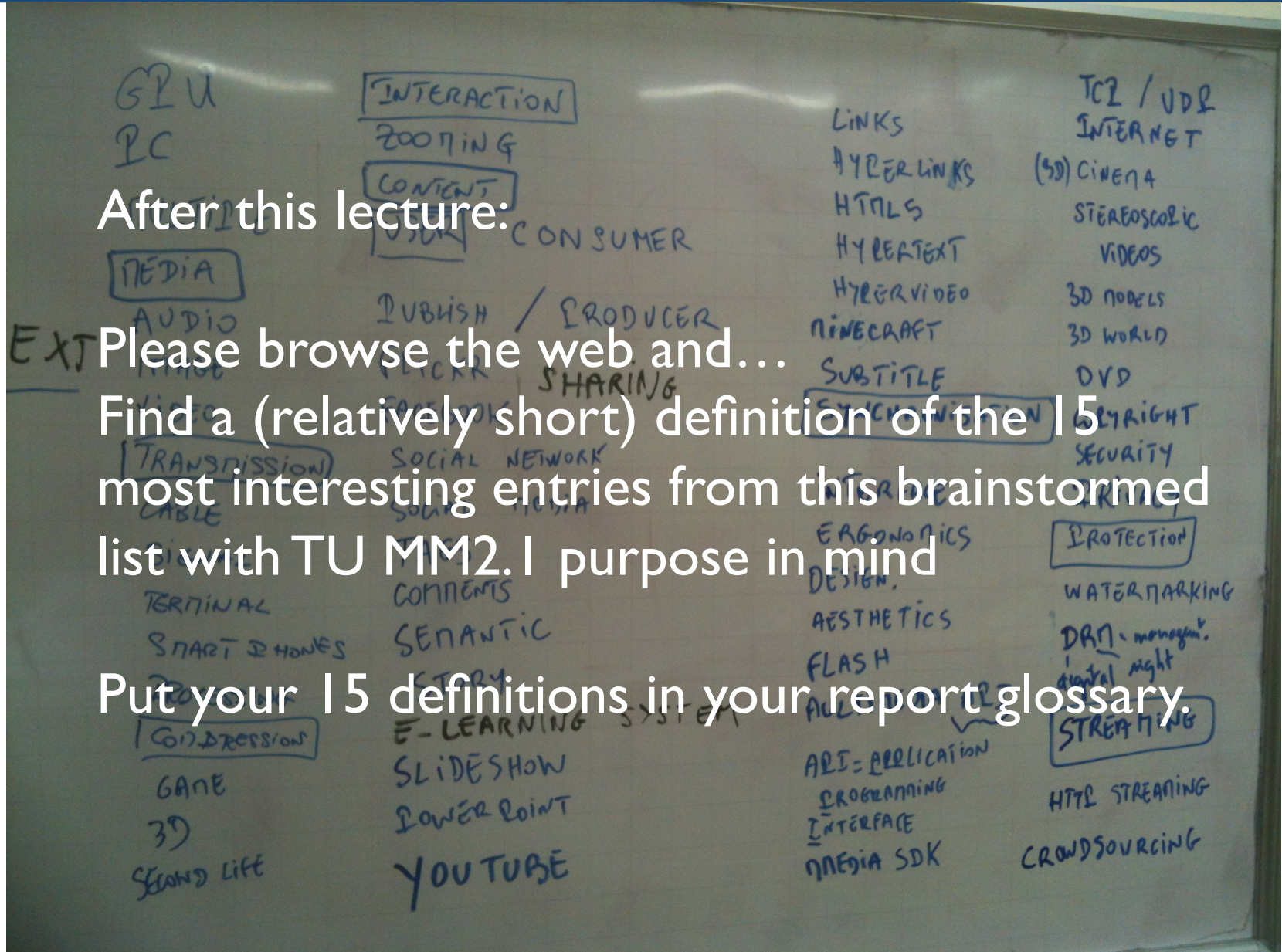
What is multimedia ?

GPU
PC
MULTIPLE
MEDIA
EXT AUDIO
IMAGE
VIDEO
TRANSMISSION
CABLE
SIGNAL
TERMINAL
SMART PHONES
PROCESSING
COMPRESSION
GAME
3D
SECOND LIFE

INTERACTION
ZOOMING
CONTENT
USER   CONSUMER

PUBLISH / PRODUCER
FLICKR   SHARING
FACEBOOK
SOCIAL NETWORK
SOCIAL MEDIA
TAGS
COMMENTS
SEMANTIC
STORY
E-LEARNING SYSTEM
SLIDESHOW
POWER POINT
YOUTUBE

LINKS
HYPERLINKS
HTML5
HYPERTEXT
HYPERVIDEO
MINECRAFT
SUBTITLE
SYNCHRONISATION

INTERFACE
ERGONOMICS
DESIGN
AESTHETICS
FLASH
MULTIMEDIA API
API = APPLICATION
PROGRAMMING
INTERFACE
MEDIA SDK

TCP / UDP
INTERNET
(3D) CINEMA
STEREOSCOPIC
VIDEOS
3D MODELS
3D WORLD
DVD
COPYRIGHT
SECURITY
PRIVACY
PROTECTION
WATERMARKING
DRM = managm.
digital right
STREAMING
HTTP STREAMING
CROWDSOURCING

What is multimedia ?

After this lecture:

Please browse the web and…
Find a (relatively short) definition of the 15 most interesting entries from this brainstormed list with TU MM2.1 purpose in mind

Put your 15 definitions in your report glossary.

What is Multimedia?

- Multimedia definition #1 from the web:

- Computer-based processing of the data that includes at least two of the following elements: text, audio, graphic, image, animation, and video

- Let's pick a second definition #2 up:

  - A combination of two or more categories of information having different transport signal characteristics

  - Typically, one medium is a continuous medium while another is discrete

  - Image, audio, video and graphics are examples of media

What is Multimedia?

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Adopted definitions (K. Nahrstedt)

Multiple media

– discrete or continuous

– at least one continuous

Coordination

– temporal or spatial

Interaction

– user exercises control

Multimedia Content Requirements

Media

– *representation* of information

– text, graphics, images, sound, etc.

Medium

– how that representation is communicated

– TV, Radio, Print, Web

Media: Images

- Some Issues
  - Is the image as high-quality as I need?
  - Is the image efficiently stored and transmitted?
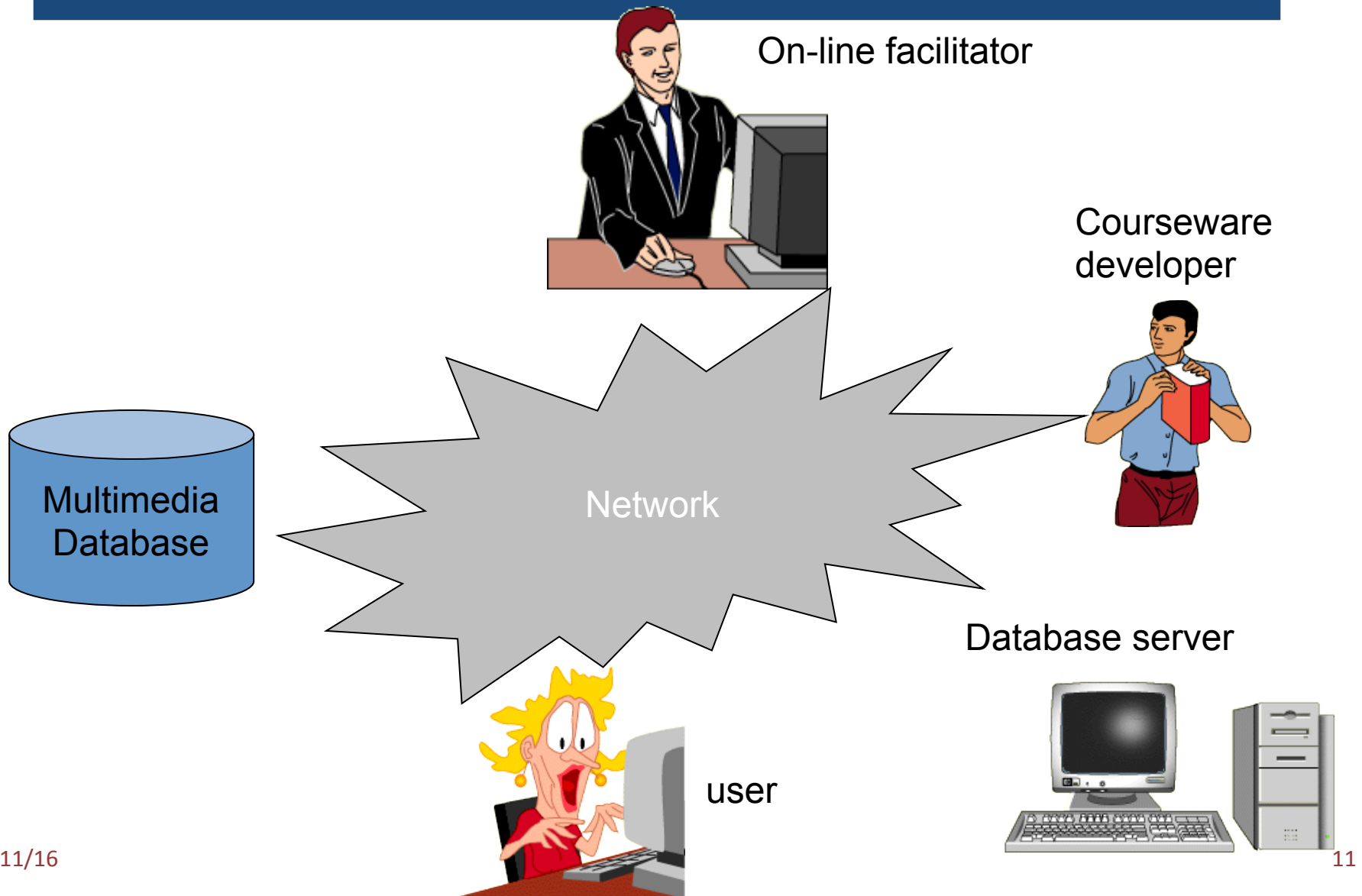 - Can the image be retrieved by its content?

Media: Videos

- Some issues
  - How are the temporal relations between the media represented?
  - What do I need to stream video across the network?
  - Are the different media synchronized?
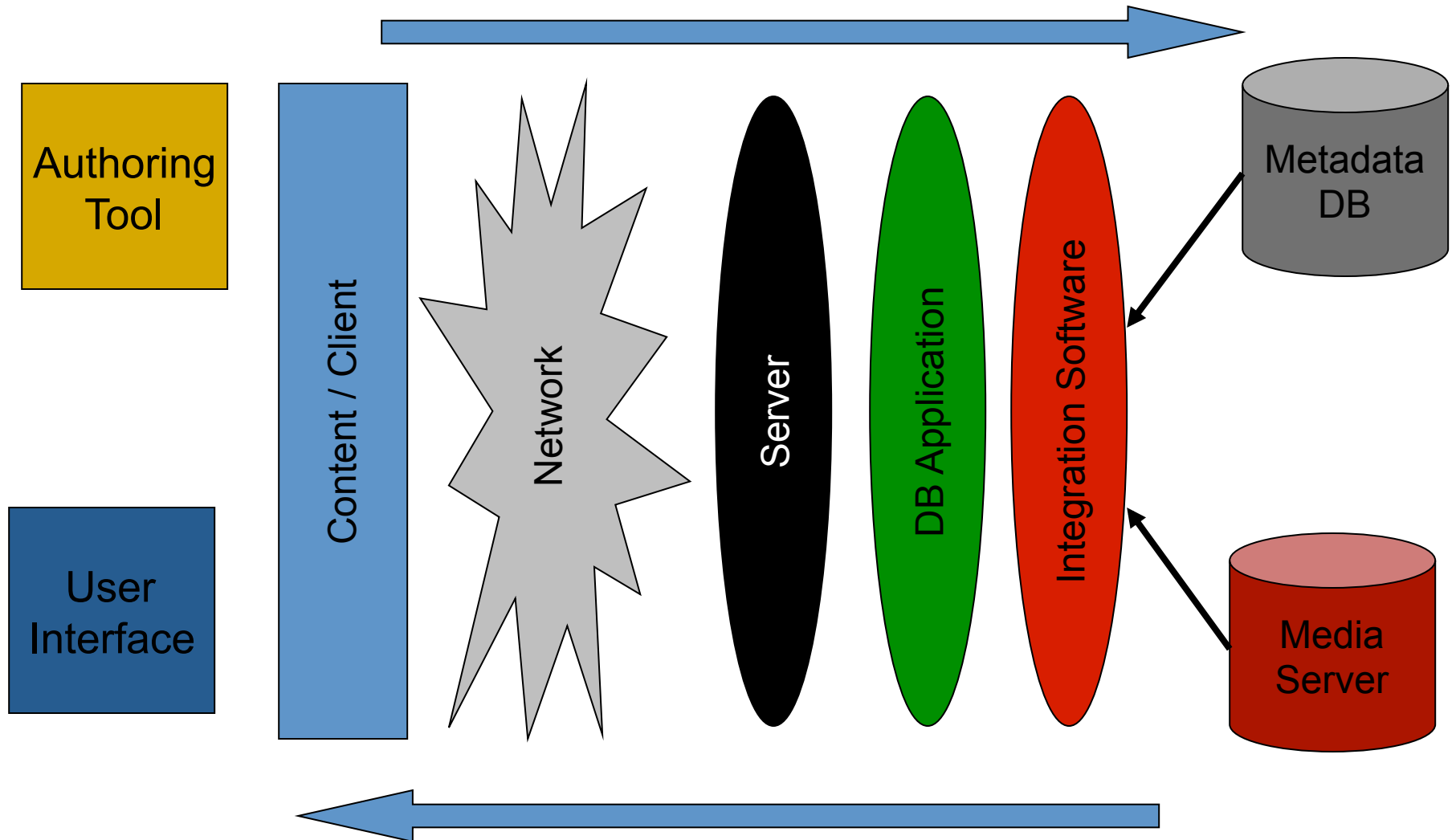 - How can I describe a video retrieval request like a query?

What is a Multimedia System?

- A system that involves:
  - generation
  - representation
  - storage
  - transmission
  - search and retrieval
  - delivery

  of multimedia content

  ➤ production/authoring tools
  ➤ compression and formats
  ➤ file system design
  ➤ networking issues
  ➤ database management
  ➤ server design, streaming

A Course-on-Demand System

On-line facilitator

Courseware developer

Multimedia Database

Network

Database server

user

A Course-on-Demand System

Authoring Tool

User Interface

Content / Client

Network

Server

DB Application

Integration Software

Metadata DB

Media Server

What is the TU MM2.1 about ?

Authoring Tool

Content / Client

User Interface

Non-linear/Linear MMedia Content

Multimedia Content may be divided into:

- **linear** and

- **non-linear** categories.

Linear active content progresses often without any navigational control for the viewer such a cinema presentation.

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Non-linear/Linear MMedia Content

Non-linear uses interactivity to control progress as with a video game or self-paced computer based training.

Hypermedia is an example of non-linear content.

Interactive media or **richmedia** are terms used with this non-linearity in mind.

Any question at this point

?