

# from black box to crystal ball



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# inViVo Vision co-founders

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  - 16 years telecommunications industry
  - 17 years basic research at T.J. Watson
- Antonio Ruiz, Ph.D.
  - 17 years basic research at T.J. Watson
  - 10 years leadership management
- Tim Schoeb
  - government and business

# Abstract of the Presentation

The evolution of technology over the last twenty years has been marked by great accomplishments and unanticipated (surprising) results. Both industry and government were unprepared for the affinity with technology that the general public inherently had, and the demands imposed on the technology sector both in terms of solutions and talent. Today we examine Education, Research Networking and the Internet as distinct scenarios in the evolution of technology into the future. A brief summary of already examined overviews will be followed by examples in each of these areas based on work currently undertaken by inViVo Vision scientists. These will include Pedagogogenomics, e-Mentoring as a Personal Research Networking Space and the Carousel Website Solution.

# VWV Areas of Research

- pedagogonomics
  - disruptive technology
- e-mentoring
  - personal networking space
- carousel website
  - broadcast content and interaction

# Pedagogenomics

disruptive technology



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# Disruptive Change

- (incremental innovation) vs. (breakthrough change)
- how to change processes radically
- disruptive innovation = changing the game
- introduction of technology in education has not been disruptive but "tentatively" adaptive
- each industry reacts differently to disruption
- example: telecommunications & cell phone

# Pedagogenomics

- information and cognitive sciences can provide the catalyst needed to ignite a "disruptive" change capable of "true" innovation -- not transformation, not reinvention, not repurposing!
- this new disruptive change is critical to the continuing evolution of pedagogy.

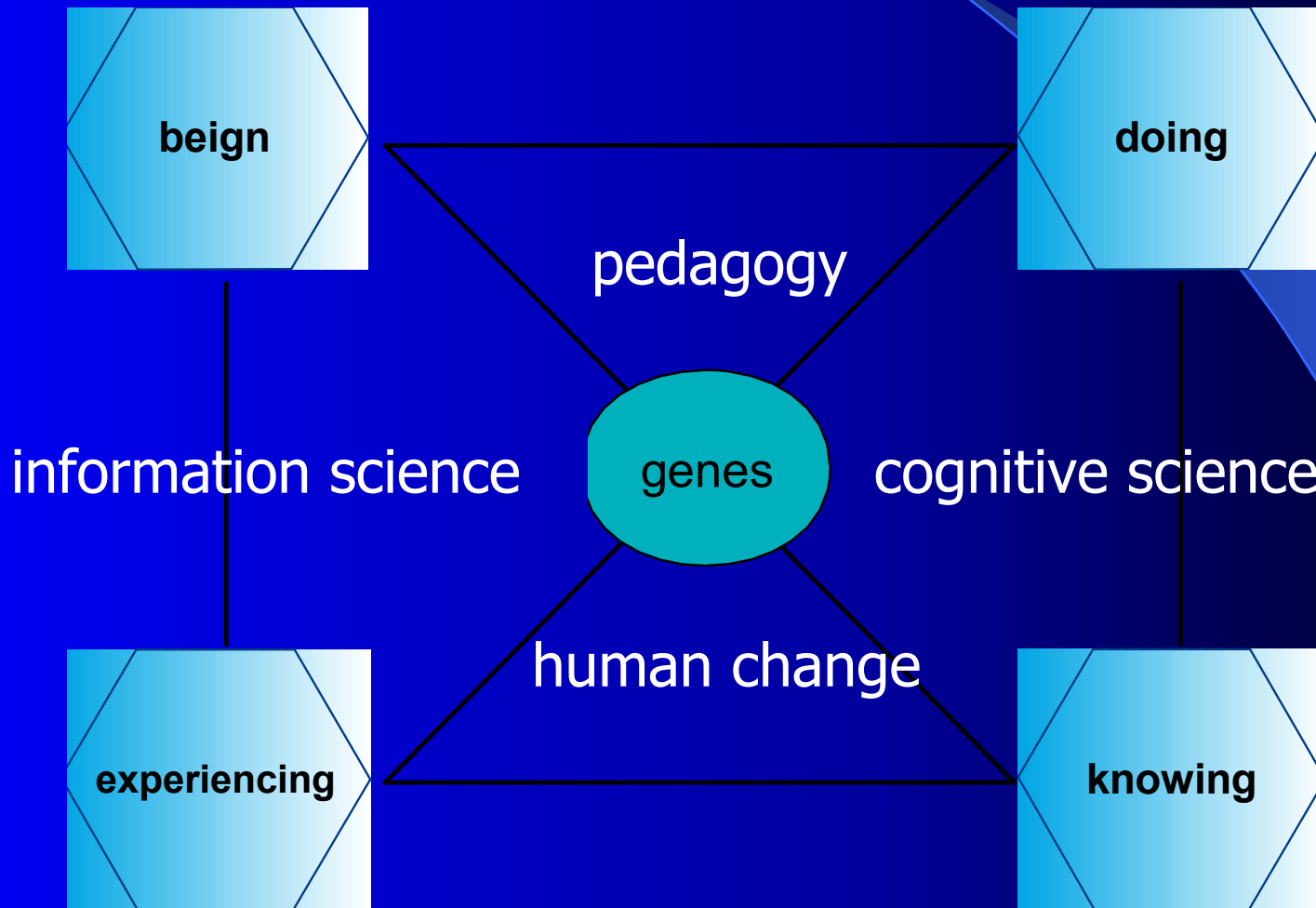
# Research Space

- pharmacology
- pharmacogenomics
- human genome project
- cognitive science
- computer science
- pedagogonomics...

# Scientific Evolution

- marked implicit appearance
- result of years of confluent practices
- technology components coming together as integrated personal systems
- end-to-end mentoring = e-mentoring

# Techno-Scientific Model



# Work in Progress

- [www.pedagogenomics.org](http://www.pedagogenomics.org)
- invitation to participate
- creation of new field of research
- infusion in e-learning practice
- propelled by global changes
- based on pedagogical and cognitive sciences
- built on existing technologies

# White Paper Contacts

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# e-Mentoring

personal networking space



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# e-Mentoring

- customer, mentors, environment
  - executive team, dissertation cmt., interest clusters
- integrated technology platform
  - adaptable sessions management
- knowledge management environment
  - portfolios, digital library
- collaboration tool
  - mentoring cluster (team) organization

# e-Mentoring Platform

- technology platform solution to support all aspects of personalized mentoring:
  - integrated centralized content management and delivery
  - integrated video conference, messaging, white board, application sharing
  - profile portfolios and digital library content
  - adaptable environment

# e-Mentoring Team

- team support solution:
  - personal mentor hotline, bio's of mentors on-call
  - access of customer profile and customer portfolio, past consulting sessions work, additionally assessment data and relevant auxiliary media
  - mentors able to view portfolios of customer and relevant organization (university/company) and compare patterns of concerns and issues within the organization and by customers within the organization

# e-Mentoring Library

- knowledge management solution:
  - dedicated to meeting requirements and refining mentoring goals and knowledge objectives
  - mentors able to access data in terms of mentoring priorities, appearing consistently throughout presentations and sessions
  - knowledge discovery as by-product of the data mining component
  - all data analyzed in real-time to provide the best-fit mentoring session

# Technical Issues

- rich media and interactivity
  - synchronous/asynchronous access
- video streaming
  - two-way communications
  - one-way content playback
- content synchronization
  - customer/mentor/content/access mode
- content server
  - storage/management/security

# E-Mentoring Perspective

- Differentiators

- advanced information management technologies for individualized mentoring programs and highly adaptive content management, analysis and reuse of content
- advanced telecommunications technology to support interactive access to rich media and two way video streaming with integrated collaboration tools

- Strengths

- highly customized mentoring to meet *practice* requirements
- individualized support anywhere/anytime/any content
- patent pending business method solution

# Solution Method Claims

- content management
  - knowledge acquisition
  - digital library
  - data warehouse
  - data mining
  - knowledge discovery
- telecommunications design
  1. customized asymmetric two way real-time video streaming
  2. synchronous coordinated content and video/audio access
  3. asynchronous independent content access
  4. asynchronous coordinated content access

# Carousel Website

broadcast content and interactions



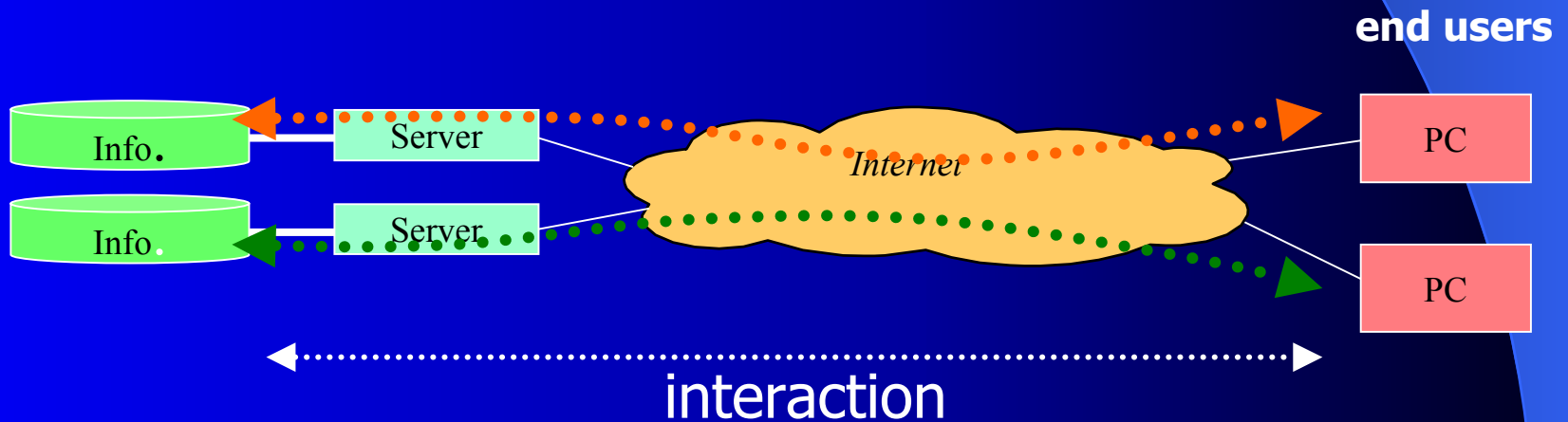
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# Carousel Website

- satellite-based solution to deliver the interfaces and interactivity of the Internet without the complex and costly infrastructure (wired/wireless) required for Internet access
- requires only a digital set top box (DSTB) and a television or computer
- complementary universal content enablement solution for multi-purpose content and multiple delivery/access channels
- applications: education/training, sports, entertainment, publishing, healthcare

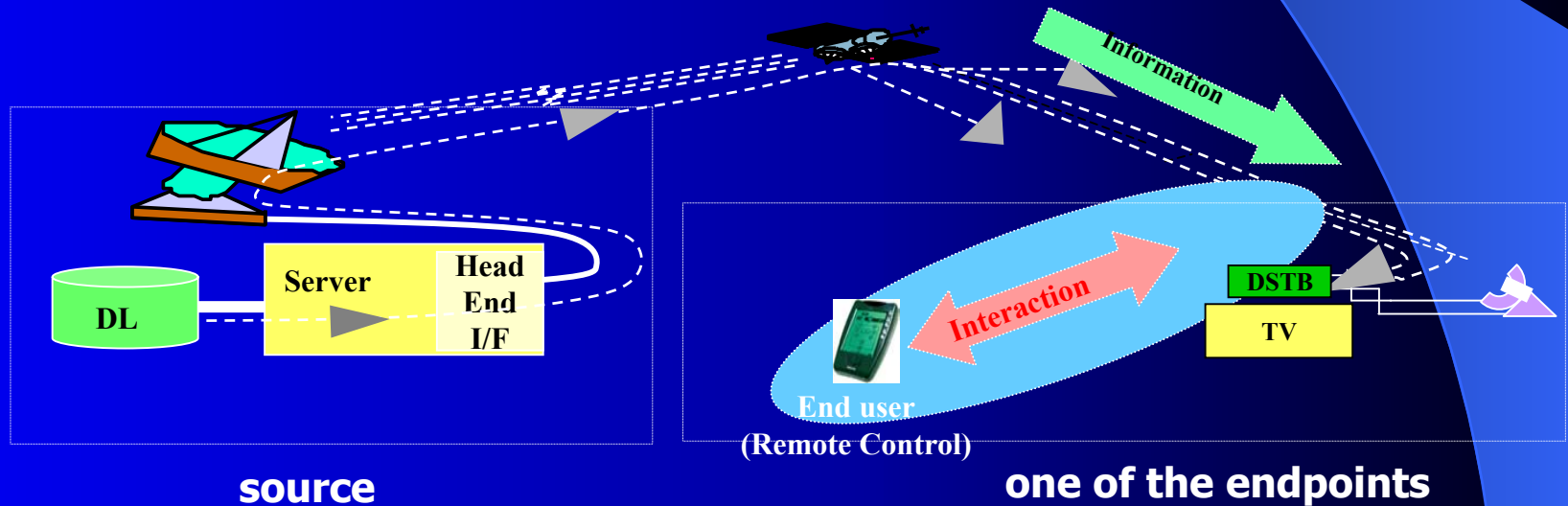
# Internet Websites

- complex set of bi-directional networks must be traversed for each transaction between end-user and information repository



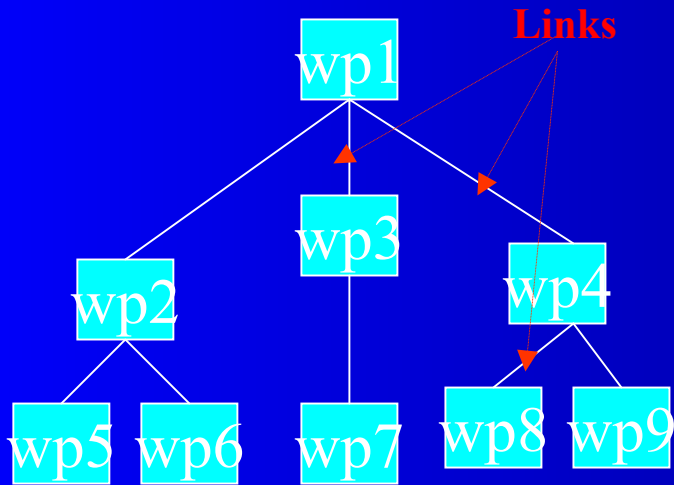
# Carousel Websites

- carousel interaction takes place between the end user (remote control) and the DSTB



# Multidimensional Carousel

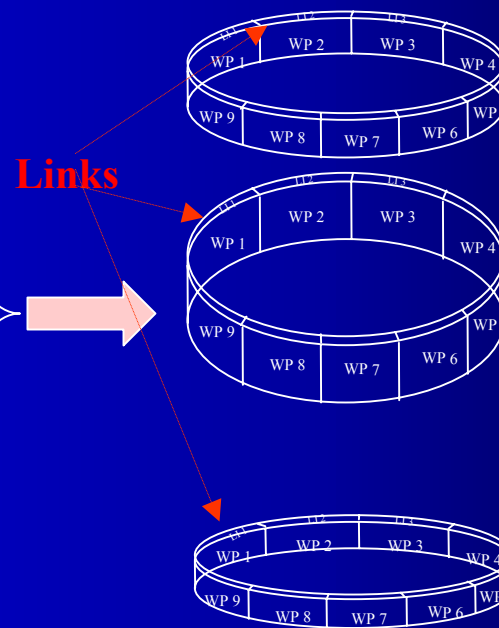
Website organization



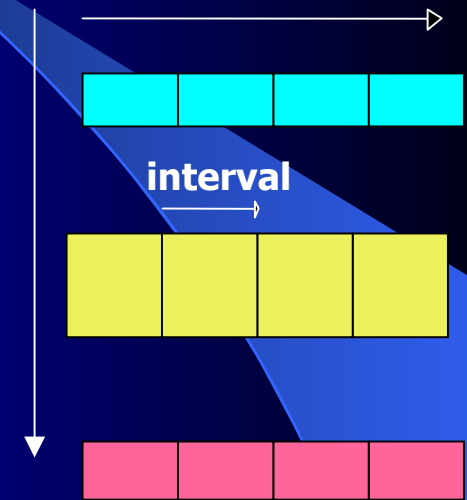
CWS matrix

1	2	3					n
2	x	x	x				
3	x						
	x						
n							

multidimensional  
CWS broadcast



time dimension



patented solution: US patent granted

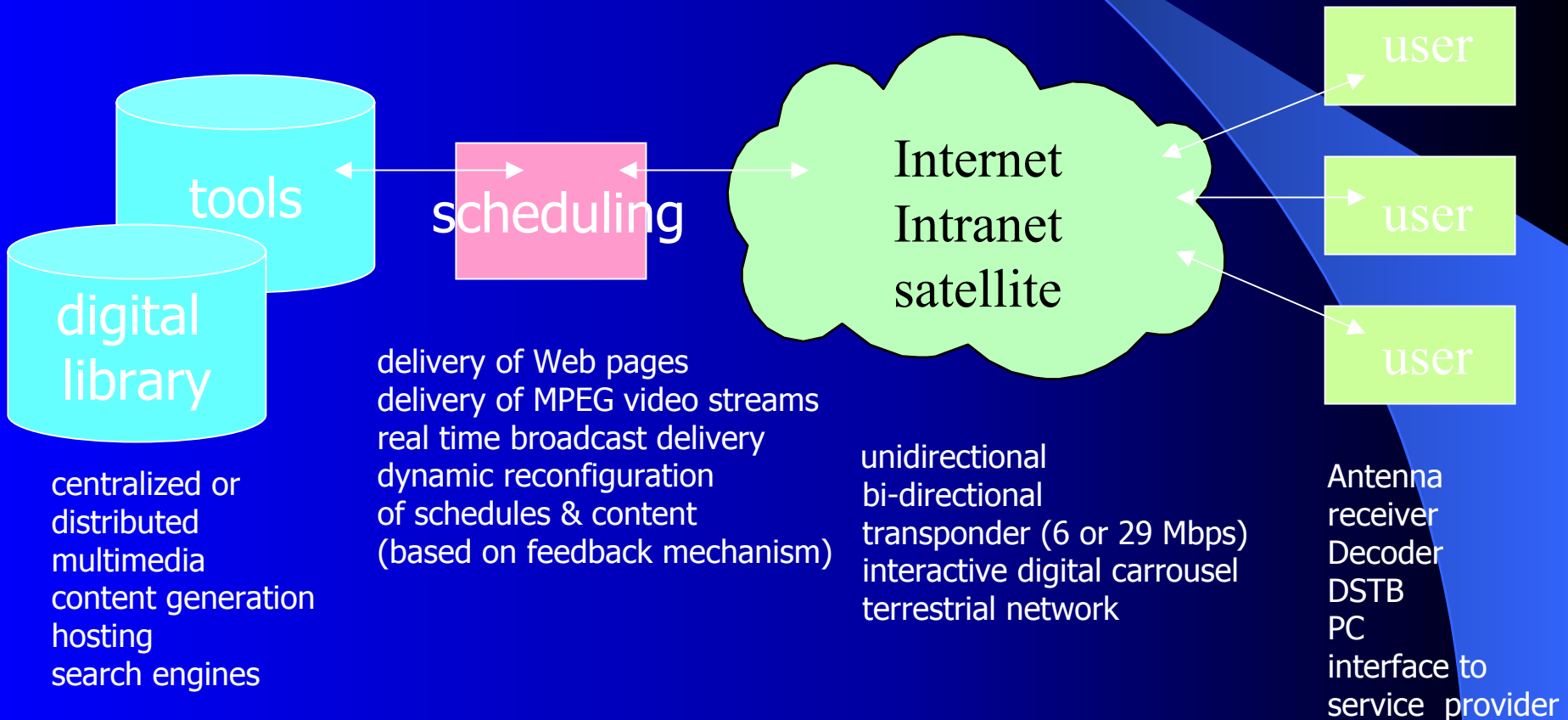
# Architecture and Components

content

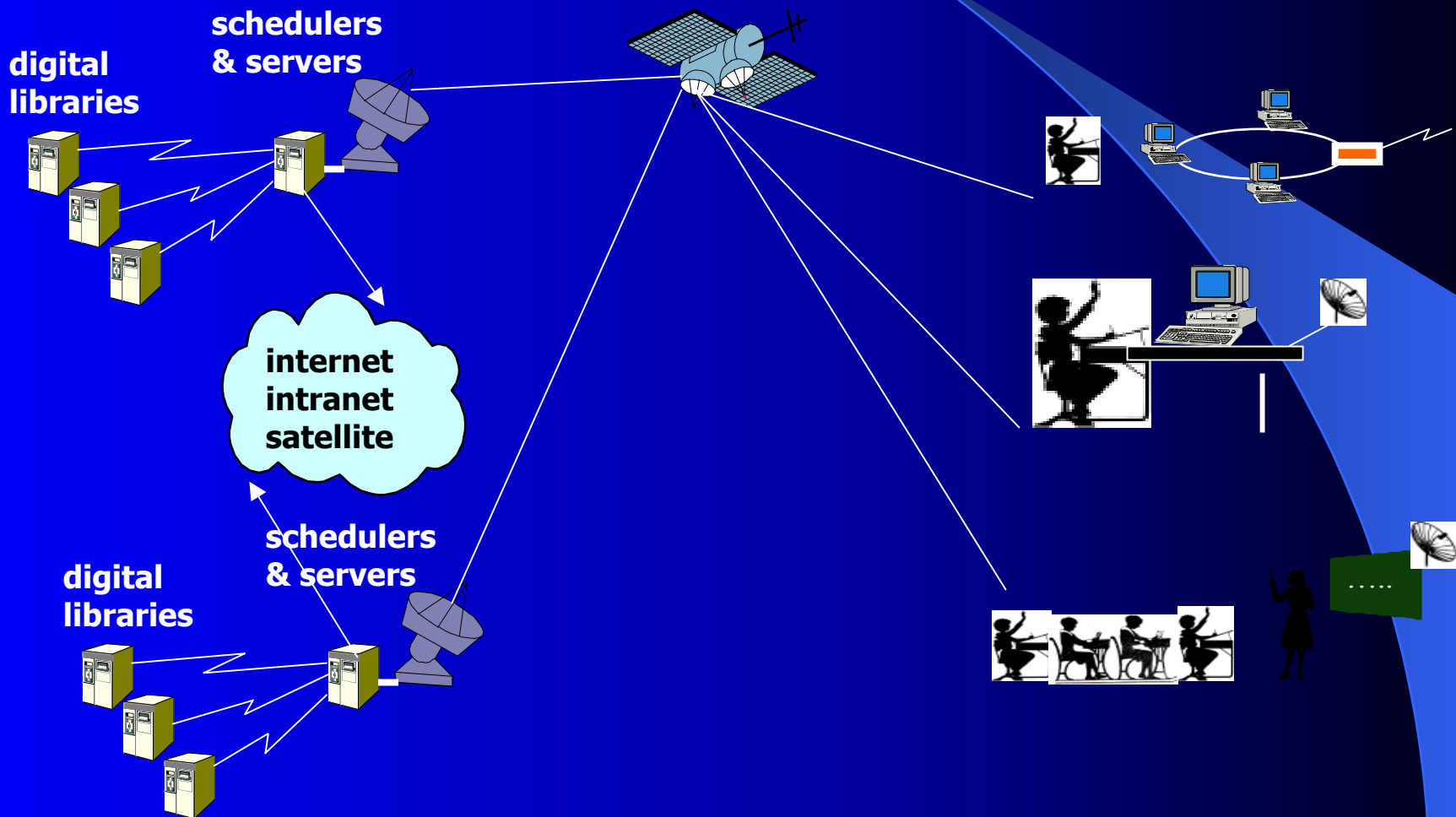
servers

distribution network

receivers

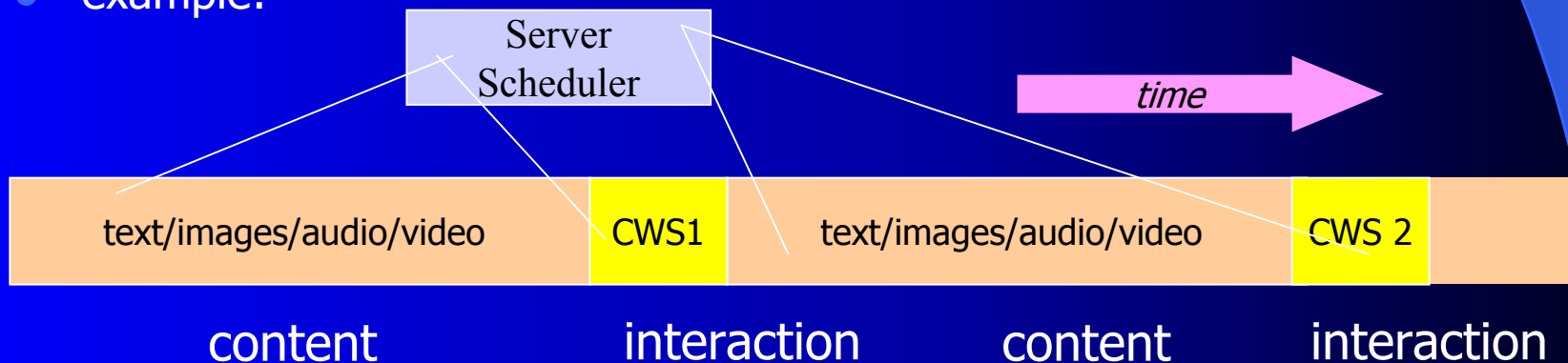
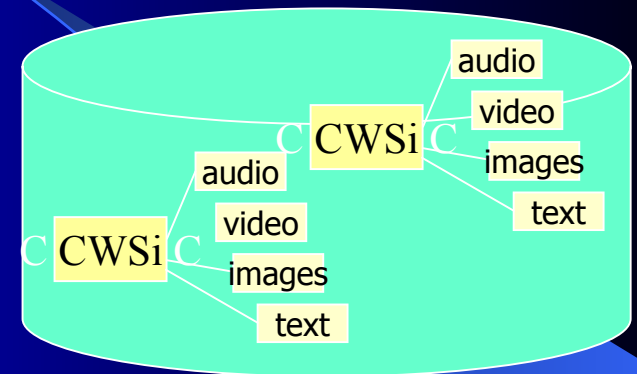


# Solution Implementation



# Organization of Information

- base unit: Carrousel Web Site CWS
- definition: 1 lesson = 1 CWS
- each CWS comprised of:
  - text
  - images
  - audio
  - video
- each session starts with broadcast of text/images/audio/video and is followed by interaction with the CWS
- example:



# Solution Method Claims

- content management
  - CWS content organization
  - links management
  - rich media access
  - emulates CD-ROM
  - emulates Web pages
- telecommunications design
  1. full broadcast channel bandwidth
  2. time dimension scheduling
  3. perceived personalized interactivity
  4. scheduled real-time updated content

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thank you...



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