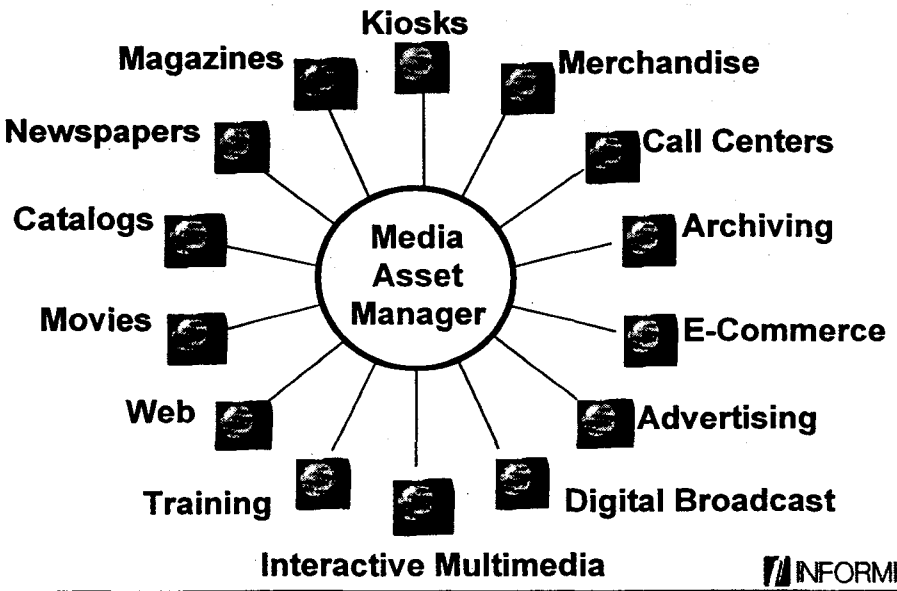
Informix
Media Asset Management

BBC Case Study

Where do Media Assets get (re)used?



Who needs Media Asset Management?

- **Publishers**
  - Any company publishing newspapers, magazines, catalogs or Web sites
- **Content Creators**
  - Companies who create content for use in their business
  - Broadcasters, Advertising Agencies, Studios, Sports Houses (NBA, NFL), Corporate Training Depts, Retailers
- **Content Distributors**
  - Cable Operators, Telecoms, Internet Service Providers, Online Service Providers

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Who needs Media Asset Management?

- **There's a LOT of money being spent on this kind of technology, and not just by 'media' companies**
  - Retailers, for catalogs, web sites, call centers
  - Chems/Pharms, for drug discovery, knowledge management
  - Legal, for document and knowledge management
  - Federal, for video surveillance and knowledge management
  - Manufacturing, for integration of CAD, text and business-to-business applications
  - Anyone with a Web/Content Management challenge

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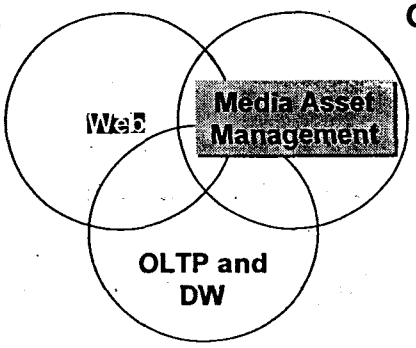
Who needs Media Asset Management?

Organizations with existing web sites, where things are getting out of hand



Organizations with lots of complex information, who need to store and distribute it

Organizations with data (OLTP and DW) which needs to be web-enabled

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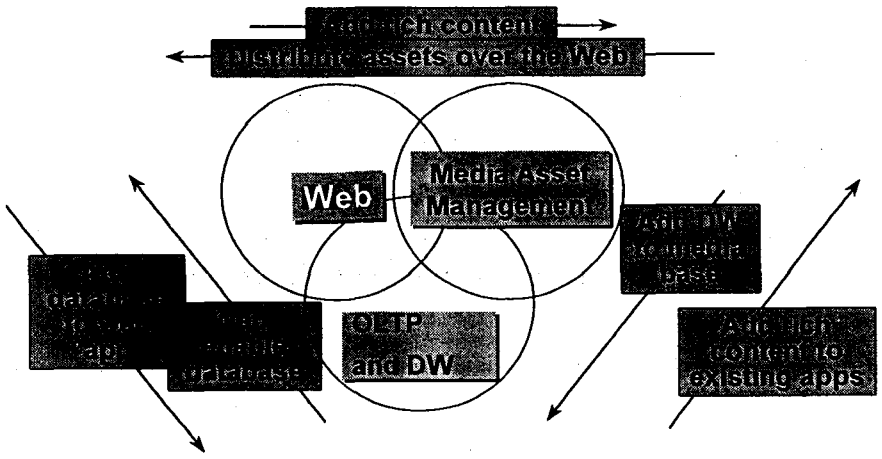
What do they need?



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What was the BBC's challenge?

- **Re-use**
  - Content is wasted, re-invented, not being re-used
- **Efficiency**
  - Too much information to manage
  - Content is not being integrated with business processes
  - Content is not available for collaboration
- **Preservation**
  - *Video, celluloid, film is literally rotting on the shelves*

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What were the BBC's goals and objectives?

- **Visionary**
  - Consumer experience (WOW! factor)
  - Needed to address Media asset acquisition, management, and delivery
- **Innovative**
  - Wanted to use leading edge technologies
- **Raise questions**
  - How could this benefit the rest of the BBC's operations?
  - What would it mean for delivery of digital television?

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What solutions did BBC need?

- **Media Asset Acquisition**
  - Catalog and digitize
- **Categorization, Indexing**
- **Tools Integration**
  - Authoring, Editing
- **Retrieval**
- **Version Control**
- **Royalty Management**
- **Workflow Management**
- **Asset Recycling**
- **Web Integration**

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Project milestones

- **BBC issued Request for Proposal**
- **Informix won the bid**
- **Project started in July 1997**
- **Informix primed and managed the project, designed and implemented the Pilot Operating Center**
- **First phase completed in September 1997**
- **Since then, over 500 executive staff and visitors and have toured the POC**

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The main elements of the POC

- **Production (getting the content in)**
  - Media asset acquisition
  - Media Asset Management
  - Media browsing
  - Media classification
- **Delivery (getting the content to the viewer)**
  - Home and Office interaction
  - Display devices

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Production: Getting the content in

- **Assets are registered through Bulldog's Asset Management software**
- **Key frames are generated through the Virage Video Cataloger**
- **Informix application encodes in MPEG-1 (1.5 Mbps), MPEG-2 (6.2828 Mbps) and Microsoft NetShow (VXtreme, 28.8 Kbps)**
- **Key frames and encoding formats linked using Informix Video Foundation DataBlade**

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Production: Getting the content in (and organizing it)

- **Relate stills, documents and audio segments with the video asset**
- **Key word searching of video titles, descriptions and documents**
- **Content based retrieval of image and audio assets**
- **DataBlades: Web Integration Option, Informix Video Foundation, Excalibur Text, Virage Image Recognition, Muscle Fish AIR libraries**

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Production: Getting the content in (and organizing it)

- **Content Classification**
  - Application built by Informix consulting
  - Provides access to digital archive
  - View Assets as Audio, MPEG-1 and Microsoft NetShow (VXtreme) formats
  - Concept of working folders for re-indexing content for distribution
  - Web based : HTML, Java scripts, ActiveX
  - DataBlades: Web Integration Option, Video Foundation, Excalibur Text

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Delivery : Getting content to the viewer

- **Numerous ways of searching content across different genres; Drama, Comedy, Sports, Cookery, News etc**
- **Combines video, images, audio and text**
- **30 Hours of MPEG-2 (6.2828Mpbs)**
- **Numerous display devices**
  - Home: flat panel displays, touch-sensitive screens, projection systems
  - Office: Internet browser

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Immediate benefits to the BBC

- **Able to add value to the existing video archive process (which had been targeted at preservation)**
- **The basis for an all-digital studio network**
  - content acquisition, editing, management and distribution
- **Able to re-use content in program making, and new interactive services for the home**
- **Links between post production facilities, desktop editing and the digital archive**
- **Links with existing OLTP systems**
  - royalty, rights management, contracts, programming schedule

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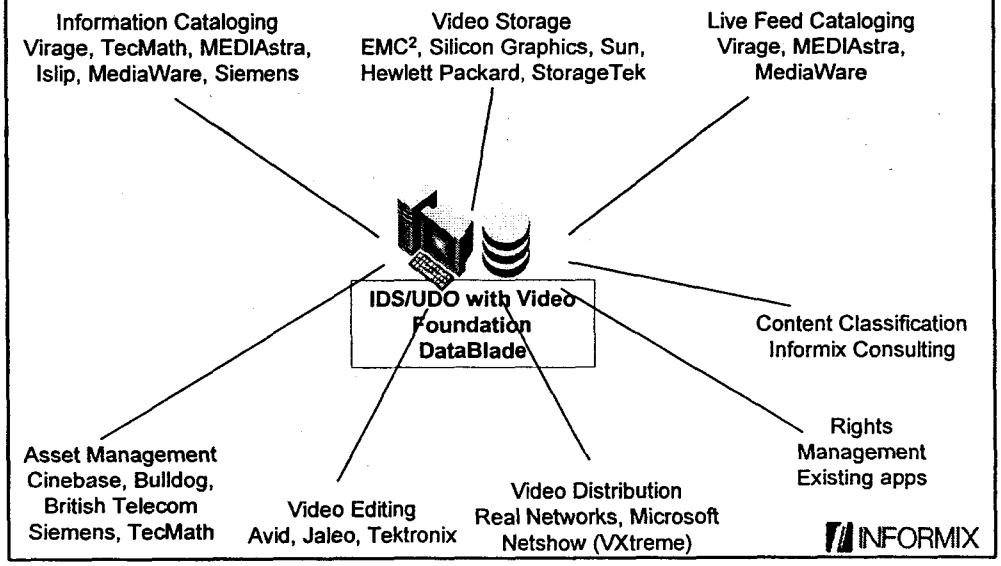
What did Informix build?



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Partners

- **Virage (Cataloger)**
- **Bulldog (MAM)**
  - Cinebase (MAM)
  - British Telecom Correlate (MAM)
- **EMC (Network storage and video server)**
- **Sun (Database, Web and NetShow server)**
- **Excalibur, MuscleFish (DataBlades)**
- **Helium³ (User Interface)**
- **Sony**
- **Toshiba**
- **Hewlett Packard**
- **Cabletron**

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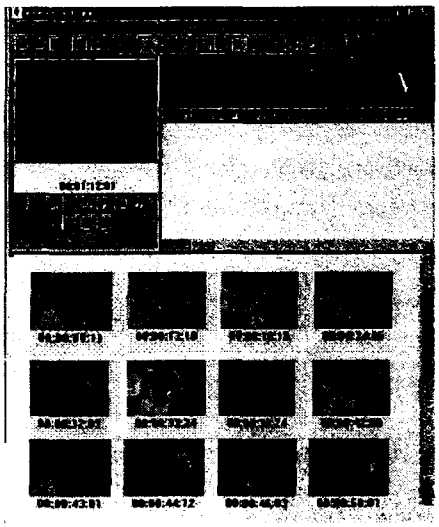
Video cataloging



- Acts as table of contents to the video
- Video processed in real-time or faster than real-time: as video is played, key frames are extracted
- This example from Virage; other solutions from Islip, TecMath, MEDIAstra, MediaWare, Siemens

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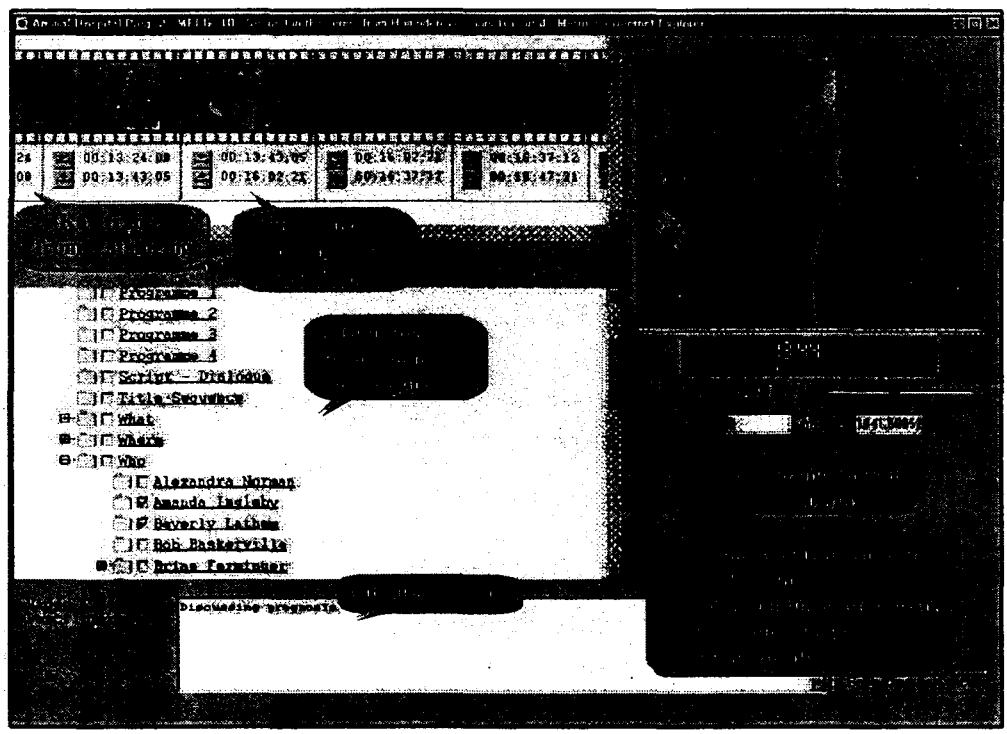
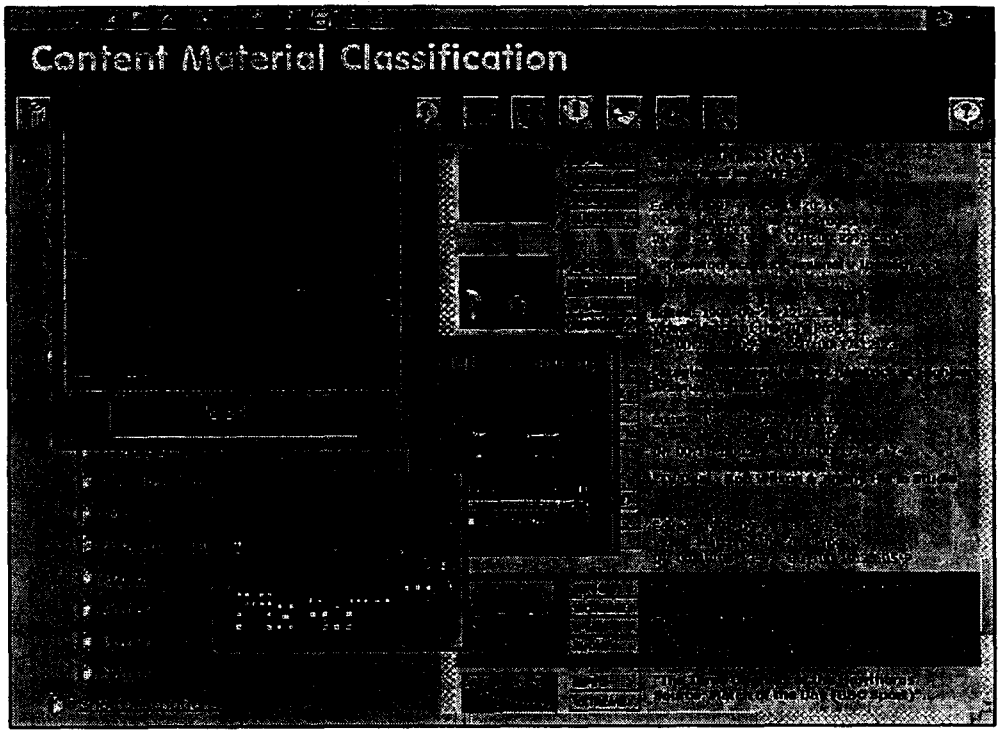
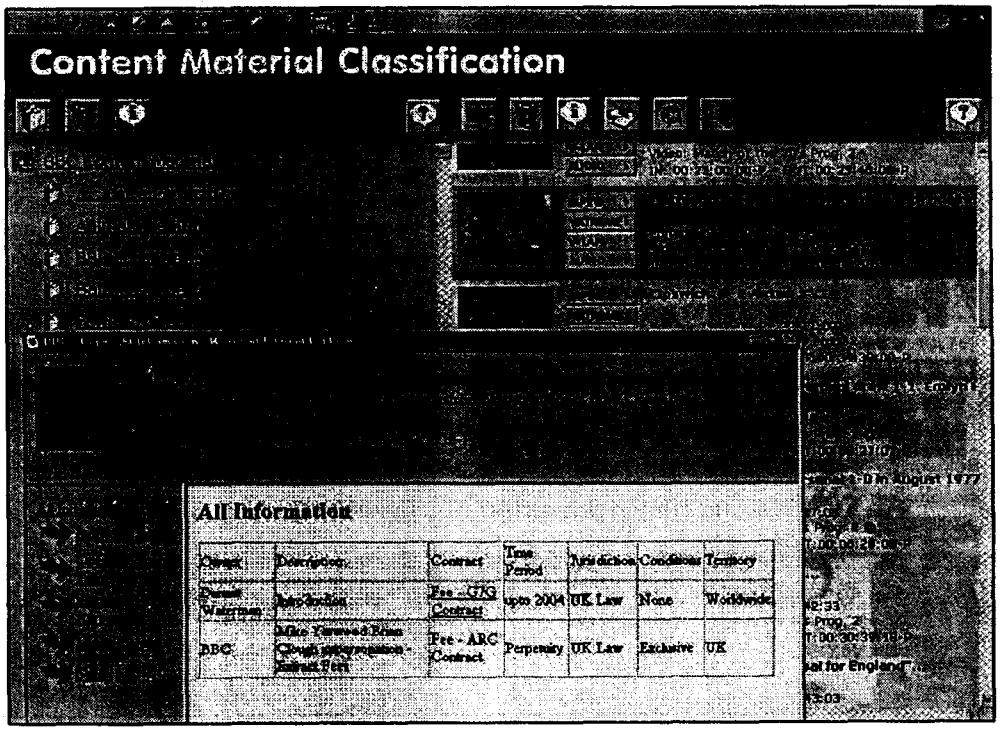
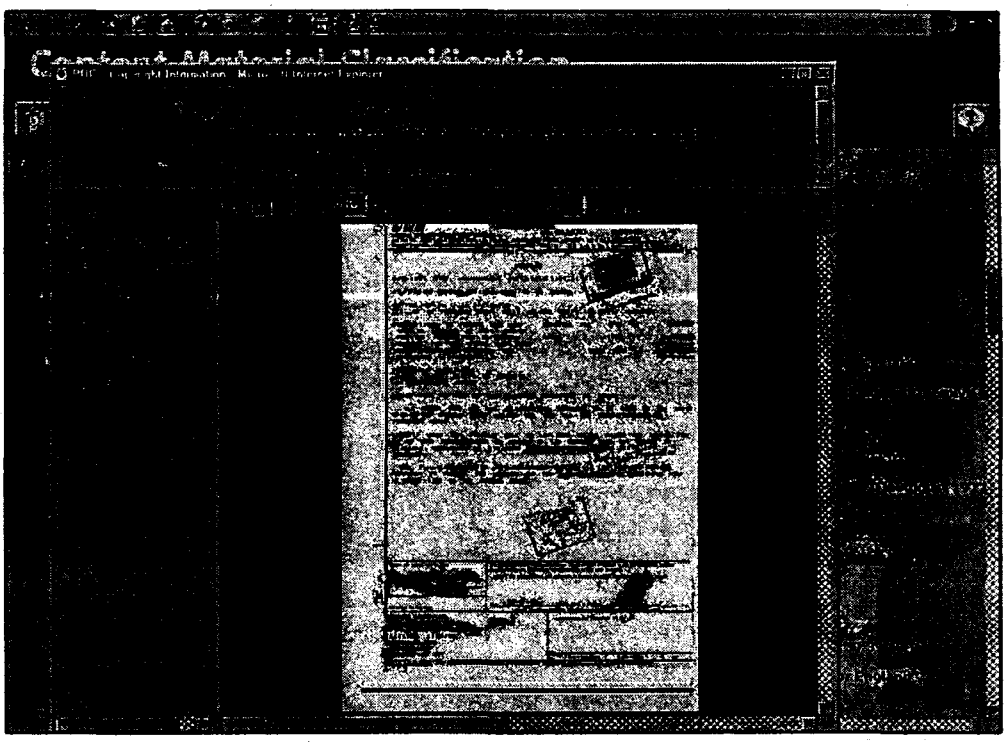



Content Material Classification


Content Material Classification
All Information
Contract
Time Period
Jurisdiction
Conditions
Territory
Free - GTG Contract
upto 2004
UK Law
None
Worldwide
Free - ARC Contract
Perpetuity
UK Law
Exclusive
UK



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What did the BBC learn?

- **Raised the important question of convergence**
  - Acquisition, editing, viewing, distribution, telecoms, storage, the web etc etc
- **No single partner product has the total solution**
- **Integrating a comprehensive Media Asset Management solution requires a framework to link partner technologies together**
  - Open APIs and partner SDKs for integrating media asset management components are essential
  - DataBlades are key: helped us build media-rich applications quickly and easily

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What's next?

- **How do we get this to the home?**
  - Work has started on looking at ADSL, and an architecture for delivering BBC content to the home
- **How do we protect content?**
  - Watermarking technologies to protect the copyright of images, video and documents
- **How to collect and analyze demographic data?**

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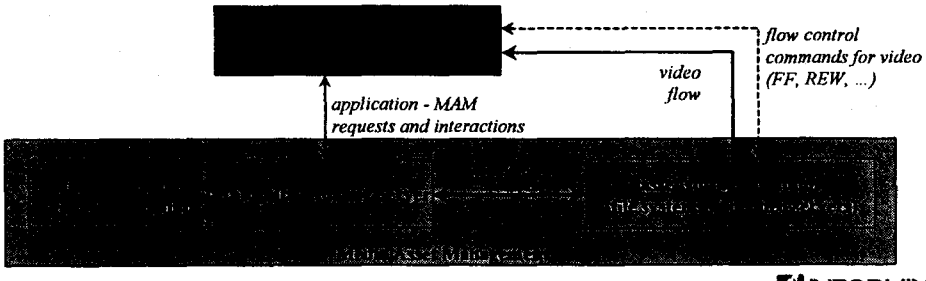
Software Architecture

- Video is not stored in the database to preserve performance of video playback
- Video content is controlled by the database to preserve data integrity
- Video content can remain on video tapes (outside of databases integrity control)
- Database also maintains time-based and other information



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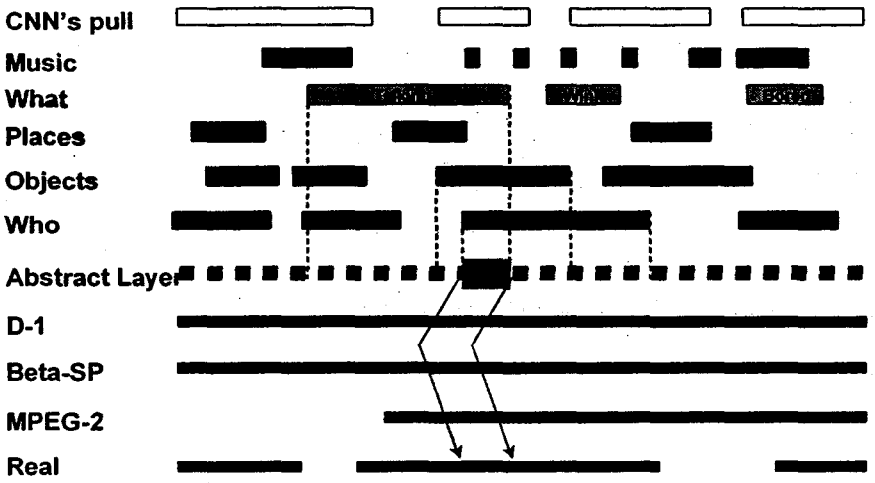
Data Stratification



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Informix Differentiators for Text

- **Full text indexing, including extensive support for fuzzy-search logic**
- **Advanced input and output options**
  - Support for over 200 file formats
  - Highlighting of text "hits" within original documents
  - Automatic indexing of text in any computer-generated data including ASCII files, e-mail messages, SGML documents, and WP files
- **High precision, recall, and relevancy in applications that require full text retrieval or ad hoc text query**
- **Thesaurus support, multiple stop-word lists, and proximity based searches**

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Informix Differentiators for Image

- **IDS indexes, sorts images based on actual content**
  - Allow more advanced applications to meet your customer's performance needs
- **All popular image format types are supported**
- **All standard image operations (scale, rotate, etc) are supported**
- **Signafy DataBlade enables invisible water marking**
  - Protects assets within the integrated information management framework

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Informix's Differentiators for Video

- Ability to simultaneously store program level and sub-program level information
- Indexing specific for sub-program level information
- Automatic mapping of information from one video format to another
  - Information entered independent of video format
  - Information retrieved independent of video format
- Metadata is more than just text related to a video program
- Stratified view of video information

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Now, what's you need?

- **Store all your media assets in one place**
  - Text, audio, video, maps, Quark™, metadata, etc
  - Seamless integration with video catalogers, content digitizers, publishing and editing systems
- **Search all your assets at once, with powerful tools**
- **Search on the content itself, not just manual keywords**
  - Which assets contain something about "women and smoking", or a picture of a woman smoking a cigarette, or someone talking about "teenage smoking"?

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