



GLOBALIZATION OF INFORMATION HIGHWAYS AND THE NEED FOR NEW FORMS OF WEBDATA AND METADATA

**Prepared by: Dusan Soltes, Faculty of
Management, Comenius University,
Bratislava, Slovakia**



INTRODUCTION

Ω **DATA ANALYSIS AND/OR ANATOMY**

Ω **FOR METADATA ON THE WEB**



COMPONENTS OF INFORMATION SYSTEMS

- ∩ - DATA
- ∩ - INFORMATION
- ∩ - PEOPLE
- ∩ - HARDWARE
- ∩ - SOFTWARE
- ∩ - ORGWARE
- ∩ - ...



DATA/INFORMATION

- ∞ - THE MOST IMPORTANT COMPONENTS OF ANY IS
- ∞ - DATA IS THE PHYSICAL REPRESENTATION OF INFORMATION REFLECTING THE REAL WORLD
- ∞ - INFORMATION IS THE SEMANTIC CONTENT OF DATA AND INFORMS ABOUT THE PHENOMENA AND PROCESSES OF THE REAL WORLD

TYOLOGY OF DATA/INFORMATION

∩ PHYSICAL REPRESENTATION:

∩ - BIT - DATA WAREHOUSE

∩ - BYTE - WEB DATA

∩ - WORD/ITEM

∩ - RECORD

∩ - FILE

∩ - DATA BASE



DATA BY LOCATION

Ω - PHYSICALLY LOCATED

Ω - VIRTUAL (WEB)



DATA FUNCTIONS

Ω - IDENTIFICATION

Ω - CLASSIFICATION

Ω - QUANTIFICATION

Ω - DESCRIPTION

Ω - AUDIO/VIDEO PRESENTATION

Ω - MULTIMEDIAL PRESENTATION



TYOLOGY OF DATA

- ∩ - NUMERICAL
 - ∩ - ALPHABETIC
 - ∩ - ALPHA-NUMERIC
 - ∩ - TEXTUAL/RICH TEXT/HYPER TEXT
 - ∩ - GRAPHICAL
 - ∩ - GEOGRAPHIC/SPATIAL
 - ∩ - VIDEO
- AUDIO
 - MULTIMEDIAL



DATA SEMANTICS

- ∩ - STATISTICAL
 - ∩ - PLANNING
 - ∩ - FINANCIAL
 - ∩ - ACCOUNTING
 - ∩ - MARKETING
 - ∩ - COMMERCIAL
 - ∩ - BUSINESS
 - ∩ - EDUCATION
- KNOWLEDGE
 - E- ...



DATA TIME CHARACTERISTICS

- ∞ - REAL TIME
- ∞ - CURRENT
- ∞ - HISTORICAL
- ∞ - ARCHIVE
- ∞ - PROGNOSTIC
- ∞ - PLANNING
- ∞ - FUTURISTIC

FORMS OF DATA HOLDINGS

Ω - DATA FILE/SET

Ω - TIME SERIE

Ω - REGISTER

Ω - CLASSIFICATION

Ω - NOMENCLATURE

Ω - CODE-LIST

Ω - AUDIO FILE

- VIDEO FILE

- MULTIMEDIA FILE

- TEXTUAL FILE

- MAP

- ANIMATION



ORGANIZATION OF DATA

- Ω - SERIAL
 - Ω - SEQUENTIAL
 - Ω - INDEX-SEQUENTIAL
 - Ω - HIERARCHICAL
 - Ω - NETWORK
 - Ω - RELATIONAL
 - Ω - MULTIDIMENSIONAL
- HASH
 - FUZZY

DATA ACCESS, PRIVACY, CONFIDENTIALITY

∩ - PUBLIC/OPEN

∩ - RESTRICTED

∩ - CONFIDENTIAL

∩ - SECRET

∩ - TOP SECRET

∩ - ...

- INTERNET/WEB BASED

- EXTRANET

- INTRANET

- LOCAL NET

- NON-NET

- ...



DATA LEVELS

Ω - MICRODATA

Ω - MACRODATA

Ω - ORIGINAL

Ω - DERIVED

Ω - INDIVIDUAL

Ω - AGGREGATED

METADATA - META INFORMATION

- Ω - METADATA IS THE PHYSICAL REPRESENTATION OF META INFORMATION AND IS A DESCRIPTION OF DATA
- Ω - META INFORMATION IS THE SEMANTIC CONTENT OF METADATA AND INFORMS ABOUT INFORMATION

TYPES OF METADATA

- ∞ - DOCUMENT ORIENTED
- ∞ - OBJECT ORIENTED
- ∞ - MACRO
- ∞ - MICRO
- ∞ - LOCAL
- ∞ - GLOBAL
- ∞ - CLASSIFICATION
- ∞ - CONCEPTUAL
- ∞ - OPERATIONAL
- ∞ - ORGANIZATIONAL
- SEMANTICAL
- TECHNICAL
- INFOLOGICAL
- DATALOGICAL



METADATA HOLDINGS

- ∩ - CATALOGUE
- ∩ - DICTIONARY
- ∩ - DIRECTORY
- ∩ - GLOSSARY
- ∩ - THESAURUS
- ∩ - REGISTER
- ∩ - CLASSIFICATION
- ∩ - CODE-LIST
- ∩ - NOMENCLATURE
- ∩ - METADATA BASE
- METADATA WAREHOUSE
- METADATA WWW

METADATA OBJECTS (STATISTICS)

- ∩ - INDICATORS
- ∩ - FORMS/SURVEYS
- ∩ - PUBLICATIONS
- ∩ - FILES
- ∩ - OUTPUT TABLES
- ∩ - TIME-SERIES
- ∩ - ALGORITHMS
- STATISTICAL POPULATIONS
- STATISTICAL UNITS
- CLASSIFICATIONS
- NOMENCLATURES
- CODE-LISTS
- PHENOMENAS

METADATA FUNCTIONS

∞ - INFORMATION

∞ - DOCUMENTATION

∞ - INTERPRETATION

∞ - NAVIGATION

∞ - SERCHING

∞ - ORIENTATION

∞ - RETRIEVAL

- PROCESSING

- PRESENTATION

- UTILIZATION

- INTEGRATION

- COMARISON

- RATIONALIZATION

- GLOBALIZATION

METADATA MODELS, TOOLS, METHODS, STRUCTURES, SYSTEMS

- ∩ - ISO/IEC 11179 - SIDI/SDOSIS
- ∩ - UML - METIS
- ∩ - MDA - GESMES
- ∩ - XML/XMI - NESSTAR
- ∩ - DDI - CLAMOUR
- ∩ - CWM - METANET
- ∩ - ESPLORIS - MOF
- ∩ - INFOLOGIC - DATALOGIC

METADATA MODELS, TOOLS, ... (CONT.)

- Ω - MOM
- Ω - ISTAT
- Ω - IQML
- Ω - IDARESA
- Ω - SDSS-GDDS (IMF)
- Ω - CMR
- Ω - GESMES
- Ω - CORBA
- Ω - CODAM
- MIMAMED
- MAMEOB
- CRISTAL
- FASTER
- NEUCHATEL GROUP
- DUBLIN CORE
- TRIPLE S
- SGML/XML
- ...



FUTURE OF THE WEB-BASED METADATA

∞ - STANDARDIZATION

∞ - UNIFICATION

∞ - HARMONIZATION

∞ - GLOBALIZATION

∞ - ...

**∞ ONE OF THE PRACTICAL EXAMPLES IN THIS DIRECTION
IS THE EU FUNDED METANET PROJECT**