JOHN K. SHARP, PHD
SHARP INFORMATICS
PRINCIPAL CONSULTANT

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RELEVANT EMPLOYMENT HISTORY

Sharp Informatics Founded in 1997

- John Sharp is the founder and principal consultant of Sharp Informatics. Utilizing Natural Language Modeling (NLM), Sharp Informatics' proprietary algorithm, Subject Matter Experts answer simple questions about their area of expertise. NLM then processes the answers and either creates or validates the information system design. Experts' accountability helps ensure project success. The results of modeling efforts are presented in the format specified by the customer. The primary services offered by Sharp Informatics are creating NLM information models, and providing training in the NLM procedure.
- Clients include:
  - National Institute of Health
  - Sandia National Laboratories
  - Idaho National Engineering Laboratory
  - Boeing, Ball Engineering
  - Department of Energy
  - Department of Commerce
  - Battel Laboratories
  - Sprint
  - Honeywell Kansas City Division
  - Peco Energy
  - SRA International

PROJECTS & EXPERIENCE

National Institutes of Health Enterprise Architecture

- Enterprise architecture defines the corporate rules for managing knowledge and technology. Dr. Sharp developed data models that support several aspects of enterprise architecture. The ability to track the record copy of an object has been modeled and prototyped. Subject areas included architecture principles, technology bricks and patterns, technology and corporate standards, application history, and process definition. The corporate definition of Party (Person, Organization and Intelligent Agent) has been extensively modeled. Various aspects of this modeling effort are now being implemented in order to support the enterprise architecture effort. He created formal data standards for Enterprise Architecture, Grants, R&D Contracts, External Researcher, and Organization.

Grant Coding

- Grant coding is the assignment of grants or portions of grants to specific diseases, treatments, and/or patient demographics. In some cases, specific codes are required to be reported to Congress. Dr. Sharp developed a data model that supports the integration of codes across institutes and assignment of specific codes to grants. A data model defines the identified rules and a process model provides a mechanism for data input and rule enforcement. A prototype application was developed to show how the precise model can be directly implemented.

Export Control System

- Export control licensing requests of high-technology and dual-use technology are generally originated within a single government agency. Dr. Sharp modeled the registration of export commodities, various types of export control rules, anti-boycott and computer sales reporting rules, and intra-agency historical evaluation of suspected export control violations.

Cross Agency Export Control System

- The license evaluation for high-technology and dual-use exports can require reviews from multiple government agencies. Dr. Sharp developed data models that support the integration and transfer of export control data between agencies. Subject areas included general definition of the data on export control rules, definition of electronic support documents, and specializations for space launch documents.

Production Control Document

- The ongoing maintenance of the nation's aging nuclear weapons is critical issue within the Nuclear Weapons Complex. Dr. Sharp developed a data model that explicitly described the rules for production control aspects of the existing nuclear weapon stockpile. The model covered the various sites that were responsible for weapon parts, as well as the government agency responsible for their oversight.

Foreign Travel System

- A government agency approves and manages foreign travel for all of the agency branches and the government-financed companies that it manages. Dr. Sharp developed a data model for all process steps from requesting approval, granting approval, reporting on trip results, and reporting to Congress on various aspects of foreign travel. The project involved collecting information from several sites and providing a management report.

Conference Room Scheduling System

- A multi-site corporation needed to schedule conference rooms located in several states. Dr. Sharp developed a data model for defining conference rooms including video-enabled and multi-part rooms, multiple time zones, differing rules for individual sites, and blocking and releasing rooms.

Natural Language Modeling Training

- Training in the Natural Language Modeling algorithm has been provided in many formats. Dr. Sharp has offered a one-week introductory course. In addition, one to three day courses have been offered in conjunction with national data conferences and on-site requests from modeling customers. The course presents the data analysis theory and application, and then works with attending students to validate data models that they provide.

PAST EMPLOYMENT

1988-1997 Manager, Sandia National Laboratories

- Responsibilities included Corporate Data Administrator, Information Architect, Technical database design and development, and product test data repository. John managed between five and twenty staff, and for the last five years did technical model development and review. He also was the editor of an international standard on the specification of a standard conceptual modeling facility. He was instrumental in establishing engineering procedures for information system development.

1979-1988 Member of the Technical Staff, Sandia National Laboratories

- John analyzed and designed numerous information systems. He was the lead analyst on several technical databases that dealt with product test data, manufacturing processes, component databases, corporate networks, foreign travel requests, workflow, and others. He introduced Sandia to the NIAM (Nijssen's information Analysis Methodology) modeling procedure.

PROFESSIONAL DEVELOPMENT

Dr. Sharp is the creator of the first information analysis algorithm known to be mathematically precise. This procedure reformulates the usual (imprecise and inaccurate) statements and examples from a subject matter expert into verified fact types. The output of this productivity enhancing process (a set of information requirements) will generate the information system in any of the latest database application tools. He maintains contact with Prof. Nijssen and has had him review the NLM procedure. He has co-chaired two international conferences on natural language modeling and he has presented numerous papers and seminars at professional conferences.

PUBLICATIONS

NIH Standards

- 0025 (Standard) - NIH Enterprise Conceptual Data Model. Provides a specification of the key data entities that support NIH's business processes, an overarching framework to organize more detailed data architecture efforts, and a common taxonomy for describing data assets across NIH. January, 2007.

- 0026 (Standard) - NIH Grants Conceptual Data Model. Provides a specification of the key data entities and relationships that support NIH's grants business processes and provides an overarching framework to organize more detailed grants data architecture efforts and a common taxonomy for describing grants data assets across the NIH. April, 2008.

- 0047 (Standard) - R&D Contracts Conceptual Data Model. The Research and Development (R&D) Contract Conceptual Data Model (CDM) was developed to support the need for better organization of information assets and reporting on the research efforts conducted and supported at NIH. This document identifies the major R&D Contracts data objects and critical business rules. The result of implementing these objects and rules will be flexible information systems that more fully support business needs. May, 2010.

- 0052 (Standard) - NIH External Researcher Conceptual Data Model. The External Researcher Conceptual Data Model (CDM) provides a consistent and flexible data structure for the National Institutes of Health to store information about researchers external to NIH. An External Researcher is any person not working with NIH as an employee or contractor that takes part in research processes. NIH needs to provide permissions and allow access to processes for an External Researcher when doing business with NIH. A consistent approach to managing External Researcher data will facilitate tracking every NIH interaction over a person's career. June, 2010.

Journal Articles

- John Sharp, "Validating Software Requirements," Crosstalk, The Journal of Defense Software Engineering, Vol. 12, No 11, November 1999
- John Sharp, "Everything you ever wanted to know about 'City,'" Journal of Conceptual Modeling, June 1999
- John Sharp, "Precise Meaning of Object Oriented Models," Journal of Conceptual Modeling, April 1999
- John Sharp, "Zachman Framework," Journal of Conceptual Modeling, February 1999
- John Sharp, "Validating an Object Oriented Model," Journal of Conceptual Modeling, December 1998
- John Sharp, "Where is the 'Engineering' in 'Information Engineering?'," Journal of Conceptual Modeling, October 1998
- John Sharp, "Is it still a requirement if the subject matter expert didn't tell the analyst?," Journal of Conceptual Modeling, August 1998
- John Sharp, "De-normalized for Speed," Journal of Conceptual Modeling, June 1998
- John Sharp, "Business Rules Require Real-World Identifiers," Journal of Conceptual Modeling, May 1998
- John Sharp, "Sharp Informatics Example Problem," Journal of Conceptual Modeling, April 1998
- John Sharp and Barbara von Halle, "Introduction to Natural Language Modeling," Database Programming and Design, September, 1997
- John Sharp and Sjir Nijssen, "Natural Language Modeling Seminar," Database Design Summit, San Diego, CA, September, 1997
- John Sharp, "Natural Language Modeling Seminar," Software Quality Forum, Sandia National Laboratories, April, 1997
- John Sharp, "Business Rule Enforcement via Natural Language Modeling," Software Quality Forum, Sandia National Laboratories, April, 1997
- John Sharp, "Adopting the Natural Language Information Analysis Methodology in Your Corporation," NIAM-ISDM Conference, May, 1994

EDUCATION

- BS Electrical Engineering, Wichita State University, 1974
- MS Electrical Engineering, University of Illinois, 1975
- PhD Electrical Engineering, University of Illinois, 1979