

Expertool

Modeling Cognition and Complex Systems



The Expertool Platform - Accomplishments Overview



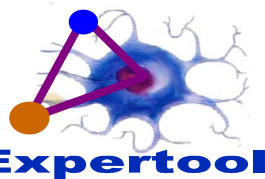
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Company Background

- We evolved our platform since 1996, addressing real-world complexity as we delivered solutions to global enterprise, academia and government
- Innovation by applying advances in biomimetic robotics and cognitive science to business technology and new methods
- Platform was internal toolset for service differentiation, now being launched in 2011 as a standalone application
- Current Research: Expertool leading NSF Nanoinformatics Meta-Ontology Pilot to develop new approaches for:
 - Knowledge Representation
 - Knowledge Quantification
 - Knowledge Sharing





Value Proposition Highlights

- Rapid and cost-effective modeling and integration of highly complex, multidisciplinary knowledge domains
- Dynamic improvement and adaptability of processes and systems without adding new infrastructure
- Turning human knowledge and expertise into an organizational asset
- Discovering undocumented rules, assumptions and interactions in complex heterogeneous environments



Accomplishment Examples

- The following six examples are typical, though not exhaustive
- The modeling was performed by Expertool and partner resources
- Project durations ranged from 1 – 6 months
- ROI was always achieved in 4 months or less (i.e. in some cases before project scope completion)



A- Rapid, Holistic Alignment & Architecture

- Problem – Inflexible budget and six month deadline (historically, six month projects in this organization averaged 2 years)
- Context – Call center reengineering project (staff = 80; average wait time => 20 minutes)
- Expertool Solution – *4 weeks*
 - Model strategic landscape (drivers, goals, constraints, etc.) with executives
 - Model operational options and metrics with management team
 - Model technical options and measures with engineering team
 - Review options and tradeoffs with executives to define project scope
 - Deliver process & technical architectures to managers and engineers
- Results
 - Project completed on time and on budget
 - Average wait time reduced to under 2 minutes (executive goal)



B- Cross-systems Discovery & Reconciliation

- Problem – Online activity data didn't reconcile with back end processing data
- Context – Global financial institution with diverse systems integrated due to mergers and acquisitions
- Expertool Solution – *6 weeks*
 - Model end-to-end process as understood by stakeholders
 - Gather specifications of impacted systems and simulate functionality
 - Gather/import extracts of one week of raw data from each system
 - Using simulated environment, discover and document interactions between the systems
- Results
 - Design errors discovered and data reconciled based on defined errors
 - Architecture defined to correct errors



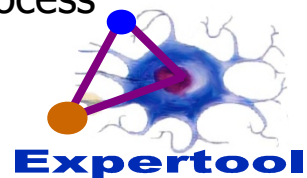
C- Large-scale Decision Process Optimization

- Problem – Comments by 300+ SME's on proposed IT controls yielded 3000+ issues for the 40 member Governance Council
- Context – Global 50 company; previous similar initiative required 18 months to complete
- Expertool Solution – *12 weeks*
 1. Import raw data from SME surveys
 2. Use automated methods and Council input to classify issues and SME's
 3. Deliver reports and Refinement Survey Matrices to Council members
 4. Use automated methods and Council input to refine results
 5. Weekly iterations of steps 3 & 4
- Results
 - All issues rationalized, prioritized and quantified
 - Decisions made on all high priority issues during the 12 weeks



D- Capturing & Reusing Operational Expertise

- Problem – Audit Finding: risk assessments and implemented controls highly inconsistent across similar projects and systems
- Context – Global, regulated organization; risk and control decisions were negotiated by business, IT and compliance staff
- Expertool Solution – *12 weeks*
 - Map business unit taxonomies to core Information Risk Model so that risk ratings are computed by selecting the information scope of the project
 - Add knowledge bases for process options, architecture options, controls, regulations and third-party options
 - Based on selections, generate Risk Assessment, Control Requirements, Regulatory requirements, Compliance Process and Vendor Requirements
- Results
 - Inconsistent 20 person/hr. process replaced by consistent 0.5 hr. process
 - Mappings requiring a 320,000,000 cell matrix were modeled using Expertool by 3400 nodes and associated interactions



E- Integration & Rationalization of Information Silos

Description published by client (Pfizer)

Upjohn Award for Tam Woodrum, Sr. Director

Pfizer, as a global publicly traded pharmaceutical company, is subject to a large cross section of IT-impacting regulations, standards and guidelines. It is imperative, moreover, that Pfizer uses its information in new and creative ways to innovate and gain competitive advantage. As a result, the IT compliance landscape is both complex and constantly evolving.

The source data, and the potential impact of regulatory change, is then evaluated using a proprietary modeling application (Expertool).

Managing this type of complexity requires unique software, capable of case-based reasoning and emulating human cognition. The modeling software uses unique neural maps and automatically synthesizes knowledge inputs from multi-disciplinary subject matter experts (i.e., technical, legal, etc.). As a result, WT Q&C can quickly rationalize and integrate internal controls as needed to address impending regulatory changes.



F- Evidence-driven Exploration & Discovery

- Problem – Significant investments made in organizational development based on accepted theory, but evidence is elusive
- Context – Global financial institution seeks to quantify impact of management structure decisions on unit performance
- Expertool Solution – *3 weeks*
 - Import organizational structure and historic performance data
 - Model theoretical assumptions and measures
 - Run automated discovery methods on structure-performance relationships
 - Simulate theory using diverse scenario analysis
- Results
 - Theory validated with historical evidence
 - Implementation strategy heuristics refined quantitatively