# Thomas Bock, Ph.D.

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# GENERAL BUSINESS SERVICES

#### **Business and Systems Analysis**

- Experience in developing and preparing information technology requirements and developing procedures to process data.
- Analyzed functional problems and determined techniques and requirements most feasible for an organization.
- Met with clients in order to gather, document, and analyze system/process requirements.

#### **Business Process Mapping**

- 10+ years' professional experience in business process mapping and process reengineering.
- Performed business process analysis and systems architecture design in DoD contracting environments.

#### **Continuous Process Improvement**

- Proactively identified opportunities to make further advancements with current processes, using available data and analytical capabilities to help guide business decisions (any work environment).
- Developed and managed project implementation schedules and supporting processes.

#### **Operational Analysis**

- 10+ years' experience in conducting quantitative and qualitative analysis for naval projects and joint tests. Responsibilities included defining Measures of Effectiveness (MOE) and Measures of Performance (MOP) as well as developing data collection and analysis plans for each operational and live/virtual/constructive (LVC) test.
- Applied Design of Experiments (DOE) and Statistical Process Control (SPC) using classical and Taguchi methods. Received training on screening/modeling orthogonal designs to ensure optimization of product design and/or testing processes.

#### **Process Reengineering**

- Provided business process reengineering support to large information technology organizations and DoD projects.
- Identified and resolved issues with limited direction—excelled in both individual and team projects.
- Obtained Ph.D. in Engineering Management from Old Dominion University.

# **Project Management**

- 10+ years' experience as data manager for several Joint Test and Evaluation (JT&E) and naval acquisition programs.
- Established knowledge management frameworks; introduced tools, templates, and practices for managing project's digital assets and information.

#### **Requirements Management**

- 10+ years' information systems experience (functional requirements gathering and analysis).
- Gathered and analyzed client business and technical requirements; developed innovative information solutions to improve business processes, productivity, and quality.
- Developed test and project plans following a structured development methodology (SDM).

# **Test and Evaluation**

- Developed and integrated methods/processes to support Director, Operational Test & Evaluation (DOT&E) initiatives to improve test & evaluation of complex system of systems (in support of operational mission effectiveness & suitability).
- Authored/co-authored all documentation (e.g., test plans, evaluation strategies, analysis plans, & final reports) necessary to conduct analysis for four joint tests and one quick reaction test (i.e., JTEM, JDI, J-FLaME, JLaSE, and JADE).
- Developed analysis methods/techniques, acted as management consultant, and managed mathematical operations related to testing non-material solutions for DOT&E projects.

# **Training Facilitation**

- Designed information management training modules.
- Delivered technical in-house training for all levels of management from project associates to senior military leaders (up to 2-star flag officers).

# DATA MODELING AND MANAGEMENT

# **Data Modeling**

- Experience in business and data analysis, data mapping, and data modeling (from project inception to implementation as well as client support transition).
- Worked as a business/data analyst for the as-is and to-be system analysis phases. Created IDEF0 business models (conceptual/logical/physical) and data flow diagrams.
- Delivered data model artifacts utilizing CA ERwin® Data Modeler and MS Visio.

# Data Science & Digital Transformation

- Utilized ALTERYX Analytics Automation Platform to deliver end-to-end automation of analytics, machine learning, and data science processes.
- Obtained ALTERYX certifications/credentials: Foundation; General Knowledge; Machine Learning; Data Preparation; Data Manipulation; Data Transformation; Designer Core; Designer Advanced.

#### **Database Development**

- 10+ years' relational database development experience.
- 10+ years' experience of VBA development (including GUI design).
- Designed database schema [table structure normalization to the 3rd normal form (3NF)].
- Developed and implemented complex MS Access database applications (cradle to grave) for clients.

# Digital Asset (Data) Management

- 10+ years' experience with digital asset (data) management concepts including, data architecture, data analysis, data quality, data governance, and data integration techniques.
- Mentored and advised team members on intricacies of data management, including but not limited to appropriate structuring, stewardship of data, semantics/syntax of data attributes, coding structures, and mapping schemes.

# **Extraction-Transformation-Loading (ETL)**

- Worked with project teams to develop customized extraction-transformation-loading (ETL) processes in order to transport large volumes of data into a central data warehouse.
- Standardized ETL processes and tools to automate data migration and reporting functions, resulting in significant reduction of manual activities (e.g., man-hours).
- Developed, and documented ETL-related objects; made recommendations for a more cost-effective product delivery.
- Implemented regular expression (RegEx) algorithm to parse through millions of raw system log (syslog) messages and convert content into matrix format for analysis purposes.

# Information and Knowledge Management

- 10+ years' experience in the area of information and knowledge management (KM) technologies.
- Coordinated and facilitated development of knowledge management processes to leverage information systems (IS) leading to the development of guidelines and detailed plans and policies for the effective and efficient utilization of KM technology resources [Chief Knowledge Office (TRADOC HQ)].

# **Modeling and Simulation**

- Received Master of Engineering degree (Modeling and Simulation M&S) and Certificate in M&S from Virginia Modeling Analysis and Simulation Center (VMASC) at Old Dominion University.
- Performed technical tasks involving the design, development, integration, test, validation of simulation models.
- Prepared formal technical documentation for target simulation systems and environments such as test plans, ICDs, simulation support plans and other materials based on program requirements.
- Research interests include verification and validation of data models, virtual simulation in distributed environments within the homeland security domain, and modeling & simulation.

# **Systems Engineering**

- Analyzed customer's business and infrastructure challenges and collaboratively identified suitable solutions (based on strategic business and operating models).
- Evaluated, recommended, and implemented new and more effective & efficient processes/systems.
- Identified and resolved system interoperability & integration (I&I) issues, concerns and I&I solution alternatives.

# SYSTEMS INTEGRATION

#### **Balanced Scorecard**

- Interfaced with military leaders and project management team to successfully implement a Balanced Scorecard (BSC) for the NATO Headquarters (Allied Command Transformation) in Norfolk, VA.
- The fully customized BSC product enabled Command Leaders to measure the organization's progress toward achieving its vision.
- Designed, developed, and implemented a Commander's Dashboard which provides TRADOC's commanding and deputy generals near real-time information (enabling them to readily see trends as well as detect anomalies across the entire organization).

#### Legacy Systems Conversion

- 7 years' experience as data integration consultant across various projects.
- Developed and fine-tuned complex extract-transformation-load (ETL) processes for two international multimillion dollar Enterprise Resource Planning (ERP) legacy system conversion (and data migration) projects.
- Created a fully automated data migration tool to support the data migration for not just the Risk Management Information (RMI) shipyard project but also to be used with future data migration requirements for the RMI contract.
- Considerable experience with data cleansing processes to ensure source to target system conversion accuracy (incl. the parsing of structure & content, correction & validation, standardization, and verification of converted business rules).

#### Software Development

- Designed, developed, and maintained C++ classes and libraries for state-of-the art simulation software (AJCOM model), providing a foundation for multi-platform product and interface development.
- Communicated standards and defended technology and scoping decisions to information technology management and development teams.
- Designed, tested, and implemented system interfaces and supported applications for delivery of company products to customers within contractual quality, schedule, and cost specifications.

# Systems Integration

- Applied a variety of design/test methodologies and performed software analysis methods to verify & validate (V&V) requirements, design, coding, and integration of database systems.
- Coordinated and executed integration of organization-wide balanced scorecard system.
- Interacted with other team members in a variety of disciplines to ensure that the individual sub-systems work together and perform the desired function.