The Business Value of Modeling
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• Communications Manager at Sparx Systems

• Over 2 decades of experience in computing and modeling
Sparx Systems

• Enterprise Architect:
  • Commercially released in 2000
  • Based in Creswick, near Melbourne, Victoria, Australia
  • 850,000+ paid users world wide
  • Designing and specifying ‘complex’ systems
  • Customers in all industries including Aerospace, Aviation, Retail Banking, Finance, Insurance, Healthcare, Government, Military, Utilities, Auto, Geospatial and much more
Agenda

- Discuss the Business Value of Modeling
- Reasons for implementing tooling
- Demonstration of the benefits using Enterprise Architect
- Questions and summary
The Problem

- Office tools are ubiquitous – not suited for all tasks
- Spreadsheets are not suitable for requirements
- Drawing tools are not designed for enterprise architecture
- Written reports and diagrams are static with no traceability
- As organizations mature and grow, a more comprehensive approach is required that scales
Benefits of Modeling

- Gain insight into an organization or system
- Understand the impact of change
- Reduce and mitigate risk
- Reduce Complexity
- Improve Process
- Transformation
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Benefits of Modeling

- Reuse
- Traceability
- Improves productivity
- Understand the business
- Make better decisions
- Retain knowledge
Benefits of Modeling

- Captures an understanding of the system
- Great for training or on-boarding of new staff
- Improves documentation
- Helps to decompose complex systems into meaningful chunks
- Improve maintenance
- Reduce defects
Communicate with Stakeholders

• Clear and Concise
• Models are easy to understand
• Explore connections
• Provide relevant information
• Easily accessible from any device
• Up to date
Problems with Office Tools

- Out of date the moment they are published
- Hard to distribute
- Static
- No feedback
- Hard to reuse without editing
Drawing vs Modeling

- Drawing is static and confined to a single diagram
- Any change requires a new diagram
- Content becomes out of date
- Difficult to maintain
- Hard to scale
What Enterprise Architect Offers

- Manage and gather requirements
- Model software and systems
- Model and analyze business processes
- Build design and behavioral models
What Enterprise Architect Offers

- Collaboration and team development
- Traceability from requirements through to deployment
- Model any system from a web application to embedded system
- Extensive project management support
- Test management and code engineering
Requirements - Gathering

• Offline means:
  • White Boards
  • Post IT Notes / Napkins / Notepads

• Software Based:
  • Word / Excel
  • Visio / Jira
  • Sparx Systems Enterprise Architect
Requirements – Whiteboards
Requirements – Whiteboard @6pm
Post IT Notes and Napkins
Post IT Notes – Advanced Mode
Right Tool for the Task at Hand

- Allow you to work as you always have done
- Will allow you to create understandable specifications
- Empower you to drive down steam activities
- Make subsequent projects faster
- Retain a history of decisions and implementations
Build Requirements

SMILE.
PASS IT 
ON.

SMILE.
PASS IT 
ON.
Convert to a Digital Approach
Work Like You Always Have
Structured Scenarios

- Text to structure
- Structure to model
- Structure to tests
Structured Scenarios

• Automatically create structured data out of existing requirements/use cases/user stories
Structured Scenarios

• Create Diagrams, Tests, Sequence Diagrams and more
Structured Scenarios
Activity Diagrams

• Easier to follow
• Identify any erroneous steps
• Looks nice in a report
• No extra effort needed
Structured Scenarios
Basic Simulation

• Visually follow the process
• Identify any bottlenecks
• Repeatable
• Ensure the process can finish
  • No endless loops
Structured Scenarios
Test Sets

- Automatically create the steps needed to test all aspects of the process.
- Start of Test Driven Design
Structured Scenarios
Sequence Diagrams

- Start identifying the actors of a system
- How to interact with a system
- Capture the interaction between objects in the context of a collaboration.
Structured Scenarios

Gantt Chart

- Role dependent custom views
- (Gantt, Excel, Document, Model etc.)
- Assign resources to steps – Project Planning
Using This Model

• Empower downstream activities
• Traceability
• Impact analysis
• Create accurate changes
• Gain insights
• Model driven development
Traceability in Diagrams

- Can be hand crafted
- Automatic connectors for related elements
Traceability View

- Can be dynamic
- Easy to drill down
- Follow a path from strategy to implementation
- Context sensitive
Traceability for True Impact

- Automatic
- Can identify unforeseen relationships
- Hard to reach this insight with a whiteboard
Reuse

• Never create the same requirement
• Build up a library
Retain Knowledge

• Specifications come out of dusty draws
• Maintainable for years
• Doesn’t require a “knowledge silo” to remember the decisions made 10 years earlier
Communication

- Web based dashboards
- Curated views
- Easily consumable
- Socialize your business
- Provides real time analysis of the current model
Decisions - DMN

• Decision Model and Notation (DMN) is intended to provide a bridge between business process models and decision logic models
• Build, edit and execute a Decision Table
• Bridges Business and IT
• Puts the power in your hands
• Validate rule models to find and eliminate logical errors
Decision Model and Notation

• Easy to use interface that both business and IT can use

• Spread Sheet look and feel

• Easy to modify programming logic

• Generate source code directly to your solution.

• The basis for AI
Model Complex Decisions
### DMN - Code Generation

```java
// Business knowledge model definitions
public static double application_risk_score_model(double partial_score)
   {
      // Decision Table: Apply the risk score model
      double outputScoreValue = 0;
      Partial_score_collection.add(outputScoreValue);

      // Rule 1: 1
      if (Age < 19.21)
      {
         double outputScoreValue = 32;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 2: 2
      if (Age < 22.29)
      {
         double outputScoreValue = 23;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 3: 3
      if (Age < 26.33)
      {
         double outputScoreValue = 40;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 4: 4
      if (Age < 36.49)
      {
         double outputScoreValue = 41;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 5: 5
      if (Age < 50)
      {
         double outputScoreValue = 43;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 6: 6
      if (Marital_Status.equals("M"))
      {
         double outputScoreValue = 25;
         Partial_score_collection.add(outputScoreValue);
      }
      // Rule 7: 7
      if (Marital_Status.equals("S"))
      {
         double outputScoreValue = 71;
         Partial_score_collection.add(outputScoreValue);
      } // [More rules...]

      // Output the final score
      return outputScoreValue;
   }
```
DMN Generation

- Generate to a number of different languages
- Use tree structure to develop extremely complex decisions
- Can test the decisions in the tool
- Rapidly change logic without editing code
- Integrates seamlessly to simulate business processes and logic
Simulation - BPSim

• Comprehensive simulation of processes
• Integrates in with BPMN
• Run and store results from multiple simulations
• Better understand your process
Simulation - BPSim

• Comprehensive simulation of processes
Simulation - BPSim

• Step through simulation events
• Know how the simulation ran at any point
Simulation - BPSim

- Multiple simulation configurations outside the process
  - Able to ask “What if” questions
Simulation - BPSim

• Use charts and graphs to display the results
Sharing Models
Documents Templates

Model Report

Manage Users

Version 1.0 • Proposed

Table of Contents

1. Manage Users
2. Installation
3. Administration
4. Settings
5. Users and Groups
6. Access Levels
7. Audit Trail
8. Permissions
9. Settings
10. Integration
11. Reports
12. Help and Support
13. Documentation
14. Other Information

Model Flow

7.4.2.1

After three seconds the system displays the welcome screen again.

7.4.2.3

After three seconds the system displays the login screen again.

User Details

Fields:

- User Name
- Password
- Email
- Phone
- Address
- Company

Submit

Login

Welcome Screen

Welcome to the System.

Login Details

- User Name
- Password

Login Button

Error Message

Try again in 3 seconds.
BABOK Reference Guide

• Freely available
• http://babok.sparxpublic.com/index.
• Access Code: babok.model
BABOK Reference Guide

• Modeling Options
• Diagrams and Tools list
• Fleshed out examples
• Access to help