IDIOM Decision Manager Workbench

The IDIOM Decision Manager Workbench is:

- A user operable platform for running complex decision models across enterprise databases on a large scale without the need for IT involvement.

- A platform for those who develop, implement, and audit business policies: auditors, business strategy and policy managers, product managers, and IT.

- An audit tool for identifying, reporting, tracking and managing anomalies, errors, and issues in any database, or performing due diligence in mergers and acquisitions.

- A simulation tool for comparing the performance of current and 'to be' versions of automated policies, and for modifying transaction data to simulate alternate scenarios.

- A testing tool to define, capture and apply system wide tests before, during, and after systems development.

- A Validate/Transform/Load tool to transform data between systems and versions.

AUDIT/Pro-active Monitoring

- User defined "deep analysis" at the individual entity level;
- Schedulable "big data" processes that run independent of IT;
- Generate prioritised alerts with supporting context data for reporting.

SIMULATION/What-if Analysis

- Test alternate decision-making strategies across an entire portfolio, entity by entity;
- Use decision models to modify selected portfolio data and create alternate simulation scenarios;
- Report differences in simulations at a detailed level for follow up.

TESTING/Quality Assurance

- Use for quick, easy, and independent confirmation of newly developed processes;
- Test and verify data at a detailed level, entity by entity;
- Continue to run forever for ongoing peace of mind.

OPERATIONS/Batch Processing

- Schedulable file pass of large databases;
- Period-end processing:
  – Calculate and post fees, charges, adjustments;
  – Generate alerts, events, exceptions;
  – Calculate entity level report records and summaries.

DUE DILIGENCE/Data Forensics

- Quickly develop independent tests to verify individual entities on a large scale;
- Use for compliance, AML, fraud, M&A checks;
- Generate prioritised alerts with supporting context data for reporting.

EVTL/Data Conversion

- Read in one format, transform, output in another;
- Apply complex transformations (not simple mappings);
- Validate both sets of data with different rules.

Examples of use:

Insurer: Compare the current underwriting policy with a proposed underwriting policy across a recent portfolio of 100,000 insurance policies to determine potential changes in the rate of referral and its attendant costs.

Superannuation Fund Administrator: Run 100's of distinct audit tests across 1 million fund accounts on a daily basis to independently verify the integrity of the production system (both the application and its data).

City Council: Compare this year's rating policy with next year's proposed rating policy for each property in a city of more than 500,000 ratepayers to identify outlier changes in the rates actually charged.

Insurer: Dynamically modify key attributes of real transactions to simulate changes in the make–up of the in-bound business, and assess the impact of these changes across an entire portfolio.

Utilities Revenue Auditor: Assess current and historical power consumption for each of 100,000 regional consumers to identify unusual power consumption indicating faulty meters or un-metered power consumption.

Major components:

The Model Registry – to register and upload the Decision Models and attendant data Schemas that apply the policies, audit tests, simulated changes, etc.

The Process Manager – to assemble the Decision Models, and data acquisition (high performance database mappings or XML file readers) and other Activities into executable Processes.

Production and Operations – to execute the Processes against the environment of choice (e.g. development, UAT, production), either manually, or automatically via the comprehensive scheduler for 24/7 operation.

Enquiries – a comprehensive Alert management subsystem, including entity keys for all alerted database entities and optionally, complete supporting entity data; and/or access to summary outcomes from database wide simulation runs.

Enterprise class features:

- Full authorization and audit controls down to the field level for all users of the platform.
- Seamless operation across multiple user definable environments, for instance Development, UAT, Simulation, Production.
- High performance, including parallel processing on a large scale across multiple machines.
- Optionally, complete separation and management of the development/testing and production environments using dual, synchronized instances of the Workbench.

Measured Performance:

- Daily pass of 1 million superannuation fund accounts each comprising of a join of 20 complex member related tables (including one table of nearly one billion financial transactions).
- 10's of Decision Models implementing hundreds of individual member tests.
- Alerts captured and reported daily for start of business.
- Run daily in 30 minutes using one i7 class processor, with data drawn from an IBM iSeries.

Typical Approach

The Process is developed in two independent streams:

1. Decision Model Development Stream – The Decision Models are drawn from the production environment and/or developed by decision analysts partnered with the business policy owners. Decision Models are capable of defining and executing the complex data manipulation and business rules tasks needed by the Workbench.

2. Data Mapping Stream – The XML schemas for the database transactions that are required by the Decision Models are mapped to the database and performance tuned by IT specialists. The **IDIOM** Database Mapper is a high performance tool that can be used to acquire the data and deliver the XML to the Processes. Alternatively, the data can be delivered already formatted as XML transactions, either at runtime or via a folder. Provided that the mapping includes all available data, this development task is one time only, and thereafter allows safe and secure operation by business users independently of IT.

The Workbench leverages the IDIOM Decision Manager

- **IDIOM** Decision Manager is a tool for graphically modeling and deploying business decisions – without programming!
- A tool for the policy maker, not the programmer.
- **IDIOM** automates complex decision-making at the enterprise level, deployable as industrial strength, callable components.
- In day-to-day practice it is usually used by **IDIOM** trained analysts working interactively with SMEs.
- Together they model the business/policy domain in terms of both data and decisions (see Decision Model below) before moving on to define the underlying logic that binds them together (see Formula below).
- The decision logic and data are modeled together in a single combined process of analysis and definition.
- Deployment as software components is fully automated and 'without fingerprints'.

The Decision Model

- Example is a real model from a city council implementation of policy that calculates financial contributions to be paid by property developers.
- The problem domain is decomposed using a 'mind mapping' approach until we reach the atomic units that we call decisions (rounded boxes).
- The Decision Model below is demonstrably aligned and integrated with the data model (left hand panel) – validating and strengthening both.
- The data model defines the problem domain at rest; the decision model defines the valid state transitions.
  Together they completely define the required business policy.
- The atomic 'decisions' provide an easy entry point for specification of the underlying rule details via the Formulas (see next).
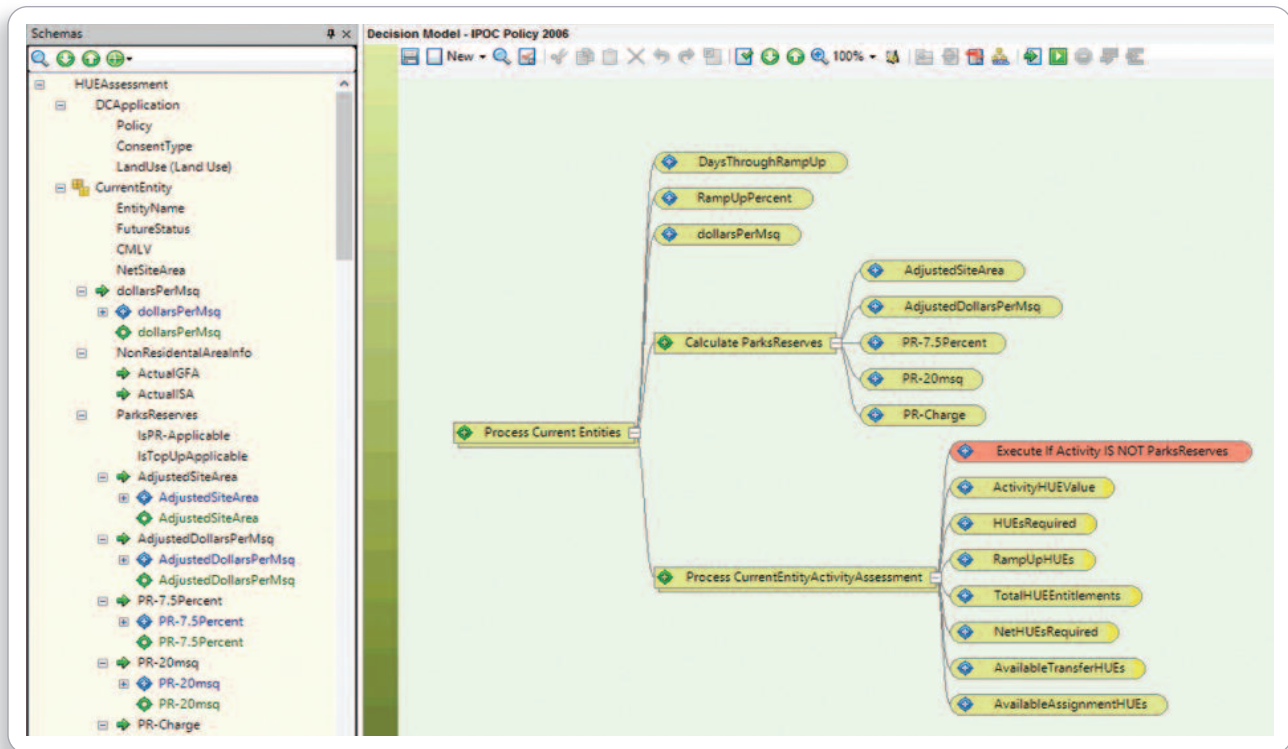
The Formula

- The underlying rules details are easily captured using a 'Lego' like drag-and-drop development approach that is 'more fun than playing golf' according to the CEO of one of our largest customers – there is no scripting, coding or other arcane knowledge required to build these formulas.
- The rules can be tested immediately within the **IDIOM** Decision Manager palettes.
- When finished, we generate the source code (C# or Java) with a single button click, ready to be picked up by the Workbench, or deployed to any application using any of a wide variety of simple interfaces and wrappers (in-line, dll, web service, queue service, and many more).
- And at the same time we generate the model into business readable documentation (PDF).
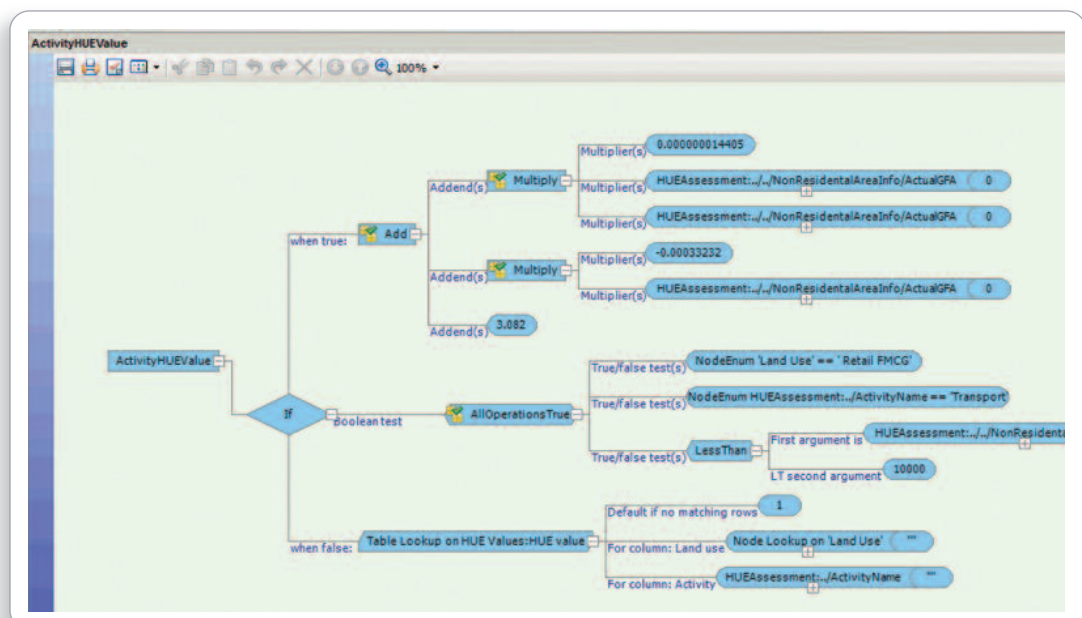
Key Points of Innovation:

- Fundamental redesign of the traditional SDLC by fully separating the development of business policy from the development of the systems that support it.
- Use of **IDIOM** is effective in spawning a 'Business Policy' Development Life Cycle, which is managed independently of and alongside the traditional System Development Life Cycle – a point now topical with larger customers who are striving towards centralised understanding and control of policy driven decision-making.

As a consequence, we achieve the following key Value Propositions:

- Business flexibility because the business owners now have hands-on custody and control of the policy definitions actually used by the system.
- Reduced business risk through business modeling and testing of actual policy definitions prior to automated generation and implementation.
- Order of magnitude reduction in the business cost of developing and implementing business policy.
- Further reduction in software development cost, time, and risk through reduced system complexity and clear separation of responsibilities.
- Automated, robust, industrial strength deployment on any scale supported by the underlying systems architecture.
- Simple injection into legacy systems leading to eventual legacy replacement.

About IDIOM

Established in 2001, **IDIOM** is a pioneer in the development of decision automation concepts and approaches, and in their practical application to the design and development of systems of all sizes. **IDIOM** has applied its "pure decisioning" tools and approaches to improve systems development performance and business agility in projects in Europe, Asia, North America and Australasia, across such diverse domains as insurance/finance, health, municipal, state, and central government, telecoms, utilities and logistics. **IDIOM** leverages this experience in developing and marketing the "**IDIOM** Decision Manager", a purpose built decision automation tool. **IDIOM** Decision Manager is a proven, pragmatic and cost effective tool for capturing, managing, automating and deploying business decision making know-how as described in the Modern Analyst article "*Requirements and the Beast of Complexity*". **IDIOM** Decision Manager is used by business users to define and control intelligent business processes through generation of small footprint, non-intrusive decision making software components. **IDIOM** is a regular participant at the EuroBizRules, International Business Rules, and the Building Business Capability Forums.

IDIOM Products

IDIOM Decision Manager is a tool for the SME and/or analyst to graphically model, test, document and deploy complex business decision-making as fully executable, high performance 'decision models' – without programming!

IDIOM Forms is a tool to define and deploy large, complex Web2.0 forms that are tightly bound to **IDIOM** decision models at execution time, field by field. The decision models are used to apply all business logic, to control workflow, and to dynamically control the form's look and feel. This more technical tool is fully programmer extensible.

IDIOM Decision Tracker is a tool to map MS Word and MS Excel documents to **IDIOM** decision models for full bi-directional traceability between corporate policy definitions and their implementation as **IDIOM** generated decision models.

IDIOM Document Builder is a tool to define, test, and deploy MS Word document specifications, and a document generator that uses those specifications to build transactional MS Word documents under the control of **IDIOM** decision models at execution time.

IDIOM Decision Manager Workbench is a user operable application to acquire decision models and other process components, assemble them into scheduled processes, and to run them on a large scale. It also collects outcomes and supporting information per transaction and/or per process for subsequent analysis and/or action.

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