

LURE – Liquid Underwriting and Rating Engine

+64-21-434669 | @ idiomsales@idiomsoftware.com | www.idiomsoftware.com

Old design thinking pervades the insurance applications market. Most insurance software today has too many moving parts, which are assembled with mind-numbing complexity using arcane methods known only to IT experts. The result is business inertia and IT costs that are too high. Until now.

LURE is a fluid and agile insurance product and policy administration platform that represents a new way of thinking about insurance systems. This results in profound differentiators from a business perspective:

- **Agile and Extensible** – use business experts to build new Insurance Products in one week or less
- **Nimble, Continuous, Perpetual** – all calculations and configurations versioned forever
- **Cost Effective** – LURE's goal is total IT support costs of 1% of GWP (not 3% or more)
- **Ready, Set, Go** – develop and deploy complete new insurance applications in just 100 days

Fundamental changes that are taking place across the entire IT eco-system are powering this incredible improvement in business agility, which is coincidental with IT cost reduction.

At an operational level, utility compute platforms like Microsoft's Azure Platform-as-a-Service [PaaS] are driving costs down, while improving scalability, security, stability, and functionality. Best-of-breed infrastructure 'technology stacks' that once required entire departments to install and manage are now set-up using simple scripts for provisioning, on-demand.

And at the application end of the IT eco-system, new software development approaches are leveraging the new utility technology stacks described above. Technical terms like 'containers' and 'micro-services' are being used to embrace the common-sense concept of shrink-wrapped and commoditized software services. These services are dynamically orchestrated into new business processes – providing the essence of business agility.

[IDIOM Decision Manager](#) is the strategic ingredient that allows **LURE** to configure and orchestrate software services in real-time to achieve revolutionary business agility. This unique, industrial strength tool enables your business Subject Matter Experts [SMEs] to quickly build, test, and deploy the decision-making services required to configure and orchestrate all of your business processes. With **LURE**, 100% of the business logic, the calculations, and the business rules used by your systems are in the hands of your business SMEs.

With bespoke service configuration and orchestration provided by your business SMEs using the IDIOM Decision Manager, the **LURE** digital platform is always aligned with your business policies and imperatives. Gone are the costs, risks, complications, and constraints of the traditional Software Development Life Cycle. IDIOM Decision Manager is the essential enabler that allows **LURE** to fully exploit the new IT eco-system efficiencies, to deliver a fully personalised, highly agile, full policy life-cycle system in just 100 days.

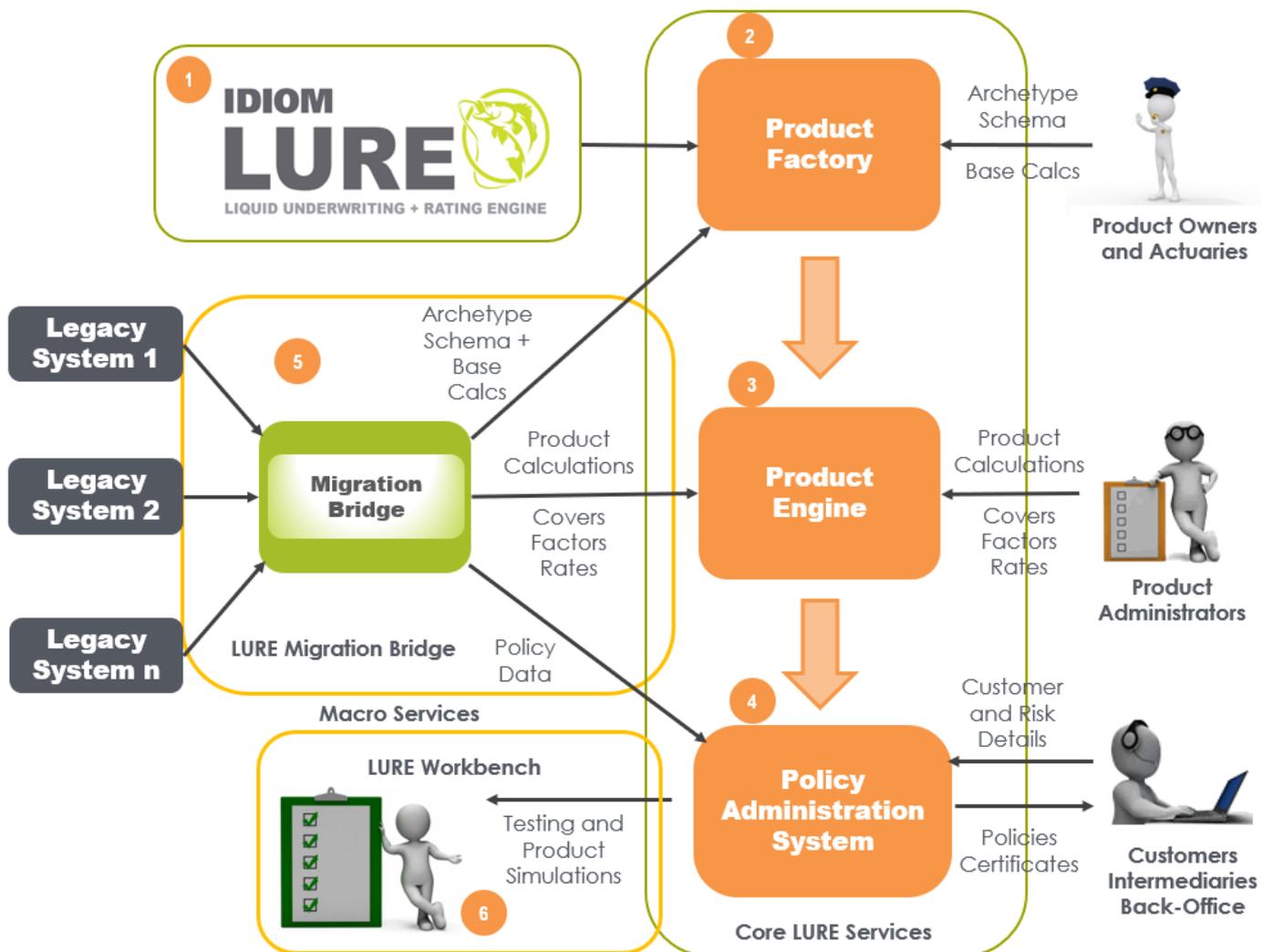
At the same time, **LURE** addresses the major inhibitor of platform change – migration. Migrating legacy portfolios to new systems is risky and costly. With **LURE**, migration is an integral part of the product and process configuration processes, so that the risks and costs of on-boarding are minimised. And to reduce risk even further, **LURE** includes an on-board Workbench for simulating and testing new insurance concepts and products, both during and post-migration.

For a more in depth understanding of **LURE** please continue reading overleaf.

Overview

The five key service components of **LURE** are:

- **Product Factory:** Contains the core data definitions and calculations for each line-of-business
- **Product Engine:** Fully defines individual products by extending the Product Factory definitions
- **Policy Administration System:** An empty data container plus generic software services, both of which are 100% configured by the product definitions in the Product Engine above
- **Migration Bridge:** To seamlessly on-board, scrub, normalize, and merge any external portfolio
- **Workbench:** To build and assess new business products using a champion/challenger approach



LURE Commercial-Off-The-Shelf (1)

The **LURE** commercial-off-the-shelf [COTS] application is complete as delivered but requires configuration to meet your exact product and process requirements.

Prior to commencing this configuration effort, normal administrative set up is required:

- ✓ Use the complete security infrastructure supplied with **LURE**, or connect **LURE's** modern security infrastructure into your own 'home realm' for single sign-on across multiple systems



- ✓ Configure users and permissions to access the configuration and other administrative functions

Configuration

Configuring **LURE** to your specific requirements uses the IDIOM Decision Manager, which deploys IDIOM [Decision Models](#) to inject logic, calculations, and business rules into every stage of the **LURE** process cycle. Decision Models are fast and easy to develop, test, and implement by business Subject Matter Experts [SMEs]. This agile process bypasses the traditional IT approach of requirements and design, coding, and testing, which involves many hand-offs that increase effort, risk, and time manyfold. For the sake of clarity, measured projects have demonstrated that developing decision models results in a twenty-fold increase in delivery rate when compared with similar outputs from the traditional IT approach.

Decision Models are also inherently effective dated, so that nimble, continuous, and perpetual evolution of business products and practice is tightly managed without creating a '[beast-of-complexity](#)'.

LURE partners the dynamic and agile nature of decision models with dynamic and agile evolution of the data design using [XML Schemas](#) [.xsd]. These two agility-inducing technologies work together to provide the foundation of **LURE**'s outstanding business and technical agility.

Integration

In parallel with configuration, a differential analysis is needed to identify any additional bespoke services that are required for your organisation. A service is a distinct process that is invoked by **LURE** as and when directed by decision models. Usually this is limited to integration end-points for other systems in your ecosystem. IDIOM supplies a number of standard integration end-points (e.g. for Microsoft Dynamics, and payment systems) – a set which is growing all the time to streamline integration.

Development of new integration end-points is explicitly facilitated by the **LURE** design, to ensure that these development tasks are discrete and minimised.

Product Factory (2)

The Product Factory provides the foundation for the **LURE** insurance product development process. The **LURE** COTS design is not constrained by assumptions about the products that it will manage. The Product Factory concept allows your SMEs to develop and implement the underlying product assumptions on an ongoing basis, so that **LURE** can service many lines-of-business and other related business concepts out-of-the box.

The Product Factory is responsible for managing the product archetypes, which are an underlying data and calculation model for all of the products that that particular archetype will spawn, now and in the future. The critical element of an archetype is its data schema [.xsd], which progressively defines all of the data that the archetype's products, and by extension its downstream customer policies, require throughout their life-cycles. Each archetype can deal with a broad range of products, and very few are required in practice.

Closely associated with the archetype schema is the archetype decision model. This single model is an IDIOM decision model whose role is to orchestrate the supporting cohort of decision models that are required to manage the product and policy life-cycles.

Archetype definition:
the original pattern or model from which all things of the same kind are copied or on which they are based; a model or first form.

The archetype model therefore includes the baseline validations, calculations, and workflow decision models that will support the products that are defined downstream in the Product Engine.

When legacy systems exist and migration is planned, it follows that the archetype schema and its baseline decision models are derived directly from the legacy system data and calculation models. The migration process itself becomes the source of the product archetype.

Product owners and actuaries can extend/enhance the Product Factory's archetype schema and archetype models forever, with all versions remembered and accessed by effective date at runtime.

The novel Product Factory concept is an important contributor to **LURE**'s outstanding product agility.

Product Engine (3)

The Product Engine extends and configures the product archetype, to define and support individual products. It then uses the Policy Administration System to sell and service those products.

The products within the Product Engine are defined by the archetype, supplemented with additional configuration schemas (.xsd), and their schema compliant configuration documents (.xml). By using the configuration schema's effective dating, the scope of the configuration (and by extension, the products themselves) can be extended/enhanced over time. The values for the various product definition parameters (which are described by the schema) are also effective dated and accessed according to the runtime effective date – forever.

A further set of IDIOM decision models is also developed in the Product Engine to implement any specific validations, calculations, and workflows that each product or group of products requires. These decision models manage the products according to the configurations that are present in the relevant effective dated configuration document that prevails at runtime.

This is where many product variables like rates, boundary settings, inclusions and exclusions, validation criteria, calculation methods, and workflow pathways are set for each product.

The Product Engine is the definitive, executable level of product definition and is callable as a service by any process that is instantiating or managing policies for the product.

Policy Administration System (4)

The Policy Administration System [PAS] provides a generic container for the policy data, which is defined by the archetype schema; and it provides the complete set of generic services that are needed to implement the workflows – these services are easily extended to support new business models as needed.

Therefore, the PAS's data and operation are 100% defined by the Product Engine above it. With some configuration of forms, dialogs, and generated documents, which are all derived from the archetype schema and configured by decision models, the PAS is ready to service any and all products. No bespoke computer source-level coding is required to implement the PAS, provided that the required generic services are already present.

An [IDIOM Form](#) is used to provide user access to the policy details for back-office staff, intermediaries and customers. The [IDIOM Dialog Manager](#) provides much more granular dialogs (conversations) for use with mobile devices. Workflow is implemented by decision models, which generate future dated events and user tasks, and drive the execution of the generic services, most of which are themselves configured by decision models.



Documents and other communications (e.g. emails, SMS) are generated and tracked by the Communications service, which uses the [IDIOM Document Generator](#) to create contract fulfilment documents. The construction of documents is governed by a decision model, which is used to control assembly of various text elements and to assign variable values from the policy data.

All accounting entries for customers, intermediaries, reinsurers, and any other related parties, as well as General Ledger entries for reserving and IFRS reporting etc., are generated by the product decision models. **LURE** provides multiple generic pathways to manage these entries and remit them to their assigned systems.

LURE orchestrates the services described above to manage the complete policy life-cycle: quote/bind, mid-term adjustments, cancellation, expiry, and renewal, including all required fulfilment processes.

A single **LURE** policy can include covers from multiple products – that is, there is a many-to-many relationship between policies and products. Naturally, if required, the bundling rules for products within a policy are defined by configurations and decision models.

Migration Bridge (5)

The Migration Bridge [the Bridge] is a **LURE** service that provides a safe-harbour for onboarding legacy portfolios, allowing SMEs to acquire, analyse, clean, and normalize them, and ultimately to merge them into the PAS on an ongoing basis.

The capabilities of the Bridge are more fully described in the [Whitepaper](#), 'From LegacyTech to InsureTech'. They include:

- ✓ Normalizing data values, including resolving and removing redundancy, transforming for clarity, standardizing element naming, and standardizing representations (for example, string enumerations, decimal precision, Boolean representation).
- ✓ Validating and normalizing calculations across the full extent of the legacy systems, and also across the full extent of the calculations that already support the Product Engine.
- ✓ Normalizing the incoming legacy Products down to the minimum set required to fully describe the Policies within, and also to align and merge with the existing portfolio set in the Product Engine.
- ✓ Customer de-duplication, including manual resolution of duplicates if this is required.

Provided that legacy migration is required (i.e. this is not a green-fields insurance launch) then the migration process is synonymous with configuring and populating the **LURE** product platform. For the sake of clarity, in the **LURE** approach, legacy migration, and **LURE** product configuration and implementation, are one and the same process. In other approaches these are each separate, distinct, and complex processes that individually incur substantial cost and risk.

Normalizing means reducing and refactoring the overall set of values, calculations, or products as the context requires, to the absolute simplest form possible that is required to achieve the purpose of the set, specifically including minimizing the number of elements in the set. Normalization reduces the risk of update anomalies, reduces complexity, and increases agility and maintainability.

Testing and Simulation Workbench (6)

The Testing and Simulation Workbench [the Workbench] is a **LURE** service that allows business product owners, actuaries, and administrators to simulate planned changes; to model and experiment with new

products; and to fully test any changes to current production images, including large-scale regression testing.

All migration of product changes into production is via the Workbench, so that formal pre-production testing is fully supported by **LURE**.

The Workbench has a separate database that is largely a copy of the 'Core **LURE** Services' (see diagram – viz. the Product Factory, Product Engine, and Policy Administration System). It is populated by copying the relevant production database elements out of the production system and into the Workbench database, including the product design elements (schemas and configurations), and policies (or any subset thereof). The copy process can include masking and other mid-stream adjustments.

The Workbench also allows users to create new test policies for new product testing.

Simulations

A key objective of the Workbench is to run existing and future system changes in a champion/challenger format in series on the same in-bound Policy test cases.

To achieve this, the Workbench provides a standard execution pathway that includes the following optional elements in the order listed, for each policy in the in-bound set:

- ✓ Process the current production decision models and configurations (reading directly from production) to produce the champion-output
- ✓ Process the challenger decision models and configurations (reading from the new equivalent Workbench staging libraries) to produce the challenger-output
- ✓ Auto-difference the champion and challenger outputs, with masking of known differences if required
- ✓ Decision model differencing of the champion and challenger outputs, to identify specific differences of interest (e.g. a premium difference of more than 10%)
- ✓ Decision model managed summation and analysis across the full set of policy test documents
- ✓ Decision model based selection of individual policies for reporting – when selected, the entire policy test case and all outputs as described in this list are written to the Workbench database for SME inspection and analysis.

Updating the Production System Image

An authorized user temporarily locks the Workbench from changes. During this period of lock-down, the full set of regression and boundary tests are run and differencing applied. Only after confirmation of correct test outcomes and of any differencing, are the changes migrated into production.

For the sake of clarity, this process can be executed regularly and quickly, including daily if required, to ensure a nimble, continuous, and perpetual insurance platform of any scale and complexity.

It's time to put your business SMEs in the driving seat, and move over to the fast lane!

Mark Norton | CEO and Founder | IDIOM Limited

☎ +64 9 630 8950 | Mobile +64 21 434 669 | Australia free call 1800 049 004

✉ 2-2, 93 Dominion Road, Mount Eden, Auckland 1024 | PO Box 60101, Titirangi, Auckland 0642, New Zealand

@ mark.norton@idiomsoftware.com | 🌐 idiomsoftware.com | 🗣️ Skype Mark.Norton

