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Utilizing a Centralized Calculation Repository for Increased Business Agility in Life and Annuity Insurance

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Executive Summary

In the world of Financial Services, the momentum and pace of change, enforced by regulation, market pressure and the need to remain competitive while controlling costs, has been constant and onerous for many years now.

In recent times we have seen additional stress brought to bear by reforms stimulated from the 2008 financial crisis, many of which are still filtering through. Reforms invariably equal enforced cost reduction, consumer protection, added complexity to products and processes with these same products and processes needing transparency folded in.

The need to generate additional services, process improvements, refined products and features from an environment that is overpopulated with multiple inheritance platforms is complicated by issues related to disparate and aging technology, silo service ownership and competition for key business and IT resources.

Focusing in particular on the Life and Annuity arena globally, we have seen many initiatives that increase the focus and downwards pressure on the provider's role in:

- » Provision of services and support for its retail distribution
- » Provision of services and support for its employee benefit consultancy distribution
- » Provision of services and support for its retail customers
- » Provision of services and support for corporate customers
- » Provision of services and support for internal IT infrastructure flexibility and the core IT Statue within an organization
- » Provision of services and support for external regulatory demands and Visibility/Audit Users and actuarial
- » Provision of services and support for its marketing customers
- » Keeping abreast of competition, with the desire to launch new and innovative products
- » Taking the burden of providing protection and retirement services away from already stretched Government financial resources, Pension Reform as an example.
- » Breaking free from the IT dependency and bringing the power back in the hands of the business users to be responsive and dynamic with their solutions to problems introduced by existing internal constraints or as response to external pressures.

There have been different strategies adopted to contend with these challenges, from tactical product and service offerings through more strategic programs involving significant front and back office developments to support them. However, these in turn bring about additional challenges which are discussed further in this document.
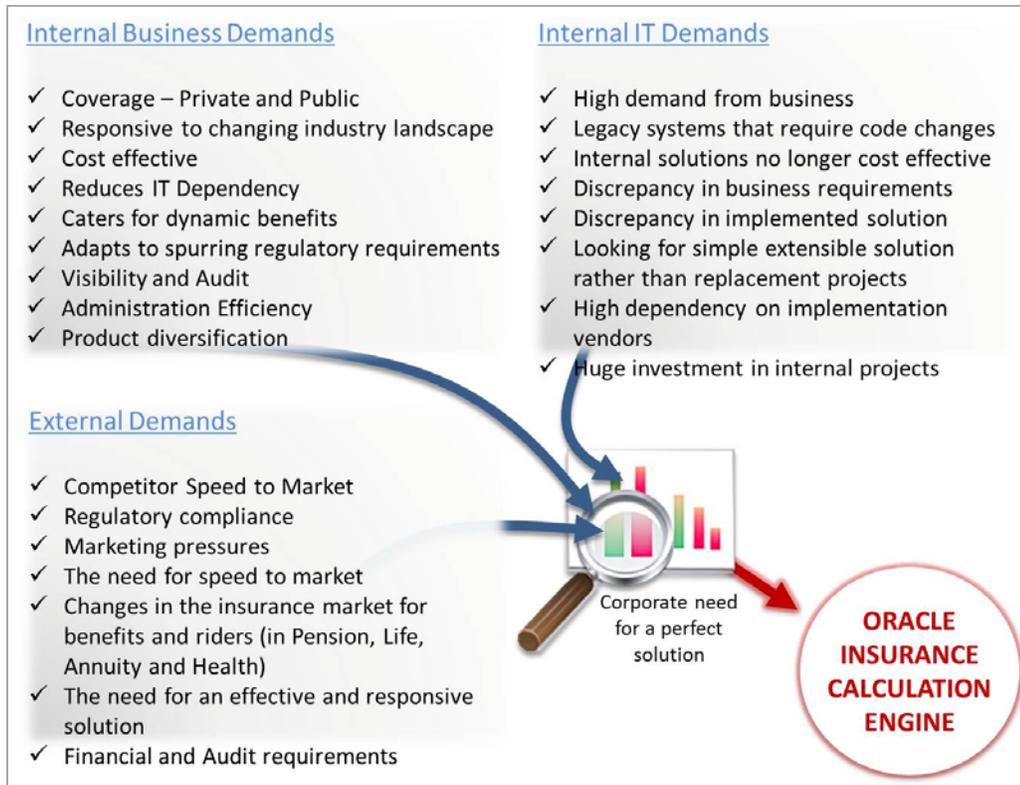

Figure 1: Challenges facing Life and Annuity Insurers

Response: The Two Ends of the Scale Phenomenon.

This Phenomenon comes about as follows:

A requirement becomes known either because of a marketing development or a significant legislative change. One of two responses can be identified.

» **Plan A)** Do something temporary and tactical – takes many forms, usually ending up being quite a long term commitment to maintenance in the end, with nowhere for it to go beyond solving the immediate requirement.

» **Plan B)** Do something quite revolutionary – gets everyone excited, teams get mobilized and a development gets underway. At some stage costs become prohibitive and reversion to a Plan A style solution gets adopted which ends up becoming long term and embedded in the culture. If in practice, Plan B does move on to being fully executed on, it often fails to deliver to the full original objectives and takes its place amongst the portfolio of other similar legacy initiatives.

This observation and analysis may be a somewhat cynical; however, evidence of this phenomenon can be found in many organizations. This outcome reduces business agility and normally occurs with a role – or team of roles – responsible for ensuring that a number of business and technical silos remain synchronized with other relevant areas of the business infrastructure.

What is inescapable is that this legacy of products, systems, facilities and support services distributed throughout insurers' businesses and technical landscapes increasingly impedes the ability to respond to new challenges in a competitive environment.

Insurance companies need ways of removing these encumbrances and to reintroduce business agility into their environment. It must be done in a structured and manageable way, avoiding "Plan B" risks and "Plan A" steps to a legacy solution in the making. Identification of a key area that can be leveraged to provide improvements across the landscape is a logical start point. One such solution is to focus on centralizing calculations.

Benefits of a Centralized Calculation Repository

Calculation capability plays a key role across the Insurance business; it impacts operations, valuations, product design and deployment as well as regulatory areas of the enterprise.

The participation of a centralized robust calculation capability should be a key element in the life and annuity product supply chain. However, because of the historical legacy discussed previously most insurers currently face the challenge of managing multiple systems that have been acquired or developed over time, each with its own imbedded "calculation kernel" and associated disparate coding and testing disciplines.

These systems all have different roles in the supply chain and must be coordinated and consistent across the business, strengthening the insurer's servicing ability and reputation as well as for regulatory and compliance reasons. The effort associated with this level of maintenance involves large and unwieldy ongoing projects and migrations, all with the associated drain on resource and budgets.

But, how is this centralization achieved and how can insurers benefit? There are options which typically include:

» **Build a Calculation Engine**

Using the in-house expertise and knowledge around the business's specific drivers and environment. An in-house development can be focused more on these than acquiring a solution, and this is often perceived as a benefit.

Pros	Cons
Complete control of the development and calculation engine **Allows it to be tailored to their unique business needs** **Overall ownership of the solution**	Do not have the rigor and development expertise that exists in a vendor environment
	They are prone to extensive scope creep and therefore cost
	Training and support invariably becomes a challenge over time
	Staying current with the latest technology developments and legislative changes falls upon the insurer to maintain
	It can be challenging to maintain the resources and effort required to have a competitive advantage or to just maintain functionality with that of their competitors
	The ROI is often very poor, if any at all.

» **Acquire a Calculation Engine from a Vendor**

A Commercial Off-the-Shelf (COTS) solution offers more benefits to insurers.

Pros	Cons
Ability to adopt the delivered functionality and integration capability	Momentary dependency on the vendor before staff gets trained.
Benefit from a vendor's ongoing investment in the product and the technology sitting behind it	
Provided with expertise and training	
ROI is much higher than in-house development	
Increased speed-to-market as insurance carriers can focus on business rather than IT	
Competitive advantage	
Future leeway to ease in standardizes implementations and rules governance	
Dramatic reduction in maintenance cost	

With this approach, insurer benefit from extensive "adoption" of the solution into their existing infrastructure. However, one pitfall is that if there is no option for self-reliance or configuration within the solution, there can be a reliance on the vendor to provide new functionality.

There are risks that are both specific and common to each option, but which specific route is adopted and is "successful" is still ultimately a largely tactical approach. The implemented calculation engine is unlikely to offer further opportunity to rationalize the remaining environment. Additionally, the calculation setup regime regulated by each of these options is likely to be very specific to its design. Programming may be involved to allow the calculation engine to cover and integrate with including:

» Illustrations and projections
» Premium/Benefit Rates
» Mortality and Morbidity costs
» Product and Administration fees
» Anniversary and Monthiversary Costs
» Annual Benefit Statements
» Commissions
» Introducer fees
» Re Instatement Costs
» Maintenance of all calculations and tables
» Contract Revision cost calculations

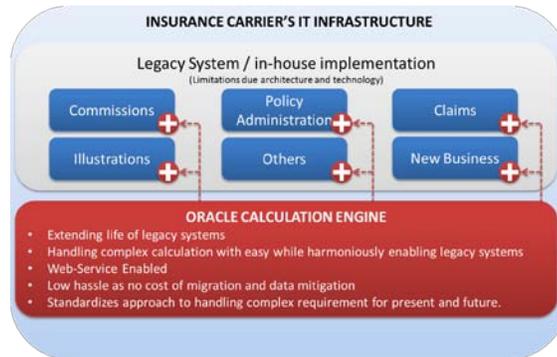Figure 2. Centralized Approach

Figure 3. Enablement and Enhancement Approach

These are also what are known as moving goalposts, regularly having to be revised to comply with market and regulatory revisions, they certainly are not "set and forget" structures, neither are the changes involved isolated to the calculation environment, with many possible upstream and downstream changes to product and processes which will still have to be managed in separate disparate environments. A typical common calculation environment offers little benefit here because as described, it is still tactical in the final analysis.

A Stand-alone Calculation Engine with Strategic Advantages

Is it possible to source solutions that provide the ability not just to cater for the calculation burden but also to be expanded in a logical controlled manner into other areas of the business landscape, gradually rationalizing the legacy on the way by? A common configuration environment would be essential in such a solution – the same disciplines and interface that are used to set up and maintain calculations are involved with other business processing areas. Once deployed (or during deployment, depending on the business status), there will be the option of accessing and implementing additional solution features such as:

» Product Configuration – extensive product configuration capability which can be brought into effect so that the insurer can adopt not just a centralized calculation capability but also centralized product repository.

» One Source of the Truth – a single repository of calculations for all aspects of a policy lifecycle, allowing for consistent calculations from new business through to claims.

» Illustrations, New Business and Underwriting – new business and underwriting processes which can be used as a common "front end" to existing legacy systems, utilizing the same underlying calculations, and configured using the same configuration environment and method.

» Ongoing Policy Administration – a comprehensive and robust system that supports "day 2" business processes from party management and policy alterations through to maturities, annuitization and claims

» Group Product Management – calculation services to enable the administration of group products, from risk based benefit plans, investment-based defined contribution plans through to guaranteed plans including defined benefit pensions.

» Group and Individual Product Administration – the capability to be the administration engine for these products, so having a single platform from which all individual and group products can be set up and administered through all elements of the product lifecycle.

All of these attributes and opportunities can be accessed using the Oracle Insurance Calculation Engine, described further in the following sections.

Oracle Insurance

Oracle Insurance provides products, services and expertise which can help insurers rationalize their operations and bring about a renewed strategic positioning.

The Oracle Insurance Policy Administration for Life and Annuity system (OIPA) has been deployed successfully in over 25 Insurers, each having different business drivers, strategies, product line and infrastructure requirements. In each case, one of the common themes has been the business critical requirement to provide a solid base from which to provide calculations capability for each area of the business.

Within OIPA, this functionality is provided by its own calculation engine, a flexible and configurable facility which enables business configuration analysts and actuaries to develop, test and deploy their own calculation requirements for use in product development and business processing. This work is performed in a graphical, user friendly configuration environment called the Rules Palette – this is not a coding exercise; it is pure configuration and is not overly prescriptive in its execution.

In many OIPA implementations, this calculation capability has been used to provide calculation services for other business applications, serving as a centralized point from which to manage all of the business enterprise requirements.

Oracle Insurance Calculation Engine

To enable more of our customers to benefit from this approach, Oracle now offers this calculation capability as a stand-alone solution, Oracle Insurance Calculation Engine (OICE).

OICE enables insurers to enjoy the benefits of the OIPA calculation strengths and flexibility without the need to acquire a full policy administration solution. OICE has the ability to develop test and deploy calculations for multiple applications without the need for code development, which is a subset of the many features available in the full OIPA solution. Its configuration environment, the Rules Palette is the same and involves the same configuration methodology, release management and debugging processes.

Insurers utilizing the Oracle Insurance Calculation Engine solution will benefit from:

- » Modern graphical user interface for calculation configuration
- » A centralized, enterprise wide calculation repository.
- » A controlled development and release management environment
- » Full test and debugging facilities
- » Flexible configuration to enable response to business and regulatory changes
- » A modern calculation engine built on the latest technology, ensuring ease of integration with legacy platforms
- » Improved product development capability
- » Calculation development without code development
- » Develop once and re-use calculations across the business enterprise
- » Support for straight-through processing as the same calculation routines can be used across multiple process stages
- » Oracle's continual development of the OICE product
- » Effective training and support from Oracle and their partner network

» Multi-currency & Multi Language capability

» Data dictionary to ensure consistency and release management capability to coordinate product deployment
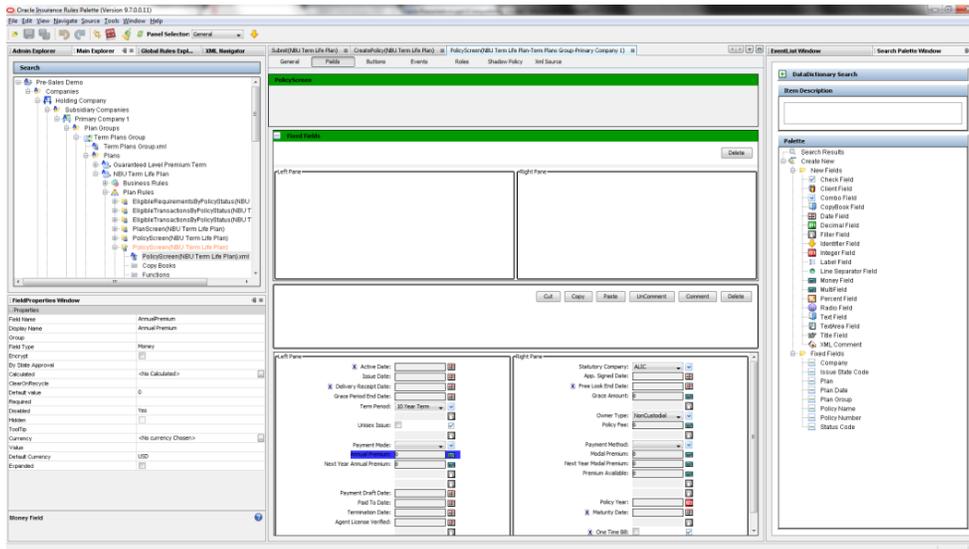

Figure 4: The Rules Palette – Easy to use drag and drop configuration tool
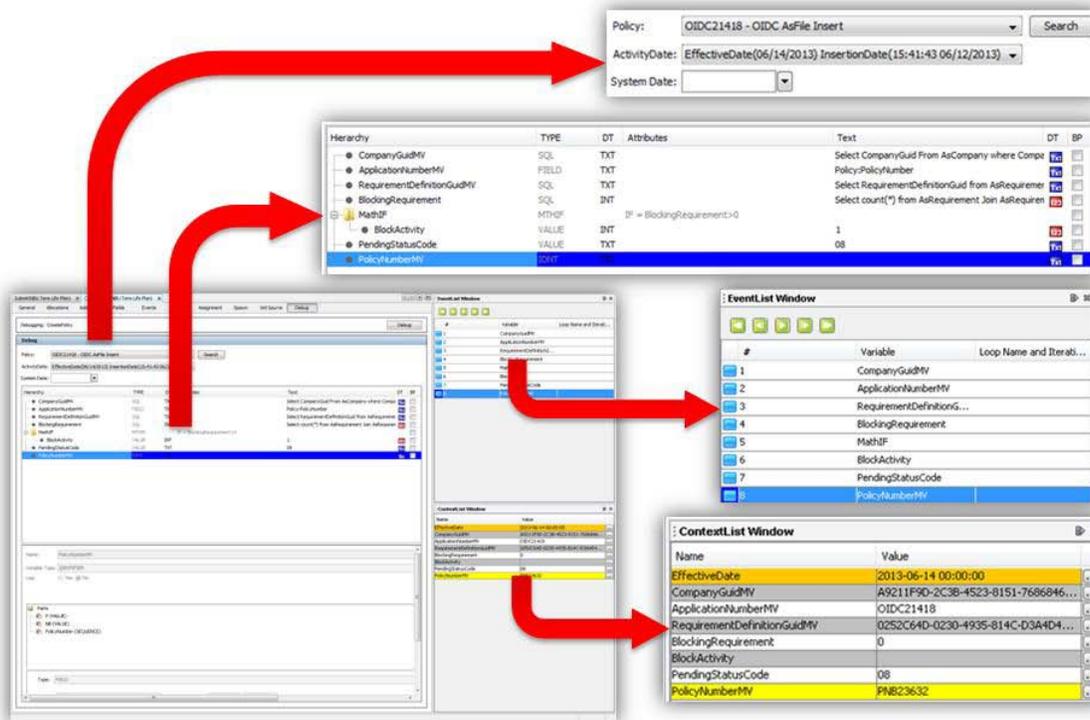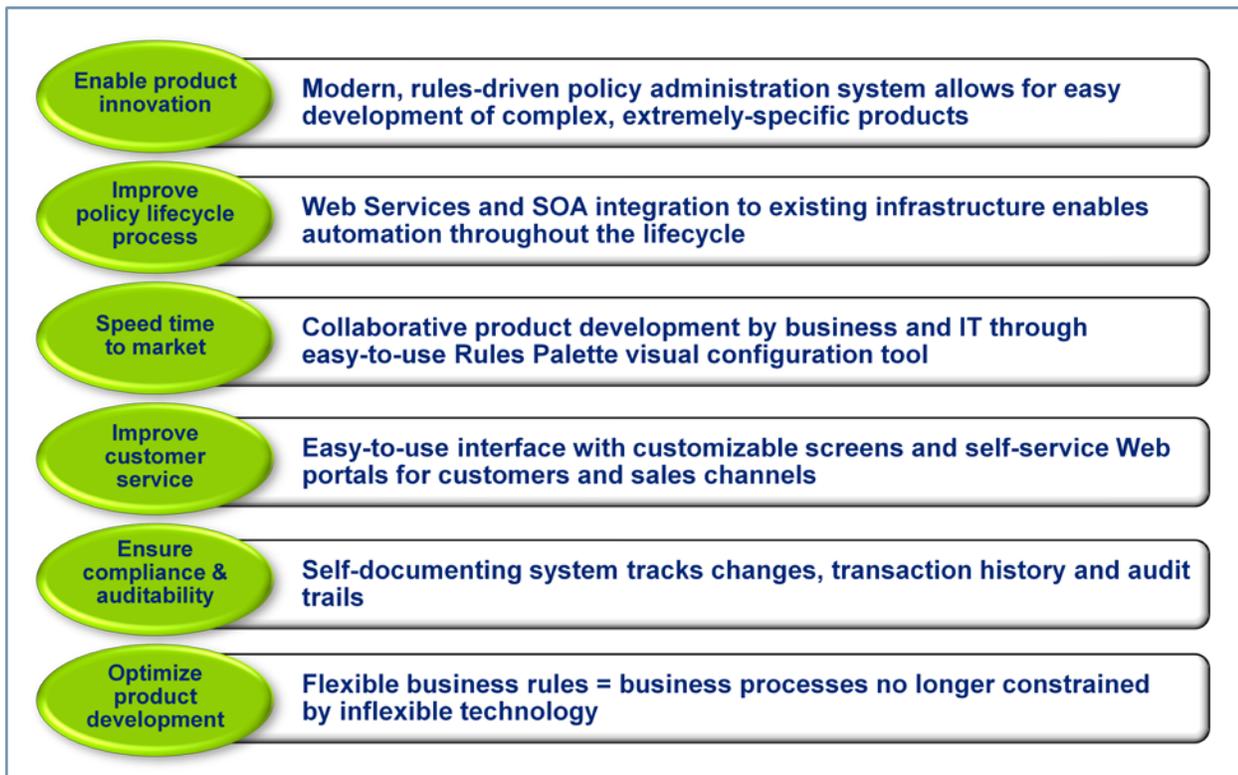

Figure 5: Debugger: Integrated debugger tool allowing for speedy configuration and testing

Common Configuration Environment and Method

With the Oracle Insurance Calculation Engine as a starting point, insurers can embark upon a manageable program of introducing operational efficiencies across the enterprise by getting the calculation environment under control, moving on to rationalizing the number of systems in the supply chain and benefiting from re-use across platforms, with the ability to upgrade to utilize the additional facilities available from the full Oracle Insurance Policy Administration for Life and Annuity environment.

The benefits of implementing a standalone calculation engine are significant but normally are restricted to a particular area of business and functionality. However, during this process with OICE, in-house teams will gain a skill set around the use of the OICE Rules Palette that is extendible to other areas of the full OIPA system. This can be introduced incrementally over time, thus providing an ongoing strategy path for the larger business requirement. A common configuration environment and method across functional areas enables the business to leverage experience and best practice going forward.

Enable product innovation	Modern, rules-driven policy administration system allows for easy development of complex, extremely-specific products
Improve policy lifecycle process	Web Services and SOA integration to existing infrastructure enables automation throughout the lifecycle
Speed time to market	Collaborative product development by business and IT through easy-to-use Rules Palette visual configuration tool
Improve customer service	Easy-to-use interface with customizable screens and self-service Web portals for customers and sales channels
Ensure compliance & auditability	Self-documenting system tracks changes, transaction history and audit trails
Optimize product development	Flexible business rules = business processes no longer constrained by inflexible technology

Summary and Conclusions

Embarking on a journey to replace or introduce any mission-critical piece of technology requires justification:

- » Risk mitigation
- » Business Case
- » Cost of Ownership
- » Return on investment
- » Longevity
- » Strategic Value

A centralized calculation will streamline operations in key business areas, around process, development and reporting. Oracle Insurance Calculation Engine can fulfill these requirements, has the ability to integrate into an existing environment and provides those involved in developing and deploying calculations with a common graphical configuration from which to configure, test, debug, version and release their routines.

Oracle Insurance Calculation Engine provides the standard tactical opportunities to the business but with the additional strategic opportunities to begin a program of replacing additional aging, inefficient and resource-heavy systems over time, using the wide range of administration services available from the full Oracle Insurance Policy Administration for Life and Annuity solution. The ability to upgrade to a full policy administration system is beyond the capabilities of other typical calculation system programs, and feeds into supporting business case analysis and other considerations as outlined in this strategy brief.

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