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View Point

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Insurance New Product Introduction: Challenges & Solutions

How can life insurance and annuity carriers take new products to the market faster and cheaper?

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Demographic changes, channel optimization pressures, changing compliance environment, and increasing competition are forcing insurers to increase the pace of product innovation to meet their growth and profitability objectives. This paper examines the causes of product introduction inefficiencies and discusses approaches to improving capabilities to achieve rapid product introduction.

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Background

The period of stable product portfolios that rarely change is long past the insurance industry. As with other industries, insurance is being forced to respond to the ever-changing demands of distributors and customers. Carriers refresh their product portfolio by either adding new products or enhancing existing ones to meet market demands. Periodically, they also discontinue non-performing products, though it does not eliminate the need to support servicing of policyholders. This constant addition of new products, while continuing to support old ones, has been a major contributor to the complex environment insurers find themselves in today.

Retooling the internal operations of a company to support new products is difficult, time consuming and costly, but necessary. In the "good old days" when companies relied on a single, relatively simple back office system, changes were easy to make, test and move to production. In today's multiple, complex back office systems with their plethora of interfaces and interdependencies, making a change in one system can have multiple and unforeseen consequences across the enterprise – assuming you can determine where to make the change in the first place.

Business Drivers for Product Introduction

While most experts agree that the demand for new and creative products is going to intensify, the ability of insurance companies to respond cost effectively is diminishing. It's in this context that Infosys has developed the Rapid Product Innovation Solution.

Insurers have always been aware of the importance of new product launches and their effect on sales and profitability. Industry analysts have confirmed the importance of keeping product portfolios fresh and current to meet market demands. A recent Celent study[1] reaffirms that market demands like 'Time to Market' and 'Ease of Doing Business' are among the top business issues for both Life/Health and P&C insurers (Fig. 1). The report identifies 'Improving Time to Market' as the most frequently cited market demand. This is borne out by the fact that 'Improvements to Policy Administration Systems' – which in turn positively influences the time-to-market issue – has been identified by ***all*** respondents as one of the top three IT initiatives for 2007.

Business drivers that accentuate the need to quickly and cost-effectively launch new or enhanced products can be grouped under the following four major heads (Fig. 2):

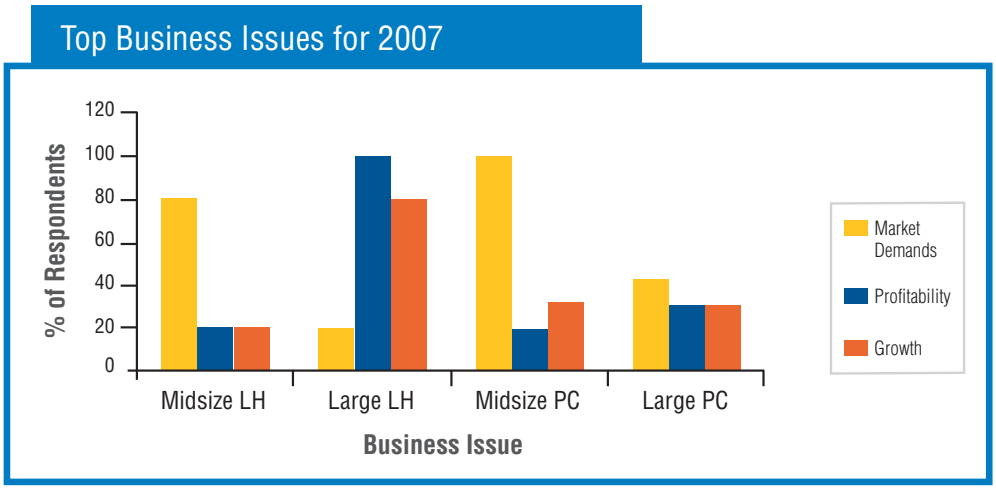

Fig. 1

Source: Derived from 'Celent - Insurance CIO/CTO Pressures, Priorities, Projects and Plans: 2007 Survey Results

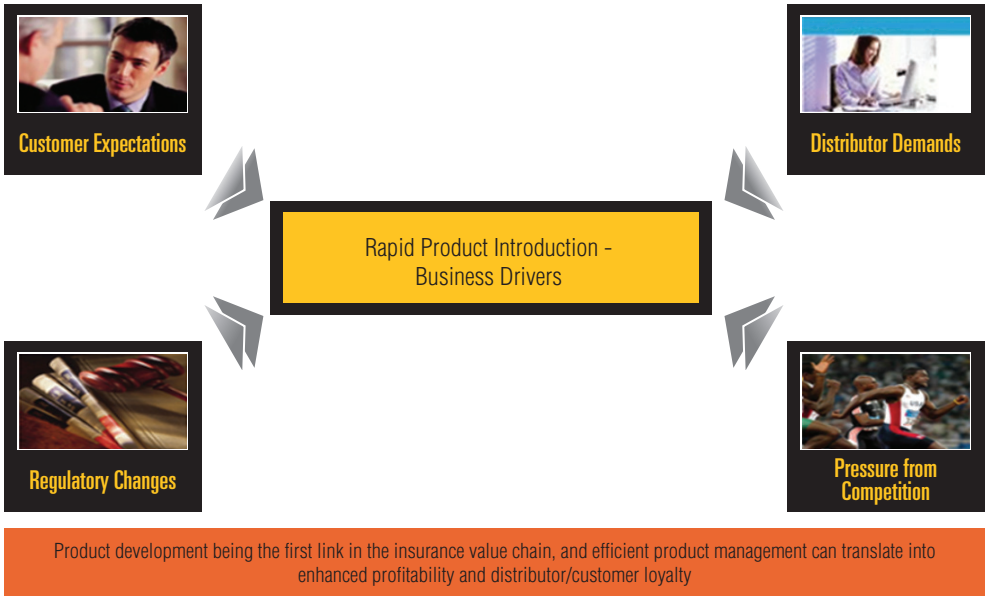

Fig. 2

Customer demand: Competition in the insurance marketplace has raised the level of customer awareness. Today, customer expectations are very specific and customers have plenty of choices before them. Customer demographics are also changing. The earliest of the 77 million baby boomers turned sixty in 2006. Insurers need to cater to the diverse demands of the post-retirement life of this economically active group and also the discerning young generation whose needs and expectations are dramatically different. Many economic factors such as stock market performance, interest rates, inflation, etc. also contribute to the rapidly changing customer needs.

Pressure from distributors: The demands of distributors – especially the successful ones – are increasing. Distributors looking to differentiate themselves in the marketplace expect insurers to develop and market distributor-specific products. Additionally, distributors are seeking ways to increase their client's wallet share by offering additional products to address perceived gaps in coverage or investment needs.

Pressure from competitors: Insurance companies are being pressured by both insurance and non-insurance financial services competitors. As new product offerings from innovative insurance companies gain traction in the market, other companies feel the pressure to copy. To prevent non-insurance competitors from gaining further market share, insurance companies develop products that take full advantage of their unique tax and protection characteristics. The mounting competitive pressure makes it imperative for insurance companies to keep a close watch on the market and design, develop and implement new insurance products that better address the needs of the market.

Regulations – the moving target: Insurance is a highly regulated industry that must constantly review and adjust its product offerings to ensure compliance. In addition, the changing regulations often offer new opportunities to aggressive and innovative carriers. Regulations impact every aspect of the product design and development process – product filings, rate approvals, regulatory reporting, tax treatment, disclosure, etc.

In the life insurance industry, many regulatory initiatives are currently underway, like the Optional Federal Charter (OFC) proposed by the American Council of Life Insurers (ACLI), the Interstate Insurance Product Compact, the State Modernization and Regulatory Transparency (SMART) Act, etc. Many of the proposed regulations strive to simplify the product filing process and reduce delays in regulatory approval for new products. This could prove highly beneficial to insurers who have multi-state operations – they can introduce products simultaneously across multiple states. However, this will further increase the pressure to expedite the internal product development and introduction process.

What Ails the Product Development Process?

The product development or enhancement process in a typical insurance company requires a high level of collaboration and coordination among various stakeholders from product design, programming, legal, compliance, operations, marketing, training, etc. (Fig. 3).

More than 50% resources of the total product development lifecycle are taken by the implementation phase. The actual implementation of new products entails substantial resource investments. The process also necessitates many handoffs between the stakeholders.

Legacy Systems – Issues and Challenges

Ageing technology and legacy systems have been identified as major hindrances that insurance companies face in their effort to quickly introduce new products in the market or modify existing ones. The heightened pace of mergers and acquisitions has also contributed to the increasing number and complexity of back office systems.

A Celent study published in 2005 cited inflexible legacy systems as the cause for high maintenance and sluggish product introduction cycles (Fig. 4).

Product related rules are embedded in complex legacy code and modifications/additions to these rules will entail considerable time and effort by programmers, analysts, testing teams, etc. To get their products to market more quickly, some companies have resorted to 'soft-launching', i.e. introducing the product to the market after enabling only those operations that are required to record the new policy in the system and issue first year commissions (?). This practice may lead to huge project backlogs in addressing post-issue servicing and reporting needs, and may make manual 'work arounds' cumbersome.

Rapid Product Introduction – The Solution

Research reveals that lack of speed-to-market is not just a technology issue. Any solution to the time-to-market riddle should adopt a holistic view, covering the business, technology and process perspectives. Improvements in the product introduction process may be brought about in several ways, including:

- Enhancing the product introduction process through optimal use of technology and removal of inherent bottlenecks
- Streamlining existing code to make modifications easier and less time-consuming
- Separating product rules from business logic by deploying a centralized product rules engine
- Fully leveraging opportunities to automate the testing process Taking into consideration the various factors discussed above

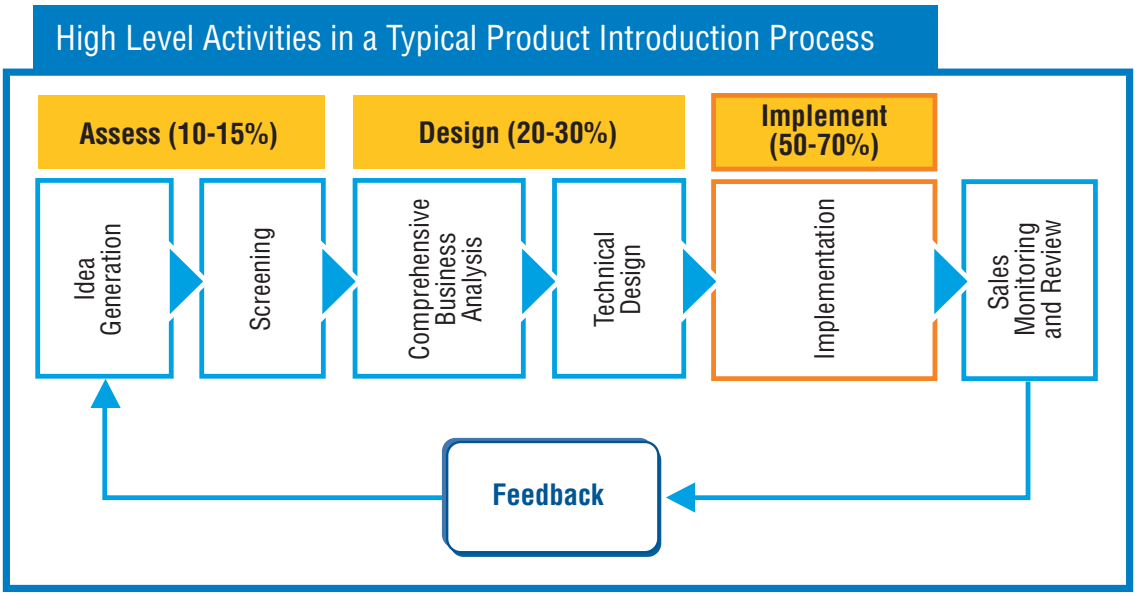

Fig. 3

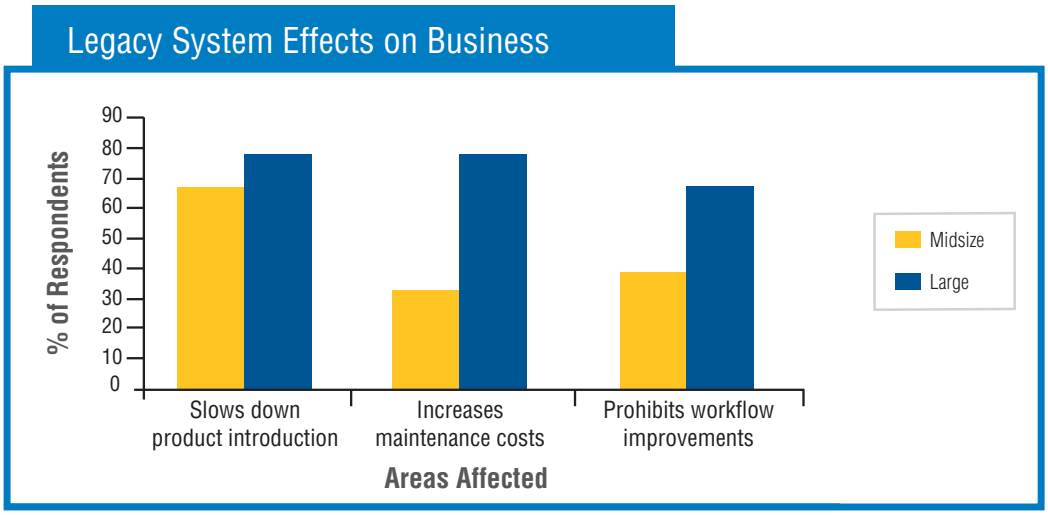

Fig. 4

Source: Derived from 'Celent - Insurance CIO/CTO Pressures, Priorities, Projects and Plans: 2004 Survey Results

Taking into consideration the various factors discussed above, Infosys has developed a solution to help carriers introduce products faster, cost effectively. Infosys' Rapid Product Innovation (RPI) solution is a strategic product introduction capability enhancer that enables insurers to implement products/plan changes faster and at reduced cost.

Solution Principles

The RPI solution is based on the following three principles (Fig. 5):

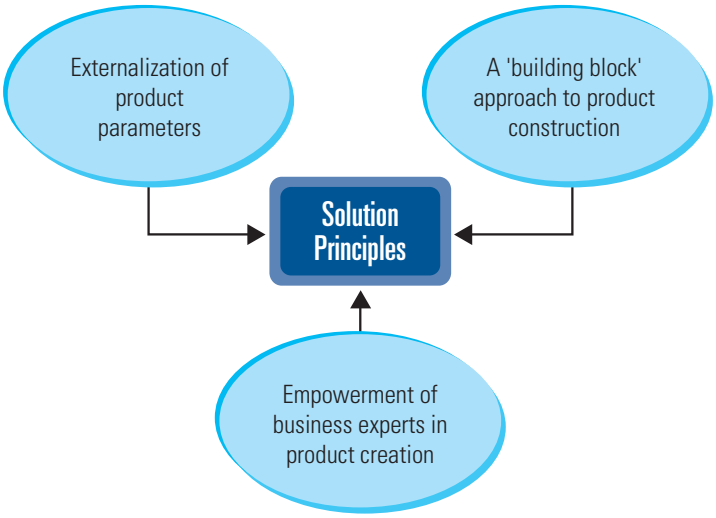

Fig. 5

1. Externalization of product parameters – Typically, product related rules are scattered across multiple systems which makes identification and modification of rules difficult and time-consuming. For easier management of rules, we suggest that all product related rules be defined in a centralized rules engine. This will ensure that the processing logic is independent of product rules, thereby, minimizing the analysis, development and testing efforts.
2. Building block approach to product construction – An insurance product can be modeled as a collection of benefit segments, each with its own set of features and attributes such as premium, term, coverage limits, etc. This modular approach to product construction increases reusability of its features.
3. Empowerment of business experts in product creation – Usually there is a heavy dependence on IT departments to configure new products in legacy systems. RPI enables insurers to reduce this dependency by empowering business users to configure, modify and maintain products.

Solution Components

The RPI solution comprises three mutually dependent components as shown in Fig. 6. Though there are multiple connects across these mutually dependent tracks, each of them can be managed independently.

Application Architecture

The RPI solution envisages a four-step process for externalizing product related business rules from the legacy code (Fig. 7). Each of these four steps is important to successfully achieve the right level of externalization. However, identifying and extracting relevant product rules from hundreds of thousands of lines of legacy code can be a very time-consuming activity if undertaken without any automation aids.

Rule Extraction Methodology

Though there are many tools to extract business rules, there is no 'one-size-fits-all' approach to extract and analyze business logic and rules embedded in the code. Based on our engagement experience with multiple clients, applications and technical environments, we have developed a methodology that makes use of automation tools to extract rules from the legacy code. Using our tool-based approach for extracting business rules from legacy code and analyzing it, we have experienced a 40%-50% efforts reduction over a purely manual approach.

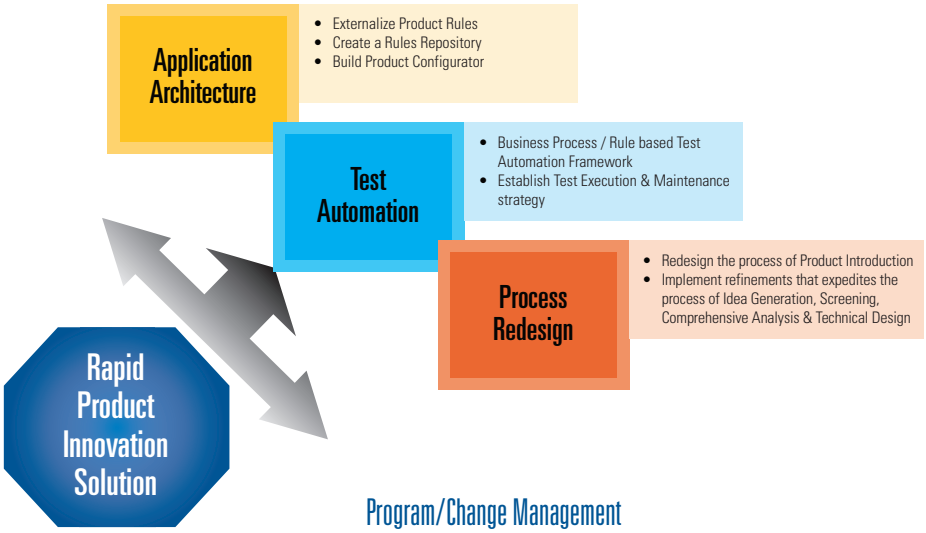

Fig. 6

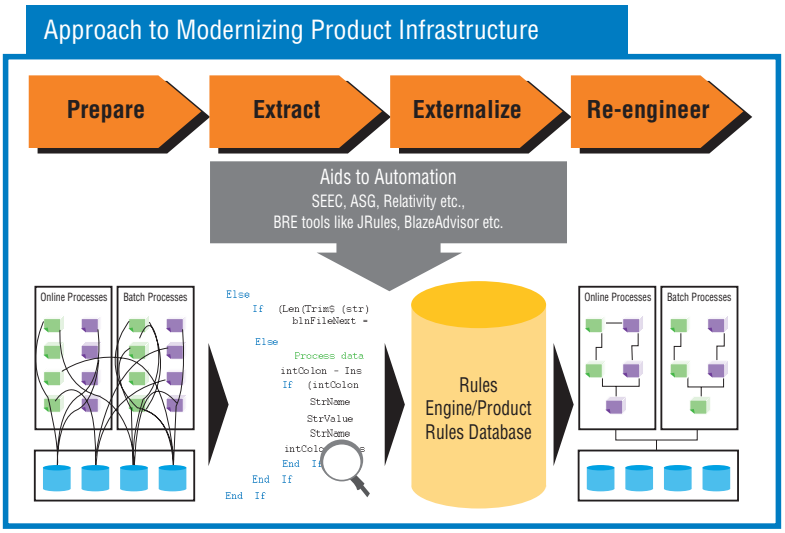

Fig. 7

One of our clients offering life insurance, annuity, retirement services, and investment management products had policy benefit data and associated business rules hard coded in 6 main and approximately 600 secondary COBOL programs. To introduce new products, the client had to spend an unacceptable amount of time and effort to update and test rules scattered across multiple programs and applications. Infosys assisted the client in extracting policy benefit data (product/benefit rules/ attributes) from the COBOL programs using automated extraction tools. This resulted in various benefits including improved speed to market, reduced testing and QA efforts, and improved claims auto-adjudication processes.

Infosys' tool-based extraction approach involves working closely with the client business and technical teams to develop variables and literals dictionaries that are used as input for the automation tool to extract rules from the code base.

Rules Configuration and Management

Product rules determine the features and how they are processed within a system. As discussed above, one of the common problems faced by the industry is that product related rules are duplicated across multiple systems. Separating these rules from the application logic enhances reusability of the product's features and attributes, thereby reducing the time required to construct, test and maintain

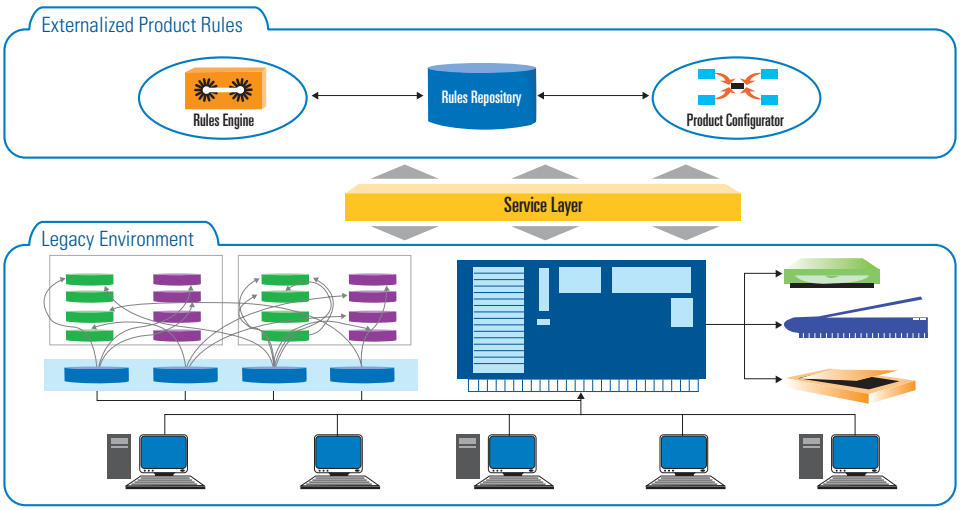

Fig. 8

a product. Once configured in a centralized repository, rules can be accessed by various operational systems through a common service (Fig. 8).

A leading US-based global specialty insurer partnered with Infosys to re-model its mortgage insurance systems. One of the critical goals of the proposed re-modeling initiative was to improve its ability to implement and support new products quickly. As part of the solution, Infosys implemented an extensible attribute definition framework that allowed parameterization of product attributes and behavior, creation and configuring of rule sets comprising a hierarchy of business rules to realize specific business requirements, and maximizing reusability of rules across multiple business functions/ modules. Infosys' solution enabled the client to rapidly introduce and support new mortgage insurance products in the US and international markets. Three products/endorsements were introduced in the first quarter of 2006 alone.

Product construction Methodology

Keeping in line with our building block approach to product construction, we have developed a product construction methodology that allows the product actuary to decompose current products into benefit segments that can then be reassembled in new combinations to create new products. Rules can be attached both at the product and benefit segment levels (Fig. 9). The ability to copy and modify existing benefit segments to create new

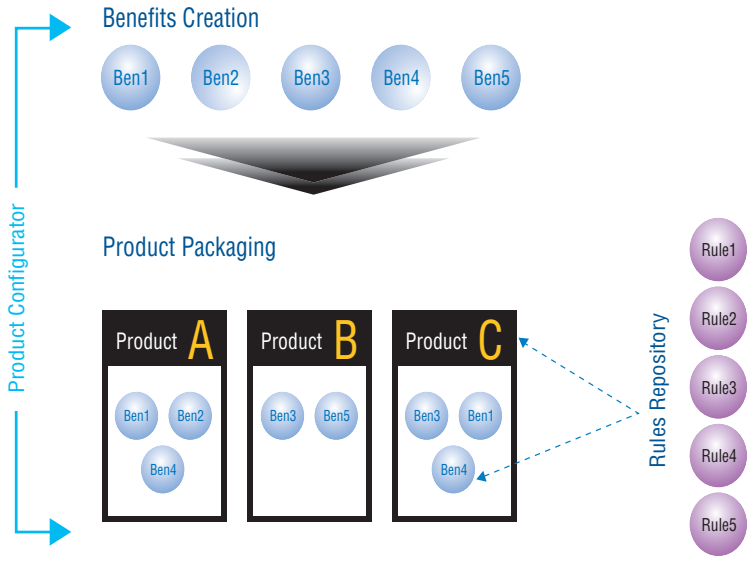

Fig. 9

benefit segments highlights the reusability aspect of this approach. The new benefit segments created can then be integrated with other existing segments to quickly form new products or variants of existing products.

We successfully employed this methodology for a client that administers the Federal Long Term Care Insurance Program (FLTCIP) serving around 200,000 members, with earned premium of approximately $300M. As part of the solution to address the client's speed-to-market challenges, Infosys developed a Plan Management System (PMS) – a J2EE-based user interface – that provides product creation/update ability to end-users. PMS introduced the concept of 'product templates' based on which actual plans can be modeled. The plan features were further subdivided into plan components, attributes and attribute values. This product/plan structure (Fig. 10) addressed the client's requirements of ease and speed in adding/modifying features in their plans.

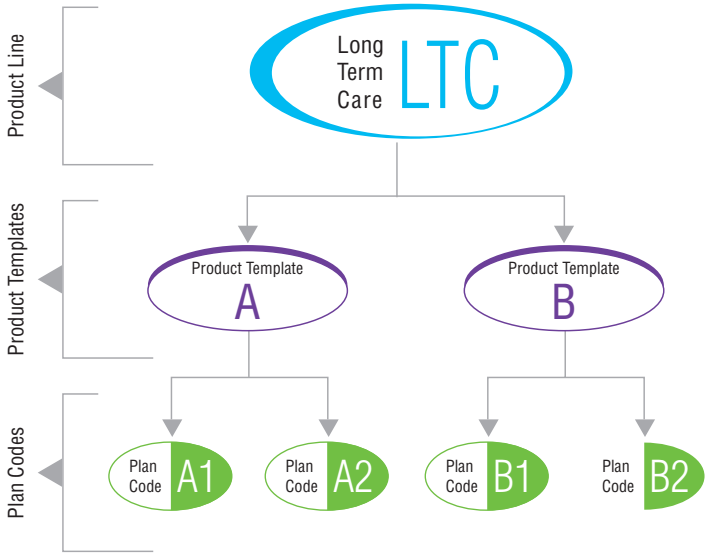

Fig. 10

Solution Architecture

The RPI solution helps carriers enhance product introduction capabilities while leveraging current legacy IT investments. Its reference architecture (Fig. 11) advocates integrating legacy systems with externalized product rules through an integration layer. This architecture enables carriers to acquire product innovation capability with minimal impact to the existing legacy systems.

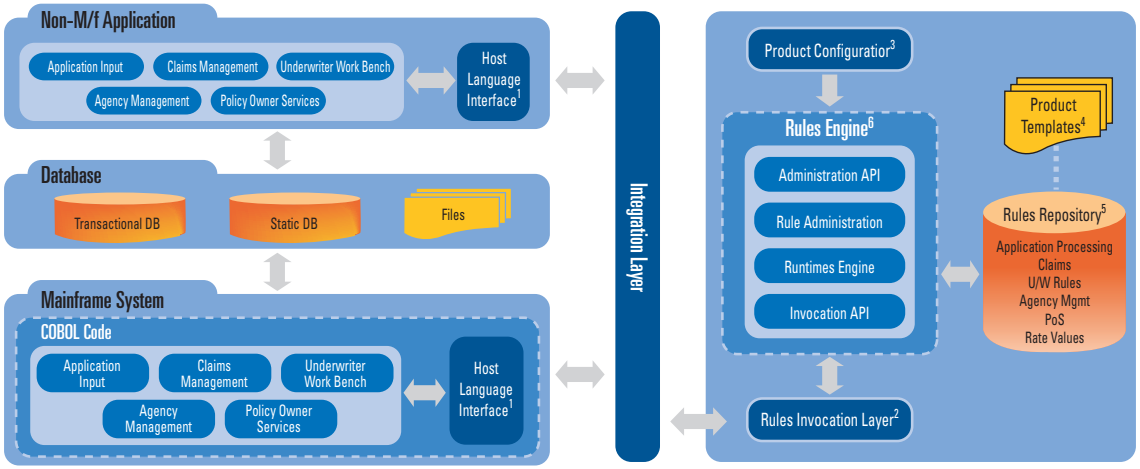

Fig. 11

Test Automation

Traditional approaches to test automation are technology and platform specific and do not support reuse effectively. They assume that systems are stable and well-documented, and do not support migration to other tools and platforms. Also, their high setup and maintenance costs delay realization of ROI.

Infosys' accelerated approach to test automation is built on the key principles of business empowerment, reuse and platform independence.

The solution derives its test cases and scripts from the business rules repository created and maintained by business analysts. While the accelerated test automation lifecycle involves both an initial setup as well as ongoing maintenance of the automation framework, many of the activities within the lifecycle can be managed by business users without the intervention of automation experts.

The keyword library, the business rules elements, and the business process elements can be reused multiple times within an application or across a portfolio of applications. This inherent reuse enables acceleration.

The solution is designed to enable independence from the technology platform for the business processing application and test automation tools. The solution architecture has also been designed to adapt to multiple application environments and test automation platforms (Fig. 12).

Process Redesign

We recommend insurance companies to introduce a crossf-unctional, milestone-driven product introduction process enabled by tools such as the Product Configurator to empower business users to assume a larger role in the creation, modification and maintenance of insurance products.

Companies should consider a process that enables product designers to work closely with the policy administration systems during the design phase. Using a Product Configurator, product designers can "test" their design on the system and determine, early in the process, if system changes are required. If changes are required, product designers should be presented with options like:

- Notify IT about the modifications required to the software environment/systems to accommodate new/enhanced product features
- Make changes to the product design while still meeting marketing and financial performance objectives so that it can be accommodated within the currently available system capabilities

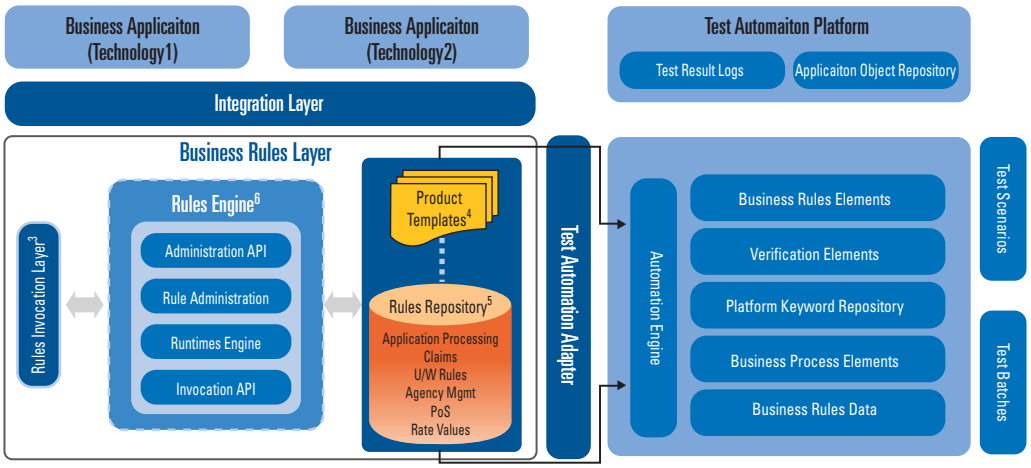

Fig. 12

- Leverage the capabilities of Business Rules Management Systems (BRMS) like ILOG's JRules BRMS to enable business users to make less complicated changes within the rules engine to accommodate new product features without involving IT

Benefits of the Rapid Product Innovation Solution

Enhancing the capability to introduce new products in the market has several core and intangible benefits that make an excellent business case for insurance carriers.

Core Benefits

- The RPI solution approach enables carriers to achieve 30%-50% reduction in product introduction costs. This reduction provides rapid payback for the initial investment, given the increasing pace of new product introduction.
- It eases bottlenecks in the process, enabling faster time to market.

Intangible Benefits

- Reduced cost and time-to-market ease payback hurdles in the investment decisions for new products, thereby increasing the pace of product innovation.
- The RPI approach for reengineering and modernizing legacy systems helps achieve a more agile IT landscape in line with architectural best practices.
- It addresses the technology obsolescence issue of legacy systems, thus providing cost avoidance benefits for future upgrade/ re-platforming efforts.

Insurance carriers should leverage ongoing investments in product introduction to develop a strategy for enhancing their cost and time-to-market performance. Enterprise capability for product innovation will be a key element in retaining competitive edge and ensuring customer and channel retention in the coming years.

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