

# Legacy Convergence Due Diligence: Paving the Way to Policy Administration Transformation



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# 1 Introduction

The insurance industry was an early adopter of technology, taking advantage of mainframe technologies to automate core insurance processes. In hindsight, this proved to be both a blessing and a curse. Though insurers saved money thanks to the use of these automated systems, they also came to rely heavily on proprietary, internally developed systems that in many cases were poorly documented and rarely updated. Therefore, it is not surprising that legacy systems are a recurring source of problems to insurance organizations.

In today's complex and competitive business environment, legacy systems pose a serious challenge to the competitive advantage of insurers. Legacy systems make it hard for insurers to:

- Lower operational and maintenance cost by standardizing processes and consolidating back offices
- Remain agile by adding new business features and functionality to remain competitive
- Reduce technical complexity and standardize interfacing requirements with other applications
- Reduce the cost of IT operations
- Find developers who can provide break-fix support

Traditionally organizations consider technical migration of legacy systems as the only viable option for addressing these challenges. However, this is often not the best solution and might end up being more costly than the problem.

Like financial assets, the legacy systems have different characteristics, levels of performance, risks, costs, and expected duration of usability. In order to make the right decisions about the legacy systems, insurers need a method to identify, understand, evaluate and compare the assets in the portfolio from both a business and technical perspective. By using a structured due diligence methodology and set of tools for analyzing and assessing the legacy systems, companies can identify actionable traits and characteristics and prescribe alternate options which are viable, non technical in nature, have much lower implementation risk, and a better business case.

In this Point of View Capgemini addresses the issues and tactical actions that can be used to evaluate the transition from a legacy system (or multiple systems) to a more centralized, consistent environment. By following a standardized and repeatable methodology for evaluating legacy system alternatives, insurers can examine the business case for the various disposition options available (such as data migration, selling off the portfolio, cross sell, up sell, or outsource) and take the path most appropriate for the business.

## 2 The Problem of Multiple Policy Administration Systems

A policy administration system is at the core of any insurance company's operation and has critical interface with most of the company's other peripheral systems including channel management system, commissioning system, claims system and general ledger system and others. Thus, multiple policy administration systems (often found within insurers) cause growth in the number of interfaces to peripheral systems, growth in the amount of support needed per system, and a wider variety of computing centre support requirements.

In addition, a multi-system policy administration environment within a country often caused by acquisition can foster variations in business processes, staff expertise requirements and regulatory compliance activities. In some cases, acquisitions may not have been fully integrated into existing businesses, which exacerbates the variation in processes and the typical loss of acquired staff expertise makes process variations more difficult to resolve. This creates multiple back office operations within the organization leading to increased cost and inconsistent customer experience.

Documentation for the various policy administration systems is often lacking from both a systems perspective and from a business/product view, making it more difficult to fully understand the details of the systems currently in production, limiting evaluation capabilities and making standardization more difficult. This also poses challenges around technology obsolescence and consequent risk of business interruption.

Lastly, the development of products over the entire history of the system, both pre- and post-acquisition, may result in a portfolio of open and closed products that have very long tails of in-force policies that may extend far into the future with a limited number of policies terminating each year. The requirement to service the many small blocks of in-force policies for both open and closed products is a functional need for the legacy system or any replacement.

Essentially the problems associated with managing multiple legacy systems can include the following:

- Slow time-to-market for new product launch or service change
- Technical interfacing and architectural issues
- Higher costs to operate and maintain
- IT resource growth from exponential versus linear complexity
- Policy centricity versus customer centricity

In summary, Capgemini contends that the impact of operating in a multi-system legacy application environment means that the business users are neither able to launch new products, features or functionality in a timely manner nor respond faster to market changes, thus losing competitiveness to more agile competitors.

## 3 The Benefits of Convergence

Eliminating legacy systems through convergence enables companies to combat market pressures, drive greater value, and realize strategic advantage. Specifically, convergence benefits an organization in several significant ways.

### **Reduced Cost of IT and Operations:**

A single converged system helps bring down the cost of operation by creating process consistencies and removing redundancies in resource utilization. Fewer legacy systems also bring in additional cost savings through elimination of system support requirements.

### **Increased Customer Centricity:**

Fewer policy administration systems help increase operating efficiency thus improving customer satisfaction through better turnaround times for policy servicing, distribution operation and claims processing.

### **Standardized IT Architecture:**

Eliminating legacy systems creates a better application landscape thus ensuring a better IT architecture. This leads to a robust, reliable and scalable technology platform and reduces the risk of business interruption.

Overall these benefits further a company's competitive strategy as they help companies to achieve:

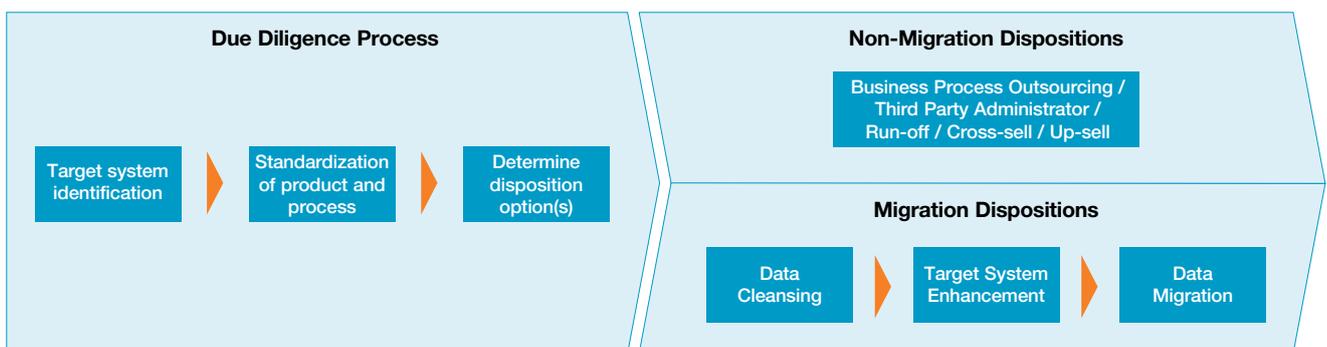
- **Product Leadership** by accelerating time to market for new products and rapidly respond to changing market and business conditions
- **Operational Leadership** by streamlining business processes, reducing conversion and project risk, and outsourcing closed book operations
- **Cost Leadership** by reducing cost per policy and total cost of ownership through legacy platform consolidation and reduced complexity

# 4 The Legacy Convergence Journey

The transition from a multi-legacy system environment to a tighter target system environment within a region can take multiple paths. Ideally it requires the following from both a business and IT perspective (see Figure 1):

- **Target System Identification:** The designation of one or more target systems in an organization requires identifying the system (or systems) that best caters to the current and future needs of the business and aligns with the overall organizational objectives.
- **Standardization of Product and Process:** The standardization of business processes prior to system migration will limit the amount of customization needs for migration, minimize the amount of training required for personnel and help ensure compliance with regulatory requirements.
- **Determine Disposition Option(s):** Insurers should examine all viable alternatives for disposition at a system or block of business level. Although a full migration of all legacy data may be desired, there are other disposition options that may be more cost effective. Each of the alternatives has an associated risk, such as losing control of the customer, not being able to control servicing or requiring interaction with each customer in a detailed manner, and these must be spelled out clearly within the business case. These alternatives may include selling the block; running off of the block of business; transitioning servicing to a third party administrator; substituting a new or different product; or a buyout option.
- **Data Cleansing:** The cleansing of legacy data prior to migration to ensure that migrated data can be moved to the target system for less cost and with fewer errors/issues. The age of the system, the quality of the edit checks, the consistency of system feature changes and the amount of “work-around” activities all contribute to the quality of the data and the degree of cleansing needed.

Figure 1: The Legacy Convergence Journey



## 5 Making the Right Moves: A Due Diligence Assessment

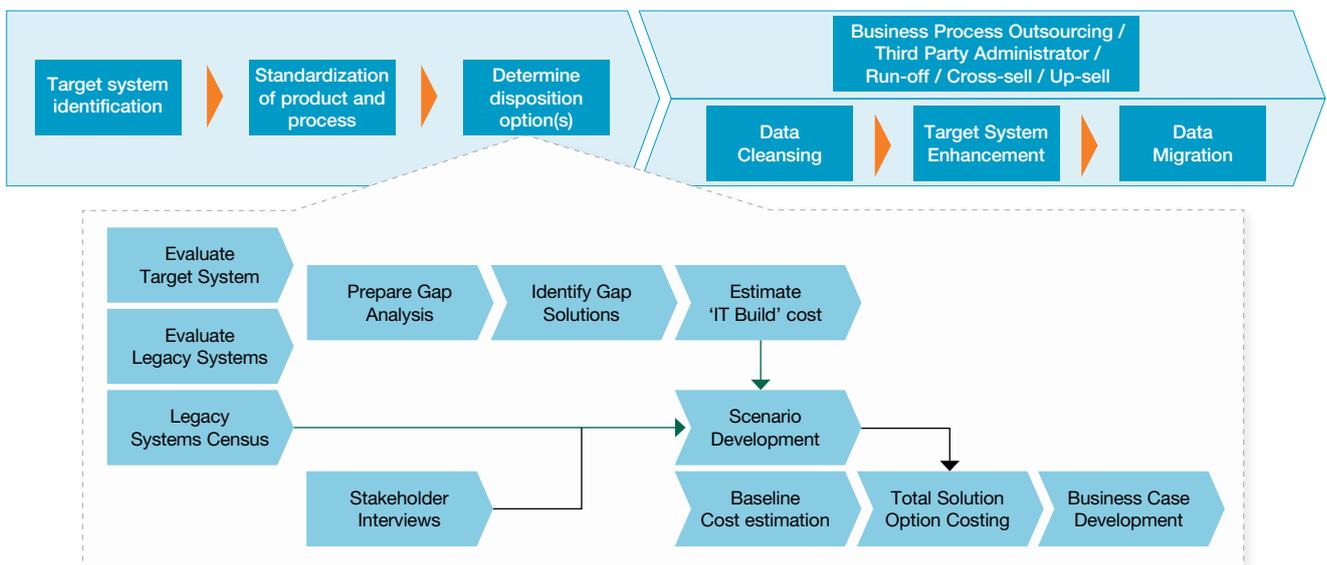
Given there are multiple alternatives to how to manage the migration of legacy assets, prior to the actual execution of the migration activities, a due diligence evaluation of the full requirements of the potential migration is recommended. It can be done quickly (typically within six to eight weeks) and provide tremendous savings and reduced risk associated with subsequent migration activities. A due diligence study will provide the following benefits:

- A clear understanding of the potential functional gaps between each legacy system and the target system from both a product and process perspective. Multiple target systems may be evaluated during this process allowing for a target selection process, if it has not already been done.
- A high level estimate associated with the gaps that are discovered from an IT perspective, as well as the overall cost including migration and other project costs.
- A detailed census of the entire portfolio of in-force and terminated policies, including all open for sale and closed for sale products, in-force values, termination dates and other detailed information needed to understand the full portfolio. This should also include an understanding of the quality of the data on the source system.
- A full profile of the system and insurance product requirements for a subsequent migration, based on the data and related findings from the due diligence effort.

# 6 Conducting a Detailed Due Diligence Effort

The bulk of the due diligence work required to drive the recommendations and results needed for review and approval of the best path forward is shown in Figure 2.

**Figure 2: Tasks for Determining Disposition Option(s)**



The tasks identified in the diagram in Figure 2 are elaborated below:

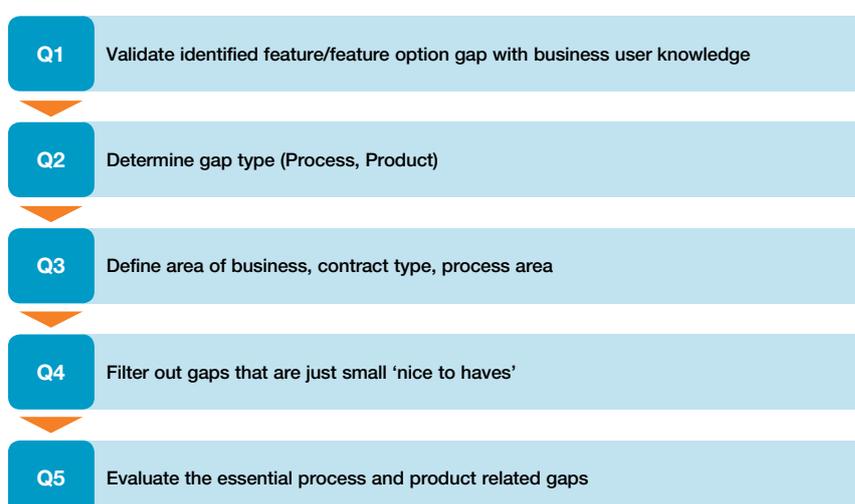
1. **Evaluate Target Systems:** A full evaluation of the target systems including both the current system features as well as those expected at the point of migration. This may require evaluating the potential feature changes caused by planned re-engineering of processes or by regulatory changes expected in that timeframe. The key to this target definition is to establish a baseline functional set of capabilities at sufficient levels of detail to enable a valid “gap assessment” with the legacy system requirements. This does not include a detailed IT evaluation of the system code, configuration or data base, but is focused on the capabilities of the system from a business perspective. The detailed breakdown of the system at the code and data base level is seen as an initial step of the actual migration.
2. **Evaluate Legacy Systems:** A full evaluation of the legacy systems’ capabilities and functions needed to support the current books of business in the data base is also done. Although a system may be much more capable than the current data requires and system configuration enables, there is no need to explore all possible capabilities since the focus should be on what is required to eventually migrate the data. Therefore, a feature/feature option approach is recommended for the correct definition of what is needed to migrate a product and related policy book of business.

The following table (see Figure 3) shows an example of process definitions captured for comparison. A similar level of detail will be captured for the target system so that a valid comparison can be made between the systems. Depending on the complexity of the product and system there might be anywhere from several hundred to several thousand of these line items recorded. These will be captured at both a process level (which affect every policy) and a product level (affecting only the indicated product).

**Figure 3:**

Product / Process	Category	Feature	Option	Comments
Ten Year Hospital Indemnity Rider	Claims	Proof of Hospitalization	# Days	Proof of Hospitalization must be filled at the home office within 90 days after the date of hospitalization. Failure to furnish proof of hospitalization within the time required shall not invalidate nor reduce any claim if it was not reasonably possible to give proof within such time.
Ten Year Hospital Indemnity Rider	Disability Benefits	Definition of Disability	Exclude undisclosed pre-existing conditions	During the first 12 months from the effective date of the contract, no benefits shall be provided for Hospital Confinement resulting from injury sustained or sickness for which the insured received medical advice or treatment within 12 months prior to the effective date.
Ten Year Hospital Indemnity Rider	Issue	Age Calculation Rules	Nearest Age	
Ten Year Hospital Indemnity Rider	Issue	Insured Issue Age	Maximum	Age 55
Ten Year Hospital Indemnity Rider	Issue	Misstatement of Age	Rescind contract is correct age is outside of Issue Age limits	If at the effective date of the contract, the age of the insured at nearest birthday > 55 years, the contract shall be void and the corporation shall be liable only for the return of premiums actually paid on it.

3. **Prepare Gap Analysis:** The evaluations of both the target “feature/feature options” and the legacy set can then be reviewed to identify the gaps between what the target can provide and what the legacy system requires to be migrated. The process of classifying the gap is as follows:



There are several key drivers for an accurate gap analysis:

Driver	Description
Terminology	Consistency of terminology between the target and source (legacy) system definitions to ensure that the requirement is clear and complete. It is highly likely that the terminology between systems differs somewhat, thus an agreed to standard is needed to ensure that the definitions are consistent between source and target. For example, one system may refer to a “free look period” while the other calls it “cooling off”.
Configuration	An understanding of the configuration options in the target system that may enable an acceptable work around if a feature/feature option set does not appear to have a match in the target system. System user expertise is typically needed to assess the potential work around capabilities and the declaration that a “gap is not a real gap”.  For example the legacy system might have coupons which can be easily handled with guaranteed cash endowments in the target even though coupons are not technically supported.
Commonality	Evaluating gaps to determine where functional differences may be similar enough between two products to be combined into one gap. For example, there might be several variations of cash value calculations across the various products that can effectively be treated as a single gap.  This is especially true when there are multiple source legacy systems all being considered for the same target.

4. **Identify Gap Solutions:** Once a final gap list is derived from the business evaluation of “feature/feature options”, a solution, or group of possible solutions, for each gap should be decided by a dedicated team involving the due diligence, process, product and IT teams. This phase should consider more than just an IT build solution and should include manual workaround solutions, adopting the target system process or combinations of all of these solutions.
5. **Estimate IT Build Costs:** Once the solution identification process has been done for all of the gaps in the gap list, the IT cost evaluation for each gap with an “IT build” solution should be done by the IT support group. This is done by preparing a high-level estimate of the effort required to remedy a gap in the target system. Although actual design of system upgrades will bundle gap fixes together and look at other efficiencies, the level of estimation is sufficient to obtain a high level consolidated view of the costs to prepare the target for eventual migration.
6. **Legacy System Census:** As a concurrent process to the above, an investigation of the open and closed products in a legacy system is done through a full census study. The census should produce a profile of every policy record in the system and assess the quality of the data in terms of missing/invalid fields or other apparently wrong data. This snapshot in time is sufficient for evaluation purposes and will need to be redone in the next phases of data evaluation and mapping.  
  
The census will include a count of all policies within each product which will then be extended, with the gap costs from Step 5, to include a cost per product and cost per policy amount for each of the product related gaps.
7. **Stakeholder Interviews:** In parallel to the technical analysis of the system and the policy details, runs a critically important stream of work that seeks to understand some of the wider goals and constraints of the business. Interviews are held with the business leadership and other stakeholders to the Legacy Convergence program. This is typically the CEO, COO, CIO, CMO and others to understand business strategy and with the Head of IT, Product Development,

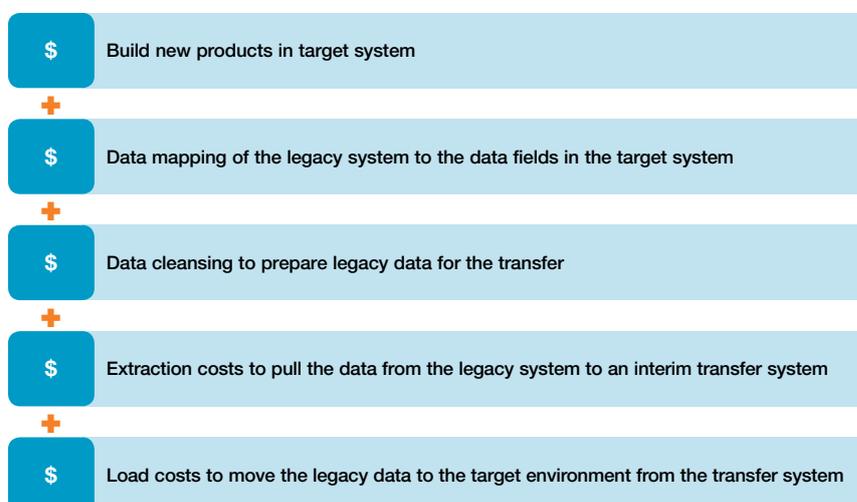
and Actuarial to understand some of the constraints. This achieves two goals. First, it provides an enhanced understanding by the project team in gathering details to support the options analysis and due diligence. Second, it provides the opportunity to start the change management process by exploring the current risk of the present operations and discussing the possible benefits of the disposition options.

8. **Scenario Development:** Once the data has been gathered of the count by policy (from the Census), along with the gaps and costs from the analyses and the insight from the stakeholder interviews, scenarios can be developed. Analysis should be conducted to explore the scenarios that are possible and combine the cost associated with completing each option as a whole. The analysis then should break that down to examine certain blocks of business that may deliver most of the benefits of convergence for optimal cost.

From a pure cost point of view, for example, the gap analysis may discover expensive gaps associated with one particular product on the legacy system. This is an inactive product that is no longer sold. However there are either no active or reinstatable policies of that product or the existing policies will mature very soon (i.e. within the end-to-end lifecycle of the legacy convergence project). This means that there is little or no business value associated with the migration of this product from a legacy convergence perspective. This, therefore, would be de-prioritized at a product migration level and therefore reduce the overall cost. Although this analysis does not decide the future state, as there will be further discussions around product strategy, it is an important data point to consider as part of the overall decision.

Scenarios would also be developed to examine the sensitivity to certain variables such as product growth that would affect the forecast baseline cost of existing operations as well as the projections for the future state system.

9. **Baseline Cost Estimation:** In order to make viable cost comparisons a baseline (or “stay as is”) cost must be determined. This is a collection of IT cost drivers and commitments that assumes that nothing is done to the legacy system. This would include whatever intangible benefits (or “soft costs”) that can be identified, but the focus is on contractual and fixed identifiable costs.
10. **Total Solution Option Costing:** An estimate of the costs and time required to perform the actual migration is the last piece of the due diligence. These costs will include the following activities:



11. **Business Case Development:** This involves the development of a consolidated business case to clearly outline the costs and benefits defined in the eight steps above. The business cases are focused on each legacy system in a country or region and evaluate the costs and benefits associated with each disposition option in comparison to the current baseline costs, along with the full migration option.

These alternatives may include the following:

Option	Description
Selling the block	There are two strongly related issues with this option which are the fact that a block that is not seen valuable will probably not be attractive in the marketplace (so it might need to be sold at a considerable loss); as well as the loss of customer control to another company will be painful after the cost of acquiring the customer to begin with.
Run off of the block of business	This is a very viable alternative for blocks with a short remaining life span, but not so good for blocks that have extended timeframes that go beyond what is needed to run off in a cost effective manner. In addition, limited functionality in the source system and related costs may make this unfeasible long term option.
Transitioning servicing to a third party administrator (TPA)	There are three key factors related to TPAs which need to be taken into account. First is that a qualified TPA is available in a country. Secondly we must consider if the TPA is able to provide service at the level that is required and if it can be monitored through SLAs. Finally it must be determined if the TPA system is capable of supporting the policy administration without any significant modifications.
Substitute product	Transferring the policies to another valid product in the current environment through a sales incentive process with each affected customer. The incentive to transfer the policies and the individual interaction to obtain approval by customers for that transfer may be a cost that is too high on a per policy basis. This approach may only make sense where policy volume is sufficiently low and the cost of enabling the legacy product is excessive.
Buy Out Option	This option considers the buying out of the contract altogether but, like the previous option, has limited viability and would only be considered for very small blocks of businesses that would be expensive to deal with otherwise.

The business case provides the information needed to determine the best disposition option that takes into account all source systems and products as well as all possible, viable disposition options.

Legacy system convergence enables companies to reduce IT and operations cost by creating consistent processes and eliminating redundancies in resource utilization and system support requirements. Legacy systems consolidation improves customer satisfaction through better turnaround times for policy servicing, distribution operations and claims processing. And, from a technology perspective, legacy conversion leads to a more standardized IT architecture and a reliable and scalable technology platform.

Through a robust due diligence process, supported by thorough analysis, insurance companies can rest assured they are making the best moves in legacy convergence to maximize benefits and further their strategic intent.

## 7 Legacy Convergence Due Diligence at an Asian Life Insurance Company

A multi-national life insurance company operates in eight countries within Asia. As the company has grown significantly in the region, it has consciously developed a regional business and IT operating model to support each country business unit. Hence the support of high business growth has led to the creation of several legacy systems holding some of the closed book portfolio. In addition to organic growth, the company has grown significantly in the region through strategic acquisitions. These acquisitions have also brought with them some of the current legacy systems.

In 2009 the insurer embarked on a regional target operating model program with the following objectives:

1. Re-engineer product build to allow faster reuse
2. Improve efficiency of operation
3. Enhance IT architecture
4. Upgrade governance/talent development

As a key enabler to the program's objectives, the company embarked on a strategic initiative to converge all the legacy systems to the target regional core policy administration system.

The project consisted of converging 11 legacy systems across six different countries.

### Taking Advantage of Tools for Robust and Rapid Analysis

Working with Capgemini on this effort, the company took advantage of Capgemini's proprietary Portfolio Migration Analysis Tool (or PMA). PMA is a tool developed specifically for legacy migration investigation projects and has the following features:

- Document the features of every product in the portfolio. The documentation is presented in language that is understandable to everyone. Those who use the documentation do not require knowledge of either the old (source) system or the new (target) system.
- Identify the modifications required to the new (target) system so that all product features process successfully (i.e. perform a gap analysis between two systems).
- Consolidate the census information for the source system with a list of products, plan code and policy counts.

PMA works by selecting predefined "features" and "feature options" for each system (source and target) from a list maintained within it. This predefined list can easily be extended at any time with new items as required.

A "feature" is typically at a high level (e.g., "billing mode" or "billing method" are features of a system, while the associated "feature option" may be "monthly" or "annually" for mode and "cash" or "credit card" for method). Since new product definition and builds may be occurring during the study period, a change control process is needed to ensure that new requirements are identified during this process.

While the tool was developed for Life Insurance projects, the nature of the feature/feature option methodology used is equally applicable to any financial system migration project. The only requirement is building the initial base of features available to the system.

### Developing the Legacy Conversion Business Cases

The joint Capgemini and client team worked for 14 weeks to visit the countries, document the source and target systems, conduct analysis and build necessary business cases and recommendations. The team produced a business case for each country as well as an overall regional business case. A few of the findings from the analysis are shown here.

Figure 4 depicts a legacy system that contains an extended tail of closed and open product in-force policies. This is an important consideration regarding the correct disposition of low volume books of business. This chart shows a count of policies by product in order to highlight the long “tail” of smaller products that must be taken into account for any legacy migration.

**Figure 4: Policy Count by Product**

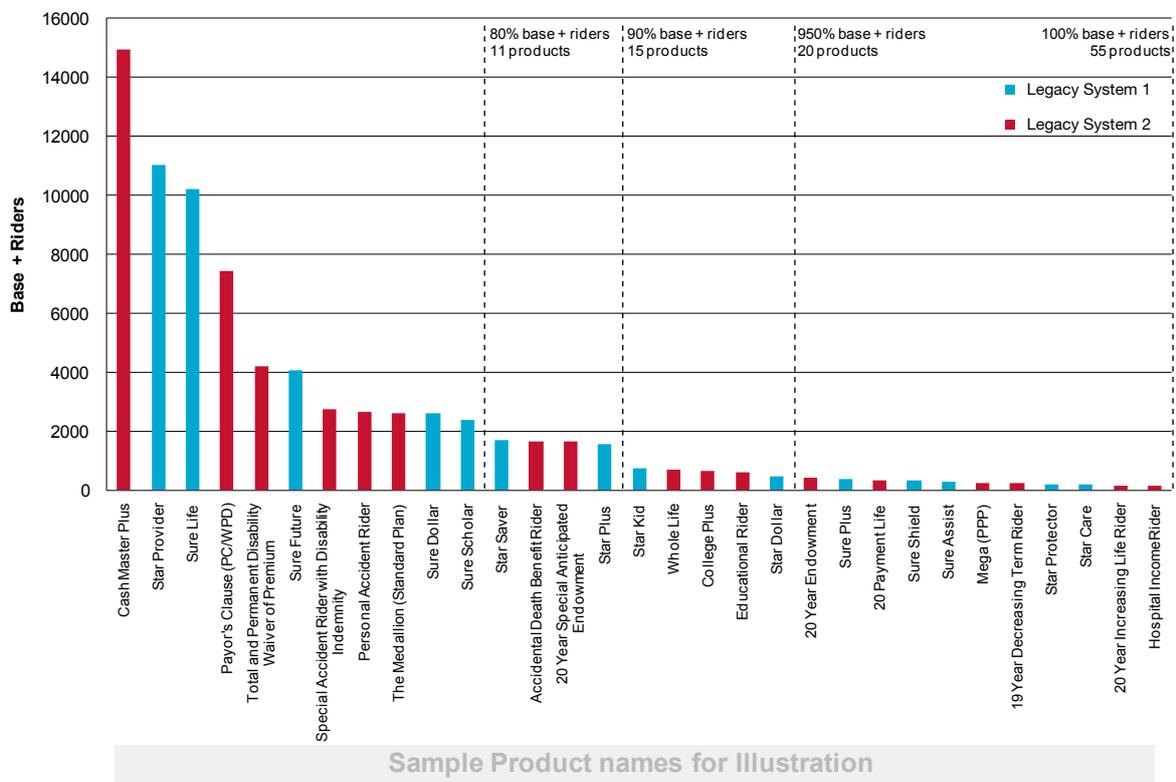


Figure 5 illustrates the extended tail that policies may take across time in a runoff scenario. As can be seen there are few products and policies that might need to still be administered well after the year 2050. These must also be taken into consideration for any disposition that does not involve migration to a new system.

Finally, Figure 6 provides an illustration of the analysis that is performed to assess gap closure costs in synchronization with the volume of policies tied to a product. Since gaps can be very product specific, a clear view of costs to migrate a small block can be derived product by product and gap by gap.

Each column in the analysis looks at a different scenario for a legacy migration. The first column considers only the products with few gaps between the source and target system and has a significantly lower migration cost. The final column considers the costs if all products and policies are migrated, with a higher associated cost.

Figure 5: Policy Count by Product and Expiry Year

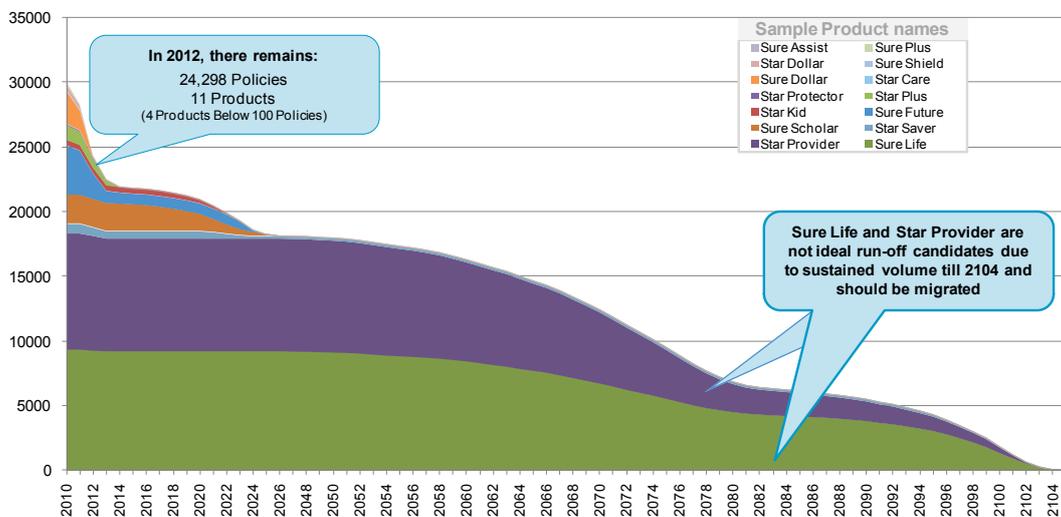
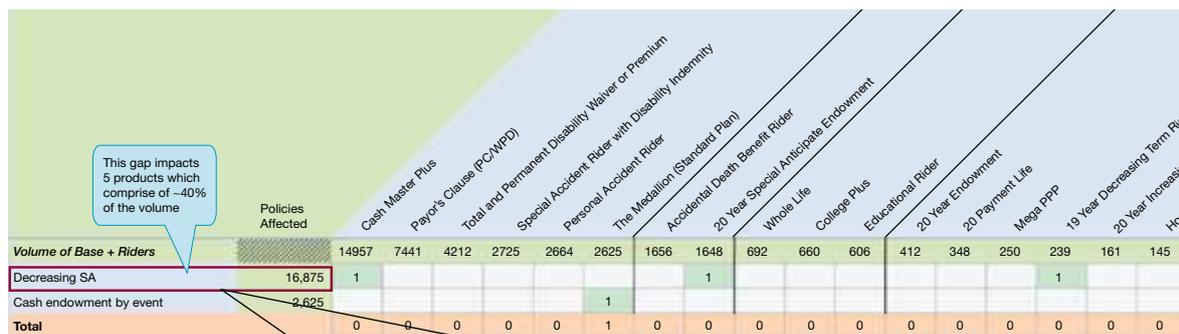


Figure 6: Scenario Analysis



Heads	Decreasing SA Gap, and all products volume > 1000	Decreasing SA Gap, and all products	All Gaps and all products volume > 1000	All gaps, all products
Feasibility Study	29,950	29,950	29,950	29,950
Analysis Study	107,754	107,754	107,754	107,754
Design/Build and Rollout	377,342	455,473	450,127	528,259
SQA (CAP 18 man days)	6,624	6,624	6,624	6,624
<b>GRAND TOTAL</b>	<b>521,239</b>	<b>599,371</b>	<b>594,025</b>	<b>672,156</b>
# of products	7	40	8	41
Policy Vol %	84%	94%	90%	100%

These scenarios are built by the business case team in order to find the best case cost that accounts for all factors. For the policies not migrated to the target system there were recommendations regarding the possible disposition options for those policies and the costs involved (i.e. up sell, buy out).

This was a multi-country, multi-system project with tight timelines. In addition, different stakeholder expectations within each country and region made it a very complex project from an execution and stakeholder management perspective. There were many lessons learned about the business, the technology and the process that will benefit the business in the long-term.

After a thorough review of the legacy convergence business cases and recommendations, the company is moving forward with the convergence of 11 systems into one target system. This effort is projected to improve customer-centricity and product leadership, reduce cost, and streamline operations and IT support.

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