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1 Introduction

Insurance CIOs are facing a problem of plenty these days – and it’s not a good kind of plenty.

They have multiple systems on multiple platforms often doing much the same thing i.e. policy administration, claims management, document production, rating and so on. Not only is there duplication of functionality, the systems don’t work very well together. The data is dispersed. And there is no single source of truth.

The problem is being compounded by acquisition of smaller companies with their own systems and by the continuous changes in technology which are adding to the already complex I.T. landscape. Resource costs are climbing as the carriers are forced to maintain a large pool of under-utilized IT workers with the niche skill-sets required to keep the legacy systems going. Rollout of uniform organization-wide policies – governing core processes like underwriting and adjudication has become a major challenge.

The need of the hour is to eliminate legacy technologies, rationalize the systems, and integrate them and their underlying data as quickly as possible without spending too much money.

This paper prescribes some invasive and non-invasive strategies for consolidation of disparate systems –primarily those inherited by legacy - and the pros and cons of each approach.
2 Evolution of disparate systems and platforms

There are several factors that cause the evolution of a diverse technology landscape in an insurance company. These and the resulting integration and data diversity problems need to be understood before working out a solution to the problem of consolidating information from these legacy and non-legacy systems.

2.1 Business Growth

The picture above narrates a very typical story of an insurer starting out on a small scale with excel sheets and other homegrown solutions. As the company grew it acquired a commercial solution which was good enough to meet business demands till an acquisition took place. The acquired systems had to be merged. Things got more complicated as the company grew and the need for integration increased.

The point to understand here is that business growth and arrival of new systems is not going to end. We need to have an integration strategy that does not lose viability due to business growth and acquisitions.

2.2 Advances in technology

The above graphic shows the technology pressures and trends of 2011. Our strategy needs to recognize that addition or change in the technology environment adds additional integration complexity to the IT landscape. And consider it when evolving a legacy system consolidation strategy.
2.3 Challenges of retiring legacy platforms

The third factor to be considered is that although insurers introduce new technologies, it is difficult for them to get away from their legacy systems entirely and thereby reduce the touch points. A few reasons for the continued longevity of legacy systems are given below.

- Still able to support business processes
- Still reliable
- Supportable through some old technology staff
- Still cost effective when compared with modernization alternatives
- Almost indispensable as there is a budget crunch
- Still able to support major - if not all – strategic goals

Source: CIO Insight

20th century legacy applications to perform 21st century business
3 Legacy system consolidation strategies

Now that we know the situations and challenges that led to the creation of our complex landscape and we know the challenges and environment changes that could derail our legacy consolidation strategy, let’s take a look at some guiding principles.

Our legacy consolidation strategy should consider all the factors that led to the creation of their complex technology landscape as outlined in the previous section and evolve their strategy based on the above guiding principles.

In essence there are 2 broad categories of consolidation strategies:

- **Non-invasive** – where we try to integrate the existing assets without moving anything

- **Invasive** – These are whiteboard approaches that are taken when old systems need to be replaced entirely.

3.1 Strategy 1: Data Integration

This may be viewed as a first level integration strategy. Here we try to get a single view of the data—single source of truth—from the data perspective. This strategy is typically taken up when the individual applications are real time and high availability systems where queries on the transaction database can result in a serious deterioration of application performance.

Here are the situations where you would go for data integration

- Your consolidation driver is primarily reporting : Creation of Data warehouse
- You are paying many times for upgrades of multiple instances of a product – having all the data in one instance by a migration would save you money
- You want to consolidate data before going in for a modernization upgrade
  You have user demands for Real time and high availability of applications — Many islands of data are slow to respond to queries and reporting requirements

MDM – You want to take a very close look at Master Data management for the following reasons:
- Master Data Management enables dependable cross system reference ensuring that everyone involved in the process has access to same information and knowledge.
- MDM helps implement data integration platform and create single logically correct view based on business rules

Data integration can be achieved by consolidation of data by any one of the following methods

- Creating a data warehouse – using data from all the source systems
- Migrating data – moving data of like systems to a single database
- Consolidating Applications – moving business logic to a selected best of breed application
- Setting up Master Data Management - moving the core business data that drives the business to a common location.
3.2 Strategy 2: Enterprise Application Integration

Sometimes it's just not feasible to consolidate the data. Or you may have a number of applications that do their individual tasks very well — SAP is very good for finance — PeopleSoft is excellent for managing resources. Or after a certain point, further consolidation of data is not an option. You still need to get the applications talking to each other. The solution is Enterprise Application Integration or EAI.

EAI strategies focus on presenting a seamless user interface to the end user. In other words, you may have multiple applications on different platforms. For example, a homegrown policy administration system on the mainframe, a claims system on a proprietary platform and an external General Ledger system.

If this strategy is well implemented, the user sees the whole set of applications as accessible from one point.

This strategy is generally achieved through usage of Middleware such as

- TIBCO, SeeBeyond, Oracle Fusion, BizTalk etc.
- Message Queuing
- Achieving command façade for all the major applications.
- SOA/Web-services have been gaining prominence in recent times.

3.3 Strategy 3: Business Process Integration

Business Process Integration takes Integration to the next level by integrating process flows across disparate applications. That is human decision points are integrated into the process through a work-flow component which works across multiple disparate systems. So you can have a new business acquisition process on one application automatically link to an underwriting process on another system followed by an asset valuation process on a third system on Unix which finally hands control back to the original policy acquisition process on a Java Application.

In short, Business Process Integration helps achieve flow of data between different organizational processes on different systems and provides ability to consolidate applications removing human intervention at multiple points in the process.

3.4 Strategy 4: Re-hosting

This is a lift and shift strategy where all code in a legacy environment is moved to a new technology environment.

A typical example is moving Mainframe Cobol to Micro Focus Cobol on windows platform. Another example is using Transaction processing monitors like Tuxedo on UNIX environment.

Lift and shift may sound very simple. But it may not always be so. Our experience suggests that around 40% of the code needs to be changed on new platforms in lift and shifts. However the changes are generally not very complex.

3.5 Strategy 5: Re-Engineering

Re-Engineering is a complete scrap and rebuild. This can be a very challenging and time consuming exercise. It is typically done when the original application is based on some very niche skills which pose a maintenance risk to your mission critical systems. Re-engineering starts with reverse engineering of the legacy functionality to determine the existing behavior. It is followed by development of the solution on a new platform.

Generally re-engineering is the best solution as it should resolve all the issues faced and the solution is built to your specifications.

3.6 Strategy 6: Replacement

One could argue that this is not much different from re-engineering. Here we just discard the old system and put a new system — probably acquired as a full-fledged product — in place.

When going in for this approach, you should do a careful fit-gap analysis between your processes and the processes that are available out of box from the product. A good product is one which can meet your requirements with minimal customization. Excessive custom scripting can create problems later when product upgrades need to be applied. This is because product vendors usually do not take responsibility for successful upgrade of non-standard functionality.
3.7 Strategy 7: Virtualization

Virtualization is fast gaining popularity these days. In this approach, the hardware is consolidated to secure savings on maintenance and simplify upgradability of the hardware. This approach can secure considerable savings on maintenance expenditure.

This option must be included in any consolidation strategy adopted by you. However do consider the security risks and ensure that you engage a reliable vendor who takes contractual responsibility for uptime and performance.

4 Conclusions

To summarize, there is a need to consolidate data, functionality and workflows in any insurance company. The benefits that an insurer can reap by smart consolidation of inherited and legacy functionality along with modern technologies and features like work flows can help carriers get an edge over their competition.

Broadly speaking there are 2 major categories — invasive and non-invasive approaches. The choice of integration strategy is largely dependent on your situation. In all likelihood you will need to adopt a Hybrid strategy based on your stakeholder expectations and your business pressures.

To help you get started, here is a small table that summarizes the choices placed in front of you. The best solution would be the one that is best for your customer and your business.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Invasive</th>
<th>Non-Invasive</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the legacy systems fulfill business requirements of future</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>One of the systems is scalable for future requirements – at least 5-10 yrs</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Business driver for consolidation is reporting and analytics</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cannot do away with any of the systems. But need to integrate data and present to users with a seamless facade</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Need to build processes using data spanning multiple systems</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

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