



Protect yourself from risk

Ensure your IT software delivers seamless performance and certainty in outcomes, providing quality customer experience



The Challenge

The Insurance industry today faces challenges on several fronts. Significant regulatory changes, increases in customer expectations, changing industry dynamics between underwriters, brokers and the customer, and reduced time to market are just some of the factors that are increasing the demands made on insurance companies.

The digital disruption that has transformed other industries now presents massive strategic opportunities for companies that are agile enough to respond – and threatens those that are not able to adapt to the new landscape. Modernisation of legacy systems is today no longer a luxury and more a necessity for the industry.

Rapid technology developments are transforming speed to market, enabling real-time decision-making, and deepening the understanding of client risk and customer needs – whilst creating more efficient, effective and agile operating models.

Legacy transformation can be accomplished through a number of diverse strategies such as adopting and adapting a commercial-off-the-shelf core system, wrapping and extending existing systems, internally re-writing existing systems or even with a more cautious continuous improvement approach. However, irrespective of the strategy adopted, the setbacks faced by such projects initially have highlighted the need for a rigorous project management approach with quality assurance as a major driver.

This white paper will provide best practice solutions in ensuring a successful transformation for the Insurance business.

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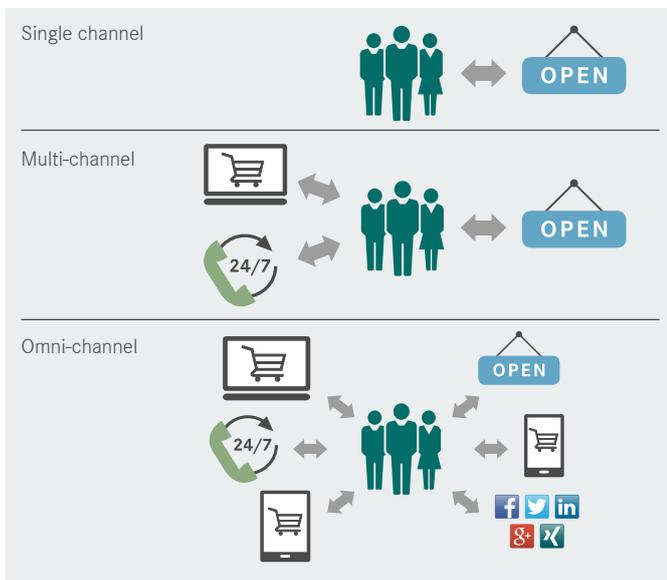
1. Key Drivers for Legacy Modernisation

1.1 Responding to Customer Demands

With the evolution of the internet of things, customers are used to having constant access to key information. They want to be able to access their policy details, claim information and complete transactions through multiple devices.

The customer experience approach set up by retail giants, such as Amazon and eBay, has led to a huge dynamic change in the way consumers want to be able to access their information and interact with companies. Those companies have forged the way in which the retail industry conducts business – so much so that some businesses who have failed to follow this policy have failed.

It's All About The Customer: The Customer Expects Omni-Channel



The modern insurer can digitise customers, value chains and the real-world.

The insurers that survive will be able to harness the data to provide localised and customised experiences with minimum inventory.

The consumers who now expect transparency when buying products from retailers see no difference in the way they buy insurance products. It is now imperative that the insurance industry also follows the core principles which apply to omni-channel retail, which has seen companies gain a huge market share over their competitors.

“ The **consumers** who expect transparency when buying products from retailers see no difference in the way they buy **insurance products.**”

Choosing the Best Approach

The first step in ensuring that your company is responding to customer demands is to understand the requirements that need to be made on current IT infrastructure.

Companies can decide whether they need to have a complete transformation or if they can update.

Example requirements in responding to consumer demands:

- CRM system is required to provide information on historical policies and current policies.
 - Date of policy opening
 - Date of policy closing
 - Type of cover
 - Cost
 - Bills – dates of payments
 - Details of cover – what items were covered?
 - Address
 - Contact information
 - Data gathering – i.e. have they selected what cover they have?
 - Communications preferences
- Data held on CRM has to be able to be translated into new core user friendly language

- Personalisation of products based on interest in cover should be able to be marketed to the user
- Email systems need to be able to segment data based on preferences
- Information needs to be accessed through online web portal
- Website needs to be translated into a mobile website
 - Mobile website or responsive multi-device website choice?
 - Tablet website needs to be created
 - Mobile app needs to be either decided on creation or not
- Security measures need to be taken for online access
- Response on website needs to be translated to core system

Common Inhibitors within Current IT

In addition to understanding the business needs and IT requirements, it is necessary to prepare the right implementation plan taking into consideration the limitations including costs and market competition. It is also imperative that a phased approach is followed instead of the big bang approach, which will also help in a smooth transition with limited impact on day-to-day businesses which generates revenue.

1.2 Providing an Integrated View of Risk

Digital transformation of the insurance industry is rapidly happening and with the introduction of techniques like telematics brings a whole new challenge to IT implementations. For example the most recent trend is the tracking of motor miles – pay the premium based on the car usage. The insurance company tracks the car usage like mileage and speed and relates it to the premium. Apart from the functional testing of such devices, there is a whole new Pandora's box of issues like privacy, security and other performance related aspects which needs to be thoroughly looked into before it is fully integrated into the business.

Due to implementation complexities and the need to ensure visible payoffs within reasonable timelines, legacy transformation projects often need to adopt a Risk Based Testing (RBT) approach with a structured focus on key risk areas. Business priorities need to be the primary drivers for the testing.



Traditional compartmentalisation of application testing (ST & SIT) and business testing (UAT) tends to be inappropriate when the RBT approach is based on business priorities. QA teams at all phases of the testing need to have the necessary domain skills to function as business testers.

Business requirements for insurance could include

- Capturing data on geo locations
- Capturing knowledge of customers in areas with a high collision

A clear example of this working well is with Aviva. Aviva were able to pinpoint customers who had a vulnerability to flooding and provide them with sand bags. The associated claims around flooding went down by 16% with customer satisfaction up 32%.*

With methods like this insurance companies are able not only to reduce the risk to the client but also to reduce the risk of a high cost for claims. This also goes a long way in forging an everlasting bond with the customer.

1.3 Direct-to-Market Approach

With the increase in online usage the need for brokers is reducing as more and more companies are able to go direct to the consumers. The main drawback is that changing to a direct-to-market approach may result in having to invest in huge CRM infrastructures to deal with customer interaction.

* <http://www.qck.com/aviva-sends-out-the-cavalry-to-help-floodhit-customers-194887.html>

In the meantime brokers and other insurance intermediaries like garages and health advisors are increasingly relying on real time solution support from insurers. Customer details and other support activities including sales support need to be made available to them. Brokers having white label or co-branded products expect better servicing. Bancassurance can be leveraged only when there is a dynamic support from the insurers.

When enabling the direct-to-market approach, insurance companies have to build more resilient systems which have to be functionally efficient and resilient to face performance and security requirements. This warrants an integrated test approach which combines both functional and non-functional testing. Agile is also becoming increasingly adapted as a key process to ensure that development and testing go hand in hand, which eliminates identification of key issues at a later stage.

1.4 Maintaining Regulatory Compliance

Regulation in the form of the Retail Distribution Review (RDR) and Solvency II* pose new challenges for insurance companies. It is often a long drawn-out process of integrating the existing application landscape with the newer BI tools or Data ware changes to comply with the statutory reporting requirements.

Solvency II involves an organisation's ability to manage operations and remain solvent. This means that there is clear traceability from the business initiation, investment, reinsurance, claims and operations. This intertwining needs clear understanding of the insurance company's business and considering the volume of business transactions this is a huge challenge for IT teams. This is precisely the reason why the deadlines have kept shifting. Now that the dates are firmed up, specialist knowledge of technology and standards is required to go hand in hand to ensure companies meet the deadlines.

Regulations like RDR and Solvency II are much more complex because they transform the way business has been doing things up until now and involve major changes to the core insurance applications. The implementation is complex – major customisation to the existing application or migrating to a new system.

* <https://www.abi.org.uk/Insurance-and-savings/Topics-and-issues/Regulation/Solvency-II>

This is more the case for organisations dealing with Life and Annuities since the duration of product life is longer and ranges from 1 to sometimes 40. There is also a significant impact on the existing data since data migration is also required.

1.5 Need to Improve Security to Prevent Fraud and Customer Data Leaks

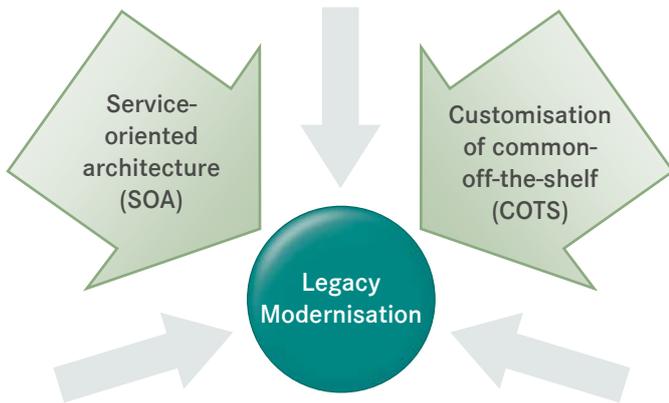
The access and management of data is often the primary pain point with legacy systems when data is held in heterogeneous and poorly normalised systems. There is an increase in cost to run batch jobs, which generate reports 24 to 48 hours after they are needed. Furthermore, this legacy data often needs to be integrated with other database systems that are located on different platforms. An insurer may have separate legacy systems that drive its policy administration, claims and accounting functions. Sharing of data between the systems drives up costs and drives down productivity. By implementing a single solution, the insurer can harness the common data within each system to facilitate the process flow across the organisation.

Different techniques such as implementation of database gateways, XML integration, and database replication can be suitably chosen. This is more suitable when the changes have to be made to meet reporting requirements like PRA and FSA. It is always difficult to assess the vulnerability in complex application landscapes and more so when multiple applications are intertwined with each other. Insufficient testing would lead to potential fines, market share loss and impact on reputation. Robust security testing includes vulnerability assessment, penetration testing and network perimeter testing.



2. Approach towards Legacy Modernisation

There are multiple approaches to modernising an existing legacy system. Primarily two main strategies are used:



Option 1: A service-oriented architecture approach involving the wrapping/extension of existing systems

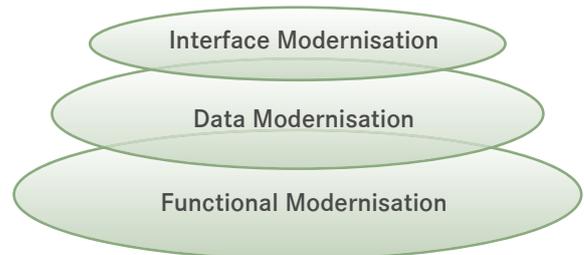
Option 2: Transformation projects usually involving customisation of common-off-the-shelf (COTS) core systems

2.1 Service-Oriented Architecture (SOA) Integration

Instead of redeveloping applications, more and more organisations are realising that it makes more economic and strategic sense to reuse and repurpose existing assets that the organisation has invested in over many years.

With this approach, the source code remains mostly unchanged and the application is wrapped using SOA components, thus creating services that can be exposed and registered to an SOA management facility on a new platform, but are implemented via the existing legacy code. The legacy application is left intact in this method.

Integration takes place on three tiers:



User Interface (UI) Modernisation

The UI modernisation approach enhances the interfaces of legacy applications with GUI screens and web services without changing the underlying application.

A common technique for UI modernisation is screen scraping, which consists of wrapping text-based interfaces with new graphical interfaces. Another non-intrusive approach is to build callable APIs around legacy transactions, providing an integration point with other systems. Wrapping does not provide a way to fundamentally change the hardwired structure of the legacy system, but it is often used as an integration method with Enterprise Application Integration (EAI) frameworks.

Data Modernisation

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Functional (Logic) Modernisation

Functional (or logic) wrapping encapsulates the business logic embedded in the legacy system. Logic modernisation can be used to

- Combine screen-based business logic and data, not just from one application or platform, but from many applications and platforms, into a composite application, making the problem of multiple, functionally dissimilar applications effectively disappear.
- Create new “cross application” workflow including email generation and desktop integration without changes to the existing systems.
- Enhance current functionality. Typical examples are improved data entry validation and the use of modern widgets and navigational aids.

Some of the techniques used are object-oriented wrapping and component wrapping.

2.2 Transformation

The transformation approach is typically the most complex and challenging when it comes to legacy modernisation. It nevertheless promises the maximum benefits on successful completion. Transformation can be accomplished in multiple ways, such as re-hosting applications to a compatible environment maintaining the original application language or through platform migration, where the focus is moving from one technology base to another as fast as possible and with as little change as possible.

The approach to transformation can involve:

- Legacy migration
- Legacy re-hosting
- Re-engineering

“The **transformation approach** is the most complex and challenging but promises the **maximum benefits on successful completion.**”

Legacy migration involves migration of languages, databases or platform using simulators or code converters. This transformation promises significant cost benefits with the usage of tools available for code conversion. Transformation of new business, claims and policy management systems to the new platform can be done phase-wise to improve the time to market.

Legacy re-hosting involves running the legacy applications on a different platform without major changes. This is often necessitated when the OS support is no longer available or the application is based on APIs which are no longer supported on the platform.

Re-engineering is the most effective technique in vogue today. This can involve new technology, platforms or customisation of COTS products. Utilisation of service oriented architecture (SOA) and web services during this process helps in integrating multiple applications and also provides the flexibility for enhancements in the future. This transformation approach also provides an excellent opportunity to reconsider current business processes and make long overdue changes. For example a re-engineering of policy management system for a large auto insurer reduces the cost of maintenance by more than half.

2.3 Pros and Cons of the Legacy Modernisation Approaches

The commercial market provides a variety of solutions to this increasingly common problem of legacy system modernisation. However, understanding the strengths and weaknesses of each modernisation technique is paramount to select the correct solution and the overall success of a modernisation effort.

Method	Techniques	Strengths	Weaknesses
UI Modernisation	Screen Scraping	<ul style="list-style-type: none"> • Low cost • Time to market • Internet support 	<ul style="list-style-type: none"> • Little flexibility • Limited impact on maintainability
Data Modernisation	Database Gateway	<ul style="list-style-type: none"> • Cost • Tool support 	<ul style="list-style-type: none"> • Limited impact on maintainability
	XML Integration	<ul style="list-style-type: none"> • Flexibility • Tool support (future) • B2B 	<ul style="list-style-type: none"> • Tool support • Evolving technology
	Database Replication	<ul style="list-style-type: none"> • Performance • Reliability 	<ul style="list-style-type: none"> • Data coherence • Applicable to a very specific problem
Functional Modernisation	OO Wrapping	<ul style="list-style-type: none"> • Flexibility 	<ul style="list-style-type: none"> • Cost
	Component Wrapping	<ul style="list-style-type: none"> • Flexibility • Integrated services 	<ul style="list-style-type: none"> • Cost

3. Best Practice Approach

First Stage

The creation of a strategic roadmap with the business case for the transformation, along with a model for the return on investment, needs to mark the first step in the road to legacy transformation.

From the project risks point of view, underestimation of effort, schedule and/or costs has been determined to be a key risk in legacy transformation projects. Too often there is a tendency to underestimate project complexities at this stage. While building a business case is critical for any transformation project, the need to factor in quality assurance objectives is often overlooked.

The involvement of the QA team at this definition stage itself can result in more realistic timelines tailored to meet project and quality objectives. This can also find out if the current systems would actually support the new demands put on to them without having to invest in infrastructure.

Second Stage

Evaluation of business requirements is the second stage in legacy transformation. There is a tendency to rush into the functional specifications prior to a detailed business requirements analysis. This results in a large number of gaps being discovered during the implementation and testing stage. Business requirements need to be first detailed without focusing on actual functional implementation. The opportunity to reconsider existing business processes during this stage and re-factor them appropriately can also be explored at this stage.

Third Stage

Selection of the technology and appropriate implementation methodology marks the third stage in legacy transformation. Extensive analysis of applications along with examination of business and technical capabilities is required for an appropriate solution to be reached. The integration aspects of the required solution need to be factored into the decision-making process.

“ This can also find out if the current systems **would actually support the new demands put on to them.**”

Based on the technology and methodology adopted, a detailed Quality Management Plan and Test Master Plan needs to be devised to ensure that all quality objectives are met. Any such plans need to be closely allied with the development and implementation methodology. With agile methodologies gaining prominence in the SDLC, close co-ordination of development and testing teams needs to be planned. It is to be noted that with the rapid strides in communication technologies, physical proximity of teams is less of a requirement. The project schedule needs to adequately factor in the time required for the test phases as determined by the QA team based on the implementation methodology and scope. The entry and exit criteria for each phase along with the service level agreements (SLA) need to be defined as a part of the plans in a comprehensive manner with the involvement of all stakeholders.

4. Legacy Modernisation Conclusion

While it is impossible to get away from the issues that insurers are currently facing, it is possible to identify one of the root causes for these problems as a lack of understanding when it comes to legacy IT systems. Customers start to feel the pain when organisations work outside the parameters of their systems and start to add extra components without investigating the potential pitfalls in performance.

Legacy modernisation, when implemented under guidance and supervision of professional experts who have a deep insight into the business and who could also evaluate and analyse the latest technologies that drive the modern businesses, will yield the most value.

Not all Insurance companies are alike due to their own specific areas of operation ranging from Motor, Property, Liability and other casualty lines which spreads across multiple industries. Therefore the experts who implement the legacy modernisation should be well equipped with the knowledge spread across all the said businesses to understand their systems and bring the best and optimized modernisation.

At every stage of implementation, the quality assurance is the most critical aspect that has to be closely monitored to gain the full benefits of modernisation.

At SQS, we have an unrivalled team of consultants from the insurance industry who shape and drive critical business software change initiatives across the globe. SQS' goal has been clear from day one: to help companies optimise their business processes and improve their performance through enhanced software quality. The team at SQS help deliver a smooth transition by stepping in right at the inception of modernisation. The team would help you right from the selection of modernisation techniques, evaluating the right product for your business depending on the business needs, budget and time constraints. As they say, "Get the first step right and the journey is half done".



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