Lincoln Re Case Study
1997-2000 Services Renewal
Why is Mortality Management Important?

Distribution of Life Insurance Expenditures, 1998

- Benefit payments: 59%
- Taxes: 2%
- Dividends of stock life insurers: 2%
- Additions to reserve: 27%
- Operating expenses: 4%
- Agent Commission: 6%

86 cents of every dollar goes to mortality expense!

Source: American Council of Life Insurance
The Role of Reinsurance

- Reinsurance is insurance for insurance companies.

- In exchange for a premium, the reinsurance accepts a portion of the risk written by the primary insurer.

- It generally involves risks which are large or complicated.
How Do Reinsurers Make Money?

Underwriting Profit

- Reinsurance Premiums
- Less Commission and Expense Allowance Paid to Direct Company
- Less Claim Costs
- Plus Interest on Cash Flow
- Less Reinsurance Expenses
The Old Model: Coinsurance

• Annual Gross Reinsurance Premium: $3.26 Per $1,000 of Face Amount
• Commission and Expense Allowance: 100% First Year; 20% Renewal Years
• Present Value of After Tax Profits: $750 Per Million
• Profit Margin: 4.0%
• Return on Investment: 16%
Lincoln Re Life Reinsurance
Steady Growth

Individual Life Earnings

CAGR 1993 – 1999 17.7%
CAGR 1996 – 1999 22.7%

$ millions

0 20 40 60 80 100

34.6 41.4 43.4 49.8 71.9 83.5 91.9

Life Reinsurance – U.S. Leadership

Top U.S. Life Reinsurers

Source: SOA / Munich Re Survey
Reinsurance versus Retained Business

U.S. Ordinary Individual Life Insurance Sales

More Business is Now Reinsured than Retained!

Source: SOA / Munich American Re Survey

## Life Reinsurance versus Direct

### Direct Market Size

($ billions)

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<tbody>
<tr>
<td>Retained</td>
<td>894</td>
<td>833</td>
<td>768</td>
<td>635</td>
<td>574</td>
<td>613</td>
<td>-7.3%</td>
</tr>
<tr>
<td>Ceded</td>
<td>216</td>
<td>261</td>
<td>350</td>
<td>507</td>
<td>679</td>
<td>787</td>
<td>29.5%</td>
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<tr>
<td>Total</td>
<td>1,110</td>
<td>1,094</td>
<td>1,118</td>
<td>1,142</td>
<td>1,253</td>
<td>1,400</td>
<td>4.8%</td>
</tr>
<tr>
<td>Ann. %</td>
<td>-1.4</td>
<td>2.2</td>
<td>2.1</td>
<td>9.7</td>
<td>11.7</td>
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*The reinsurance market’s growth is six times the direct market’s!*  

Source: SOA / Munich American Re Survey
Not All Is Roses

- Traditional reinsurance is becoming a commodity product because there is an excess of capital in the market.

- Off Shore reinsurers fighting to enter US market.

- The challenge facing LincolnRe was/is to “decommoditize” reinsurance through services innovation and a new business model.
Good, but Expensive

Price of Reinsurance
Highly Price Competitive

Risk Management Expertise
Strong

Not Price Competitive

RGA
Transamerica
M&G
Swiss Re
LRe

Cologne
Munich
Life Re
Employers
The New Strategy

• Accept Underwriting Risk

• Create Solutions

• Provide Service
An Emerging Risk Management Solutions Value Chain  
(where Traditional Risk Transfer is but a Subsystem)

- Develop unique, customized risk management solutions by sharing risk, knowledge, capital and the capability of alliance partners.
- Avoid being a commodity. Compete by applying resources toward solutions involving as many of the value creating activities of clients as possible.
- Make the strategy real by creating families of solutions from components which can be re-configured and re-used.
Develop and Beta with a Lead User
A New Preferred Term Life Deal

• Preferred Risk Term Insurance -- low cost insurance, great interest in the industry because it can generate great consumer demand - but not trivial to deliver effectively (terms, conditions, pricing, and individual case underwriting guidelines require special expertise).

• One large insurer/client had tried to offer a Preferred Term product and failed; the product proved too “expensive” in terms of the loss ratio (claims to premiums paid)

• LincolnRe design a new Preferred Term product based on LincolnRe's proprietary data and underwriting knowledge.

• LincolnRe’s reinsurance contract with the client was “quota share” -- a split of the premium dollars from new insurance sales. Not $3 per $1000 anymore.

• The client has sold $5 billion of the new Preferred Term Product -- and for LincolnRe, the quota share is very profitable -- with good loss ratio experience due to the application of the LincolnRe Mortality System.
Lincoln Re: 50% of new revenue in growth from $1B to $1.5B
<table>
<thead>
<tr>
<th>Opportunity Identification</th>
<th>The Problem</th>
<th>Conventional Solution</th>
<th>Innovative Solution</th>
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<tbody>
<tr>
<td></td>
<td>Insurers are under increasing price and performance pressure.</td>
<td>Traditionally, reinsurers are only concerned with servicing existing business from clients.</td>
<td>Account executives looked for growth opportunities within specific clients that could only be achieved by application of Lincoln Re’s actuarial expertise and financial resources as a reinsurer.</td>
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<td>They require new products, more aggressive pricing, and new distribution channels.</td>
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<td>New Strategy.</td>
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<td>New Marcomm</td>
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<td>Solutions Development</td>
<td>The Problem</td>
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<td>Insurers need to develop new solutions for consumers who are more interested in mutual funds as investment vehicles, and see insurance only as a gap filler.</td>
<td>Reinsurers leave this one to the insurers to figure out.</td>
<td>Lincoln Re combines its underwriting knowledge and actuarial expertise into an expert system (software) that is used to tune packaging and pricing.</td>
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<tr>
<th>Insurance Product Development</th>
<th>New and existing insurance products need to be adjusted for new risk factors in society, both here and abroad.</th>
<th>All reinsurers have actuaries, underwriters, and medical directors.</th>
<th>Lincoln Re's seeks to understand the underlying rates and causes of mortality, using both internal knowledge and external information.</th>
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<tbody>
<tr>
<td>Do they innovate? Most often, NO.</td>
<td></td>
<td></td>
<td><strong>LMS</strong></td>
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<tr>
<th>Distribution</th>
<th>Clients need to find new channels to upsell their existing customers with new products and services.</th>
<th>Reinsurers leave this one to the insurer to determine and implement.</th>
<th>Lincoln Re has purchased two direct mail and email brokers, one for the US and the other for Europe. These companies can be brought into any deal negotiation.</th>
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<td><strong>NEW CHANNELS</strong></td>
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<td><strong>Deal Negotiation</strong></td>
<td>The insurance client is looking for the best value/cost proposition.</td>
<td>Rather than be paid a several dollars on every $1000 of reinsured face amounts, Lincoln Re shares in the premium dollars and total potential claim of the policy.</td>
<td></td>
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<td>Traditionally, reinsurers compete on price more than they do on 'value' or underwriting expertise.</td>
<td>QUOTA SHARE</td>
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<td>Lincoln Re has traditionally argued that its better understanding of risk warrants a higher price for reinsurance contracts.</td>
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<td>Competitors take business by discounting Lincoln Re's prices.</td>
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<td>Facultative Underwriting</td>
<td>The Problem</td>
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<td>Once a reinsurance contract is in place, individual policies must still be assessed for risk and specific pricing.</td>
<td>Reinsurance underwriters traditionally receive policy applications information. They assess risk. The order physician exams, blood tests, motor vehicle reports, talk to agents, etc.</td>
<td>Lincoln Re does traditional facultative underwriting. However, it has also developed an underwriting expert system. It automates ordering. If a client uses the expert system to underwrite a case, the reinsurance part of it will be automatically priced by the system.</td>
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<tr>
<td><strong>Administration</strong></td>
<td>Clients need correct tracking and invoicing of reinsurance activity, and payment of claims, with electronic communication.</td>
<td>Most reinsurers are at parity in having cumbersome, inflexible mainframe administration systems. Lincoln Re is no different than most: It has mainframe legacy systems that it is trying to reimplement as client server applications.</td>
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<td>Most reinsurers are at parity in having cumbersome, inflexible mainframe administration systems.</td>
<td><strong>AT PARITY</strong></td>
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Teams Mirror the Platform Strategy
Co-rewarded on Multiple Measures

Account Executive
Pricing Actuary
Case Underwriter
Administrative Specialist
Measures of Overall Subsystem Effectiveness: The Value Drivers

Problem Seeking and Opportunity Identification (creating opportunities for deals)

  Growth of inforce insurance (annualized, averaging about 10%)

Solution Development and Deal Negotiation (pricing and structuring deals right)

  Book New Business (in millions of dollars)
  Profit / Premium (percentage, ranging about 7.5%)
  Return on Investment (percentage, ranging between 17 and 20%)

Underwriting and Research and Development (protecting value)

  Actual Mortality (loss ratio of claims to premiums --ranging from 75% to 85%)
  Actual Lapse Rate (non-renewed insurance, ranging from 8% to 15%)

Administration (operating efficiency)

  Actual expenses (non-claims) versus premiums (percentage, ranging about 7.5%)
Specific Measures for Teams/People

Account Managers

Business Measures: LincolnRe market penetration by account number and business volume
Activity Measures: % accounts visited, % with account plans
Per Visit Ratio’s: insurer size, Rx potential, new business, visit expenses, quote opportunities
Other Measures: # of Rx quotes, number of wins/number of quotes, volume won/volume quoted
Knowledge Use: % of time mortality experience used in quotes

Pricing Actuaries:

% of quotes reviewed
Volume reviewed at individual policy level

Underwriters

% of cases reviewed (facultative UW)
Number of case audits
Average age or cycle time of case worksheets (measure of work in process)
Variance of post facto case audit results to initial risk assessment

Administrative Specialists:

Claims: % claims reviewed
Administration: % of policies reviewed, average age of unsigned Rx agreements
Legal/contracts: % contracts reviewed, number of conflicts, retention limits
Platforms and Derivative Products

Leveraging a Platform Subsystem as a New Business Area

Expert Systems for licensing to 3rd parties

Architecture and Platforms

- Problem Seeking
- Opportunity Identification
- Solution Development
- Pricing and Packaging
- Distribution
- R&D
- Distribution
- Deal Negotiation
- Underwriting
- Administration
  (Processing new contracts and claims)

Preferred Term Life

Variable Life Insurance

Future Products .....
The New Model

• Quota Share Reinsurance Generates Three to Four Times the Premium Generated by Excess Reinsurance!

• New Opportunities For Fee Income From Providing Outsourced Underwriting Also Exist
Typical New Model Case

- Lincoln Mortality System – Product Design
- 20-year Level-term Product
- Multiple Preferred Classes
- 50% Quota Share Reinsurance
The New Model
A Deeper Partnership

Total Recurring Paid New Business from LMS Clients

$ billions

100
90
80
70
60
50
40
30
20
10
0

1997
1998
3Q99

39.5
57.1
89.8

More Growth

Expand Mortality Management Platform

• International Business
• New e-business Opportunities
International Markets

Exporting Mortality Management through the Lincoln Mortality System

• Mexico
• Japan
• Developing Reinsurance In China
E-business – E-products for E-customers

• Use of Lincoln Mortality System to develop Simplified, Web Term Products

• Web-Enabled Front End of Lincoln Mortality System to Enhance Access by Clients