

Prudential ERM Seminar - 10 September 2015 Alan Merten, Market Leader, Insurance Consulting, Asia Pacific Muhammad Ismail, Director, Risk Consulting, Indonesia



Agenda

- Why do we run insurance companies?
- How do we run insurance companies?
 - Management of insurance risk & reward
 - Claims To pay or not to pay, that is the question!
 - Persistency / Renewals The nirvana of Lifetime Customer Value
- What does the new world mean for us?
- Embedding ERM in the organisation



What is insurance?



Key features of insurance



(hopefully) Long-term contracts between customer and insurer



- Premiums paid in advance
 - In return, insurer needs to be ready to pay claims/benefits later
 - Amounts can be substantial



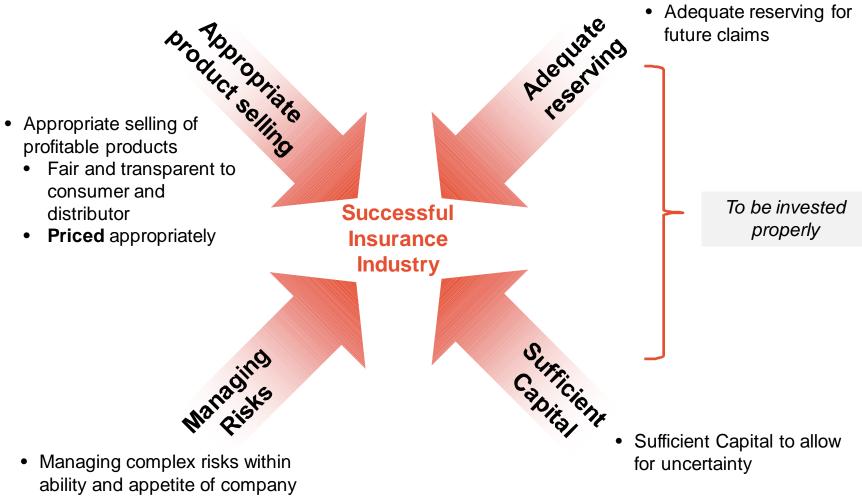
Consumers need to be able to trust the industry



Uncertainty and large amounts of money at stake



Key aspects of a successful insurance industry



• Long-term sustainability

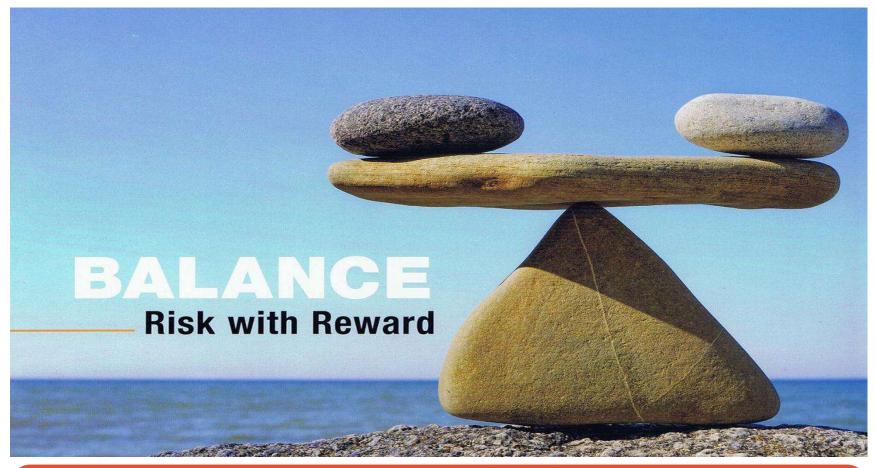
Dealing with Risk

Risk is the possibility of loss and there is an uncertainty element to it.

In dealing with risks, one can:

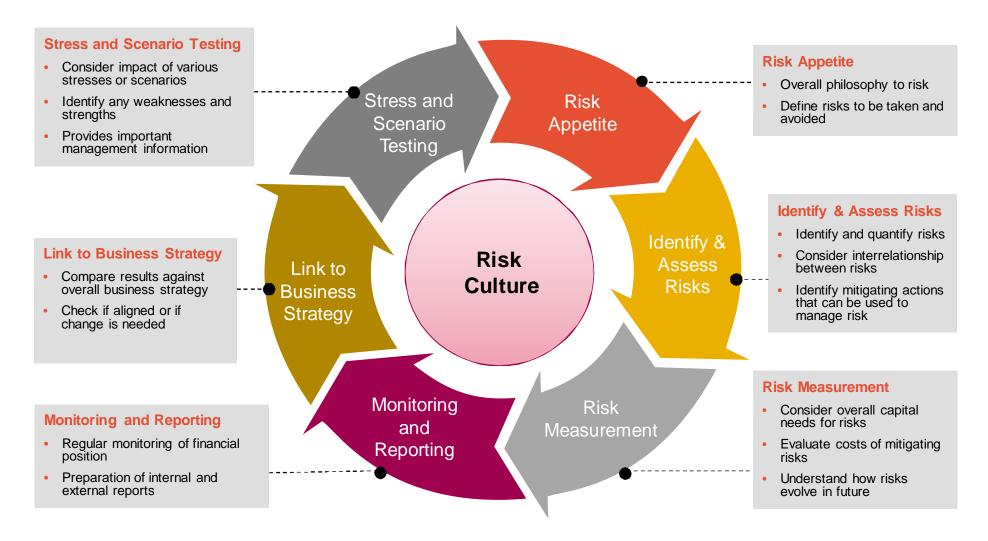


What is risk management: balancing risk and reward



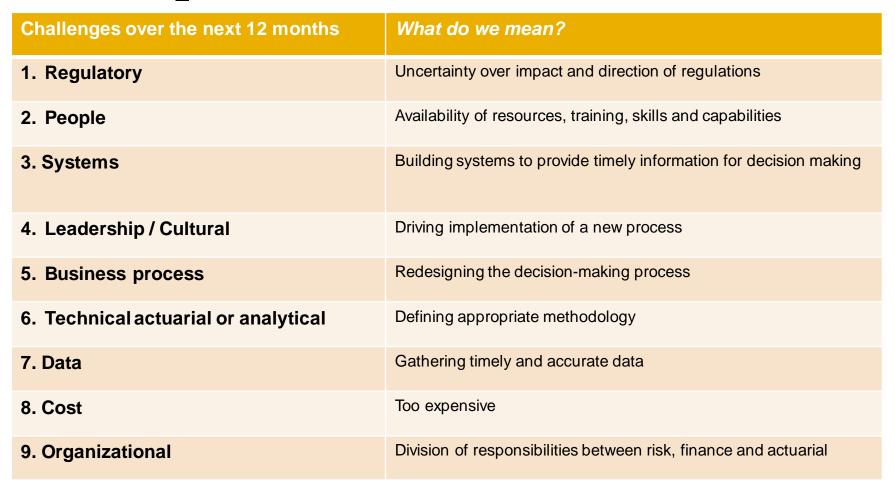
Good risk management allows companies to align risk and reward with business strategy and proactively take advantage of opportunities and protect the downside.

Enterprise Risk Management



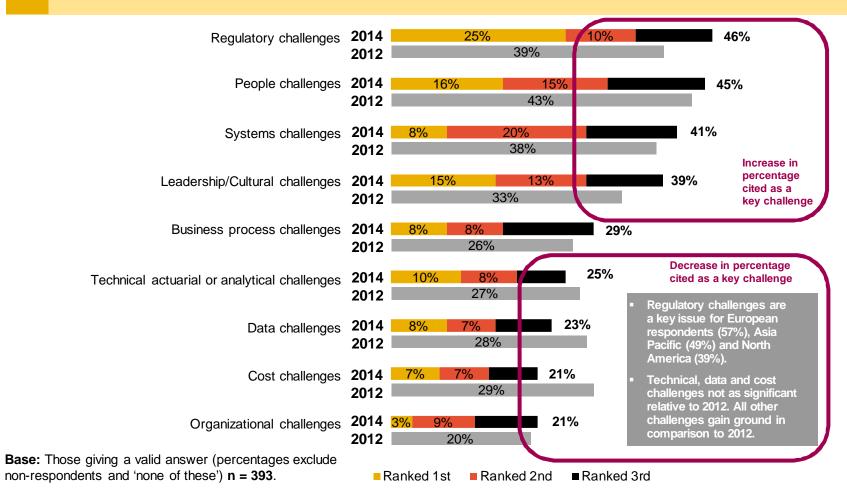
ERM in the organisation

Which of the following areas present the greatest challenges to your organization in terms of implementing ERM over the next 12 months? Pick $\underline{3}$ out of the below



How do your answers compare to our ERM Survey 2014?

Q.12 Which of the following areas present the greatest challenges to your organization in terms of implementing ERM over the next 12 months?

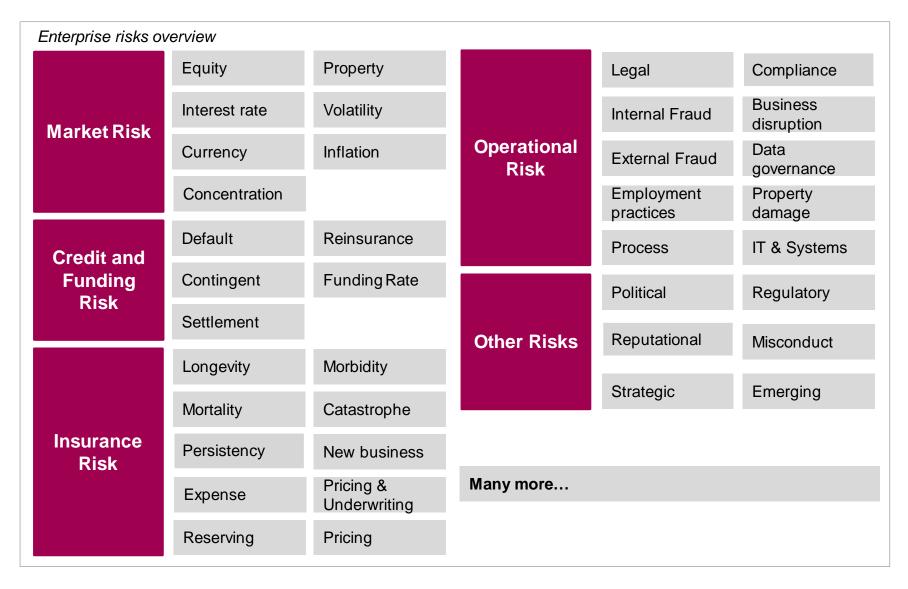


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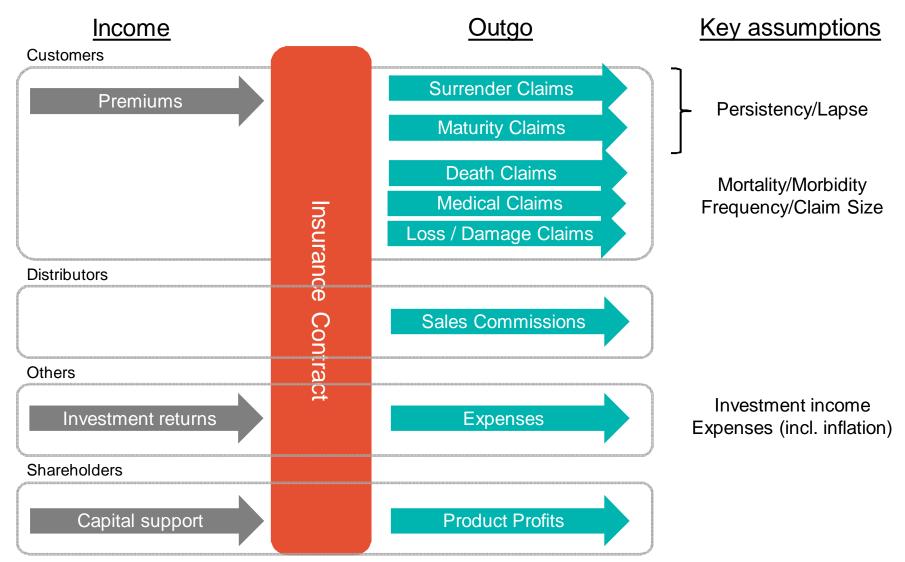
Risk areas



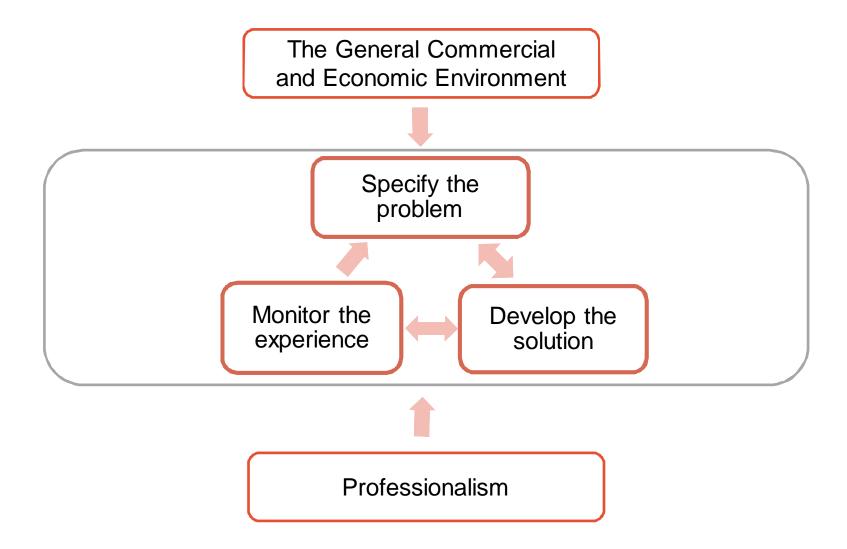
Importance of assumptions

Model	Model is only useful if it is based on reliable input (i.e. assumptions)
Information	 Information is key to setting assumptions for the initial pricing and ongoing management of products Good information -> effective assumption setting Poor information -> additional margins to allow for uncertainty Impact on Pricing: Competitiveness and profitability of insurer, value and security to policyholders Management: Effectiveness of management
Development of information	 Illustrated by the Actuarial Control Cycle Applied throughout the life cycle of the product, from pricing to management Dependent on proper collection of detailed information by Industry/Regulator/Government body Individual companies

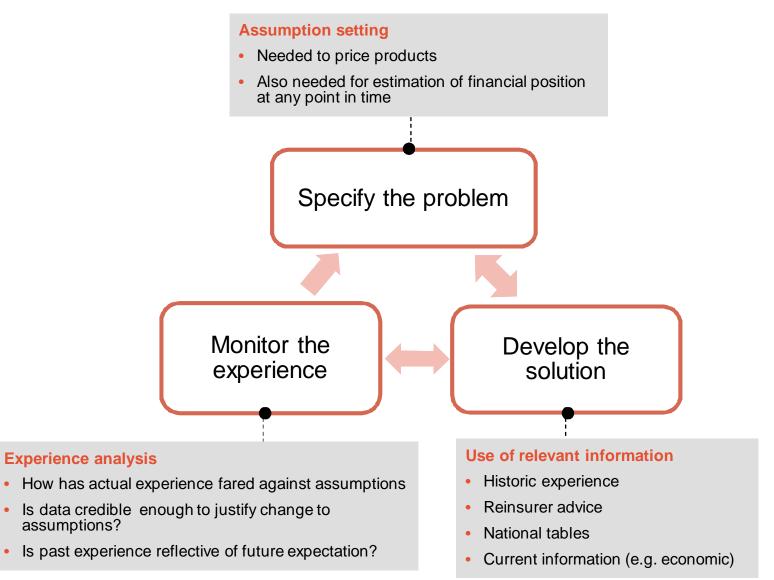
Key assumptions needed for pricing



Actuarial Control Cycle



Actuarial Control Cycle – Assumption setting



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Example

Term Assurance Product

- Policy lasts for 10 years
- Policyholder pays a fixed premium every year
- If policyholder
 - dies during policy term, beneficiary receives a fixed lump sum payout
 - (e.g. IDR100m)
 - survives till the end of the policy, no benefits are paid
- Policyholder can terminate policy at any time

• How to determine an appropriate premium to charge?

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Example – Transfer Risk: the Impact of Reinsurance

• Sample projected cashflows for term assurance product

	1	2	3	4	5	6	7	8	9	10
Premium	1,000	850	765	708	672	639	619	601	583	565
Reinsurance premium	(389)	(330)	(304)	(295)	(301)	(314)	(340)	(369)	(400)	(429)
Claims	(505)	(429)	(395)	(383)	(391)	(408)	(441)	(479)	(519)	(557)
Reinsurance claims	353	300	276	268	273	285	309	336	363	390
Expense	(100)	(43)	(38)	(35)	(34)	(32)	(31)	(30)	(29)	(28)
Commission	(500)	(255)	(77)	(28)	(27)	-	-	-	-	-
Increase in Reserve	(540)	74	(72)	(86)	(44)	(15)	53	129	210	290
Investment Income	21	25	29	31	32	32	31	27	21	12
Gross Income	(659)	193	184	179	181	188	200	214	229	243
Тах	165	(48)	(46)	(45)	(45)	(47)	(50)	(54)	(57)	(61)
Net Income	(494)	145	138	135	136	141	150	161	172	182

Source: Sample cashflows from financial modelling software MoSes[™]

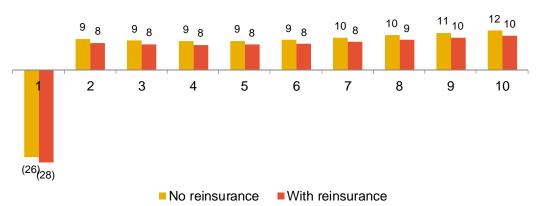
	No Reinsurance	With Reinsurance
Payback Period	4	5
Breakeven Year	2	2
IRR	33%	25%
Profit Margin (% annual premium)	49%	34%

 Usage of reinsurance reduces overall profits as profits are shared with the reinsurer

Example – Impact of Reinsurance

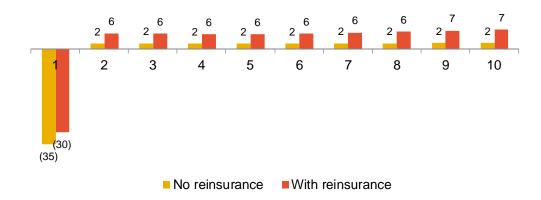
If results are according to plan,

	No Reinsurance	With Reinsurance
Payback Period	4	5
Breakeven Year	2	2
IRR	33%	25%
Profit Margin (% annual premium)	49%	34%



If claims are 40% higher than expected,

	No Reinsurance	With Reinsurance
Payback Period	-	6
Breakeven Year	2	2
IRR	-10%	13%
Profit Margin (% annual premium)	-38%	7%

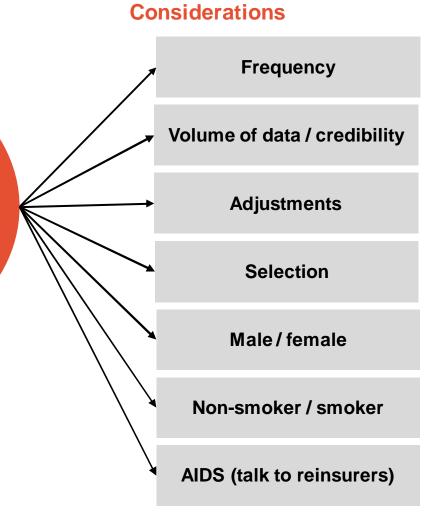


Reinsurance helps reduce volatility of results

Mortality / Morbidity

What?

- Comparison with industry tables
- Comparison with reinsurers' rates
- Comparisons with pricing assumptions



Lapses / Persistency

What? **Considerations** Frequency **Monitoring trends** • Analyse by plan code **Comparison with industry** • data Analyse by duration **Comparisons with pricing** • assumptions **Base plans/ riders Distribution channel**

How strong do risk factors impact financial results ?

Consider impacts of mortality and persistency risk factors on profit margin for various typical product types :

Change in profit margin (illustrative)	Educational Endowment	SP MRTA	15 Pay Wholelife
Mortality +20%	- 0.45%	- 6.60%	- 2.50%
Mortality +40%	- 0.90%	- 13.20%	- 6.40%
Lapse +20%	- 0.80%	- 0.30%	+ 0.30%
Lapse +40%	- 1.70%	- 0.60%	+ 0.50%

Mortality risk has a strong impact on SP MRTA and also but less on 15-Pay Wholelife, and a very little impact on Educational Endowment. More sophisticated monitoring needs to be performed on mortality experience of SP MRTA and 15-Pay WOL.

Lapse risk has little impacts on all those products.

In performing an experience analysis, the impact on results should be considered, before going into too much detail.

Key assumptions – life insurance example

	Discount rate	Investment return	Bonus policy	Decrement rate	Expenses
Par / Universal Life					
Unit Linked			-		
Non Par Protection		~	-		
Non Par Savings			-		

What about for your overall business??????

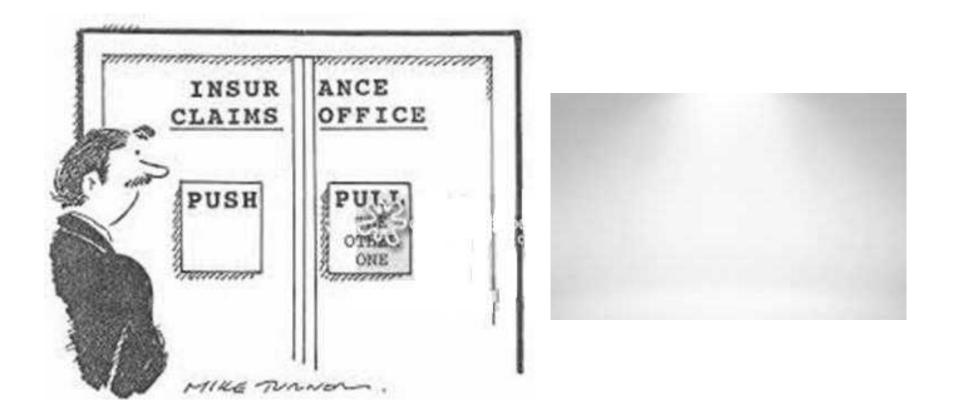
ERM in the organisation

What are the main challenges in understanding your company's persistency/renewal experience? (choose your top 2)

- 1. Lack of data
- 2. Inaccuracies of data
- 3. Lack of people (with competence) to analyse
- 4. Can't do anything about improving it so we don't spend time on it
- 5. Low priority to spend time on vs other things



Let's remember though - we are in the business of paying claims...



https://www.youtube.com/watch?v=RXUvZxjJhig

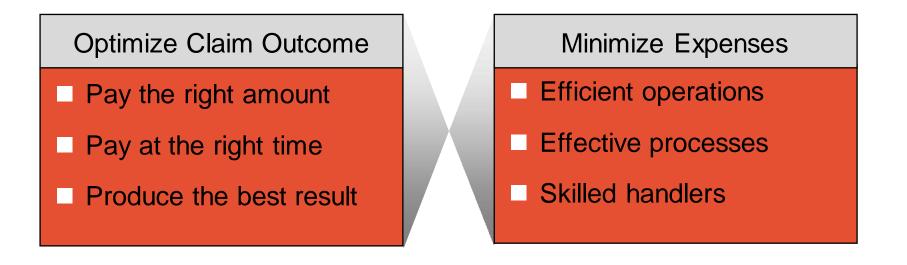
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Goals for managing claims have not changed over time

Primary goals for claim management are consistent and clear across the industry



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Claims Philosophy

What is a claims philosophy?

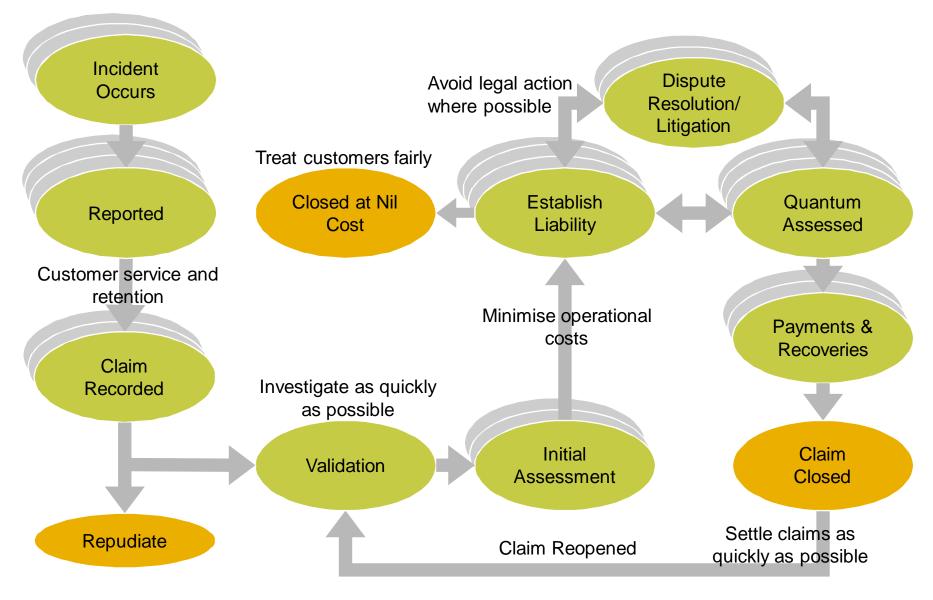
A high level written approach to claims management that is distributed throughout the company

The aim:

- Describes the required balance of service level and costs
- Ensures potentially conflicting requirements are formed into a cohesive approach to claims
- Informs the role of the claims department and claims manager
- Sets the standards that will be required from the claims management
- Approach to outsourcing

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What is Claims Management



towerswatson.com

Overpayment of Claims

For what reasons would claims be over-paid?

- \$ Cause of loss wasn't within scope of policy
- \$ Excess was not properly applied
- \$ Claim was covered and paid under more than one policy
- \$ Loss date was not within the effective policy dates
- \$ Under-insurance not calculated correctly
- \$ Insufficient investigation in to liability and quantum
- \$ Depreciation not taken into account
- \$ Inappropriate expert hired
- \$ Wear and tear not applied
- \$ Recoveries not made in time
- \$ Fraud & Over-servicing

Managing Claims

What statistics will be useful to monitor the claim performance?



Frequency and severity split by claim type



Incurred losses vs. ultimate claim cost







Trends in claim cost



Speed of reporting

Speed of settlement



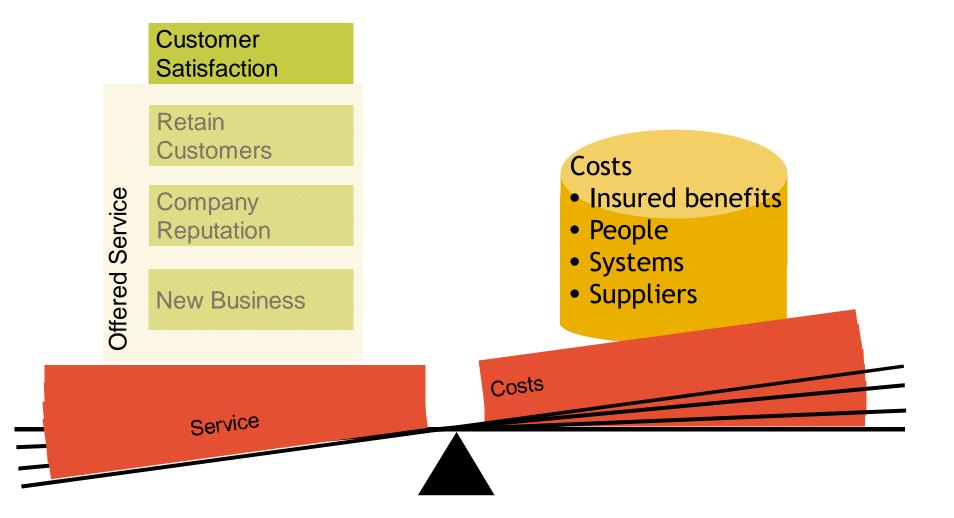
Operational cost per claim





Identifying large claims

A Balancing Act



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A Balancing Act

Another element to the cost service balancing act is the decision on whether to outsource or keep the work in-house.

	Outsource		In house
Be	mefits of each		
	Focus on core activities	Р	Progress knowledge and maintain intellectual property
	Access to a wider skills base	C	control over required level of customer service
	Transfer of technology costs to third party	С	out third party profit margins from costs
	Access to economy of scale		otential additional administration and system acompatibility avoided
	Smooth out workloads, flexibility	N	lo dependency on external providers

If you outsource – manage vendors well!

Towers Watson Vendor Accountability Model – Medical TPA example

	Define	Measure	Analyze	Improve	Control
Partner Integration	Vendor roleWorkflowsAreas for collaboration	Quarterly status assessmentsAnnual performance reviews	Experiences of patients, vendor partners and key constituents	• Strive toward a seamless, member-centric experience	Update contract terms
Health Improvement	 Clinical outcomes Improvement to member health 	 Assess aggregate population results 	 Clinical data Utilization statistics 	 Health status of members Retention and productivity 	 Partner linkage to common goals
Operational Performance	Service metricsCost impact	 Quarterly reviews of self- reported results Periodic on-site comprehensive audit 	 Administrative best practices Opportunities for process improvement 	 Process effectiveness and efficiency Optimal use of resources 	 Update performance standards
Value to Members	 Perceived value Real value	 Annual reviews of vendor's satisfaction data Customized member survey 	Member satisfactionImpact on health and wellness	 Overall experience Relevant needs being met 	 Update expectations
Financial Results	 ROI Claims cost Administrative costs	 Monthly, quarterly and annual financial analysis Annual review of external indicators 	 Cost drivers External influencers 	 Reduce per unit costs Mitigate overall rate of increase 	Update expectations

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Providers can reap benefits by attempting to understand consumer behaviour

Consumer behaviour is 'the process and activities people engage in when searching for, selecting, purchasing, using, evaluating, and disposing of products and services so as to satisfy their needs and desires.' Belch and Belch

- Psychology
- Sociology
- Social anthropology
- Economics

- Demographics
- Behavioural variables
- Influences

Customer decision making process

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With the current climate and internal pressures keeping existing customers is paramount

Consumers are more likely to be resistant to approaches by providers Providers are more cautious in their spending

Customer acquisition must be as efficient as possible

e.g. it is preferable to sell to customers who are likely to exhibit higher persistency

Existing customers are cheaper to keep than new ones are to acquire

• It is cheaper to sell more to existing customers than to sell to new ones

How can you hold on to existing customers, maximise the value from them and more effectively target new customers?

Lapse or non- renewal

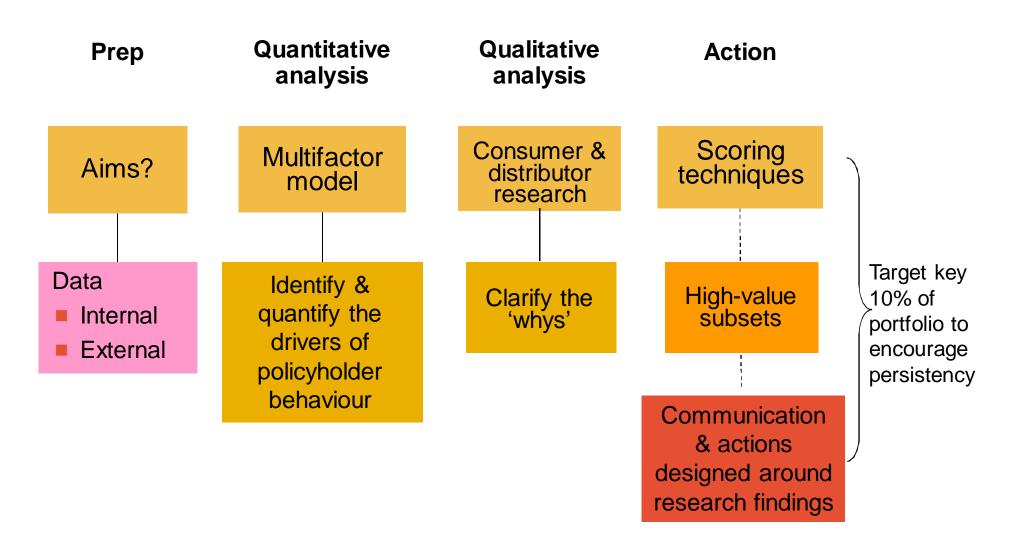
Why don't customers stay with us?



- ●[™] Loss of relationship seller moved from insurer
- Couldn't afford to keep paying
- ●[™] Found alternative provider price, quality, convenience
- ●[™] Didn't see value in policy

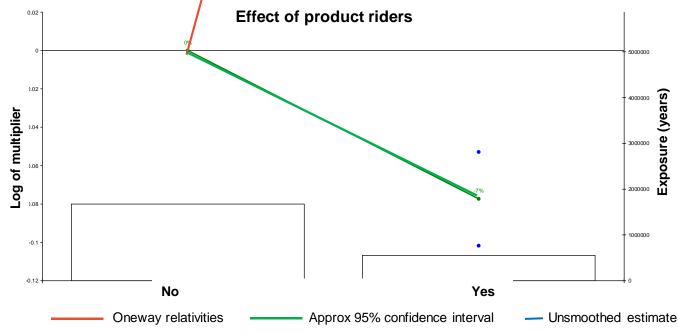
- Was convinced to buy something they didn't really want
- ●[™] Salesperson churned the policy
- ●[™] Forgot to renew
- ●[™] Product paid-out or matured (and no re-capture)

A process for more informed portfolio management

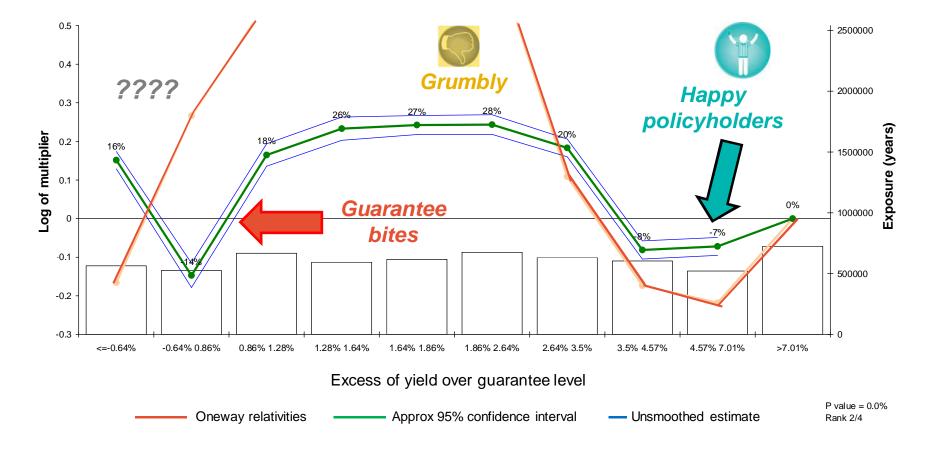


Experience analysis & assumption setting

- Investigate policyholder persistency & renewals for predictive purposes (ideally use multifactor models)
- Identify what factors influence lapse/surrender behaviour, and quantify that influence
- One of the factors can be an explicit time period factor (e.g. year or quarter of exposure)
 by isolating time trends, renders other factors more accurate
- Use techniques such as generalised linear models (GLMs) to guard against correlations in data (e.g. normally see a strong correlation between policy duration and policyholder age)



Dynamic Policyholder Behaviour – Factor based on (own fund yield – guarantee)

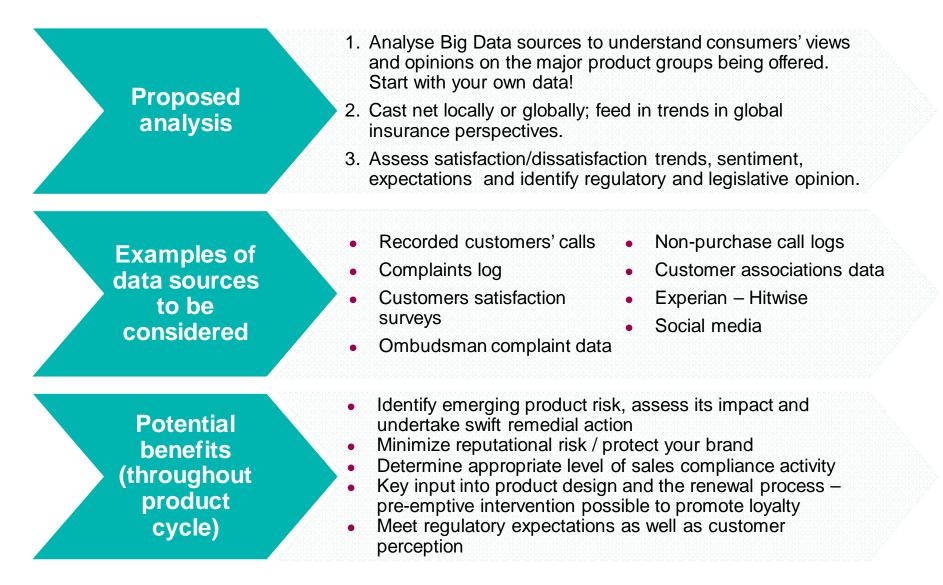


Source: Towers Watson study of a European bancassurance business

Example 1: Manage persistency/renewal levels

Proposed analysis	 Analyse in-force portfolio to identify customer groups with high "lifetime value" Analyse own proprietary data to identify, as far as possible, drivers of retention using latest analytical techniques (e.g. GLM) Determine (with distributor) how to communicate and influence high value customers
Examples of data sources to be considered	 Econometrics (e.g. historic and prospective data for interest rates, investment returns, affordability statistics) Socio-demographics (e.g. birth, marriage, divorce rates, migration, revenue income) Credit scoring (with bank partner or from 3rd party) Sentiment analysis – customers behavioural data
Potential benefits (throughout product cycle)	 Assess extent of persistency risk within key in-force portfolio groups Influence distribution, pricing, underwriting and marketing decisions (2nd line supporting 1st line of business) Increase value of in-force portfolios Improve long-term relationships with high value clients

Example 2: Product mis-selling management

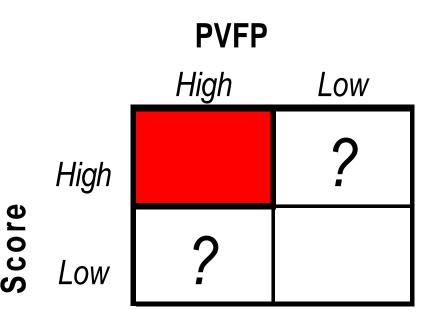


Deciding what action to take to maximise persistency/renewals

Looking to keep policyholders with high scores (high surrender propensity) *and* high value to the company (PVFP).

The provider could implement distributor or direct marketing activity to those with high scores with messages designed to counteract reasons for surrender as indicated in the qualitative research.

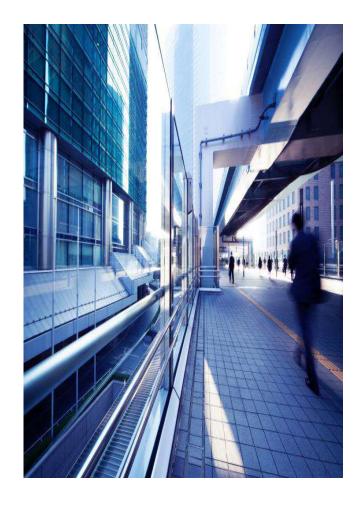
Scores could be used by call centres responding to surrender requests.



Don't forget the basics, such as aligning incentives and communicating with your distribution partners about this

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Technology Innovations will Advance Healthcare According to a Recent Study Commissioned by Intel



50% Trust a diagnosis delivered via video conference from their doctor



Other findings:

- 66% Prefer a personalized healthcare regimen
- 53% Trust a test they personally administered as much or more than a doctor
- 43% Trust themselves to monitor their own blood pressure and other basic vitals

Source: Intel

This survey was conducted online by Penn Schoen Berland on behalf of Intel in Brazil, China, France, India, Indonesia, Italy, Japan and the United States from July 28 to Aug. 15, 2013. It was conducted among a representative sample of 12,000 adults ages 18 and older with a margin of error of plus or minus 0.89 percentage points.

Future of Medicine - Ingestible Sensors and Mobile Connectivity

Patient can view data generated from a digital pill via a secure app on their smartphone and receive notifications and reminders

- Patients with chronic illnesses will benefit the most
- Some ingestible digital pills are approved by the US Food and Drug Administration
- Doctors can monitor how a patient reacts to a drug, the dosage timing, physiologic response
- Reduce cost of developing new drugs by providing real-time data about the body's reaction to the drug



HOW INGESTIBLE SENSORS WORK A tiny silicon sensor the size of a Patient swallows the pill grain of salt is attached to regular pills with the sensor, which is activated by the gastric Ingestible sensor juices in the stomach Pills The sensor generates a signal determining identity of the medicine and time of ingestion of the pill A bandaid-like disposable Sensor patch, attached to the in detail patient's skin, records the data from the sensor along with heart rate, activity and other body metrics The device has a tinv Bata is sent to a coating of copper and magnesium, two bluetooth-enabled device minerals needed in like a phone or a computer. our daily diet where it becomes accessible by caregivers and clinicians The silicon used in the sensor passes through The system also allows users the body in a matter of to set up alarms to remind days, as any other them to take the medicines high-fibre food or to go off when they are inactive for a certain time Sources: Reuters. Proteus Digital Health Inc. REUTERS

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Source: Reuters

Mobile Payments to Facilitate Premium Payments

A single approach does not work for all markets

Enables unbanked customers to make payments via their mobile phones



- Launched in Kenya in 2007 by Safaricom
- Used by over two-thirds of the adult population and 25% of Kenya's GDP moves through this network
- Can be used to make payments to family, friends, bill payment, salary payment and premium payment
- Service offering has expanded from payments to loans and savings products
- Has expanded into 8 more markets in Africa, Asia and Eastern Europe
- Safaricom and Britam have partnered to provide health insurance to low income Kenyans

Mobile payment using credit cards via smartphones in the Philippines

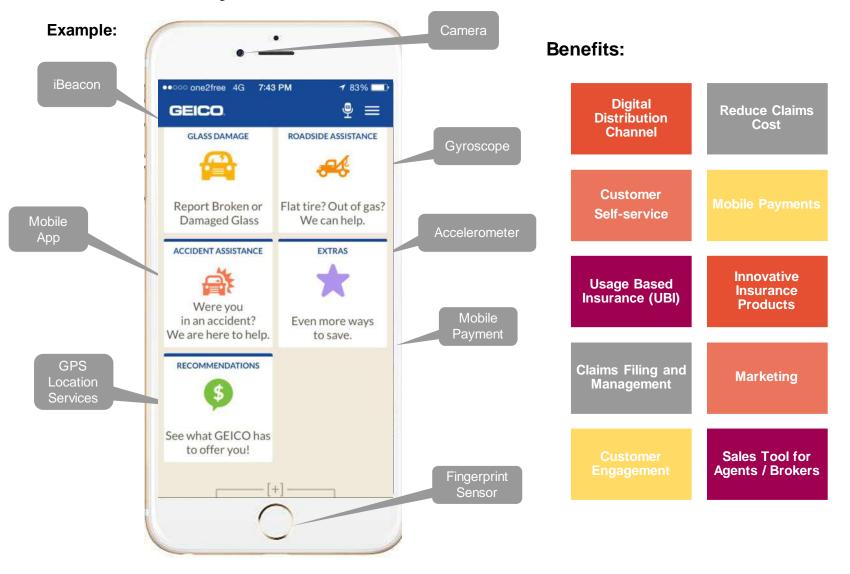


- AXA and Metrobank have launched MSwipe, the Philippines' first mobile payment solution
- MSwipe allows AXA's agents to use their registered smartphones and tablets to receive credit card payments for their customers' premiums
- Customer receive an e-receipt via e-mail



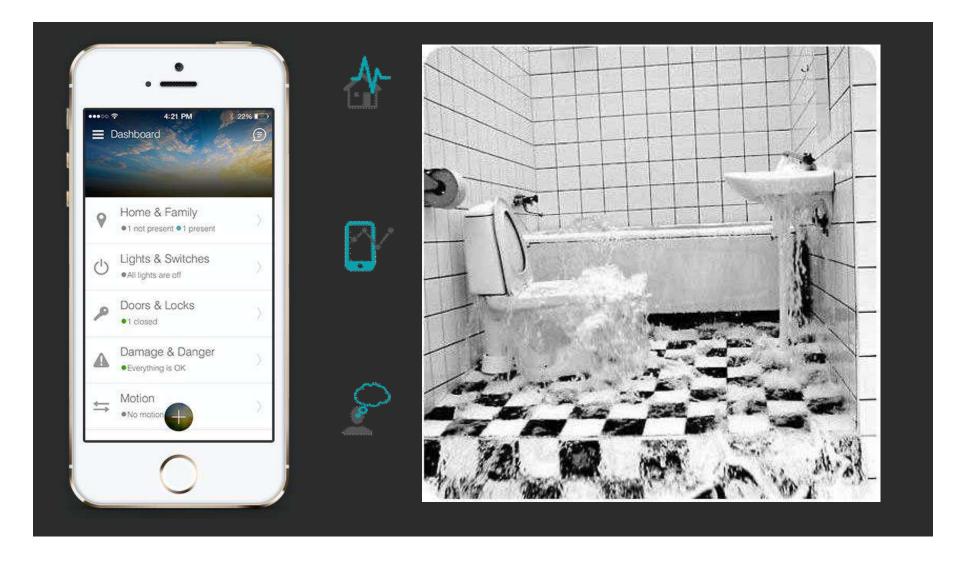
Smartphones

Provides many benefits for insurers and customers



Smart Home

Write more profitable homeowners policies based on live data and mitigate loss

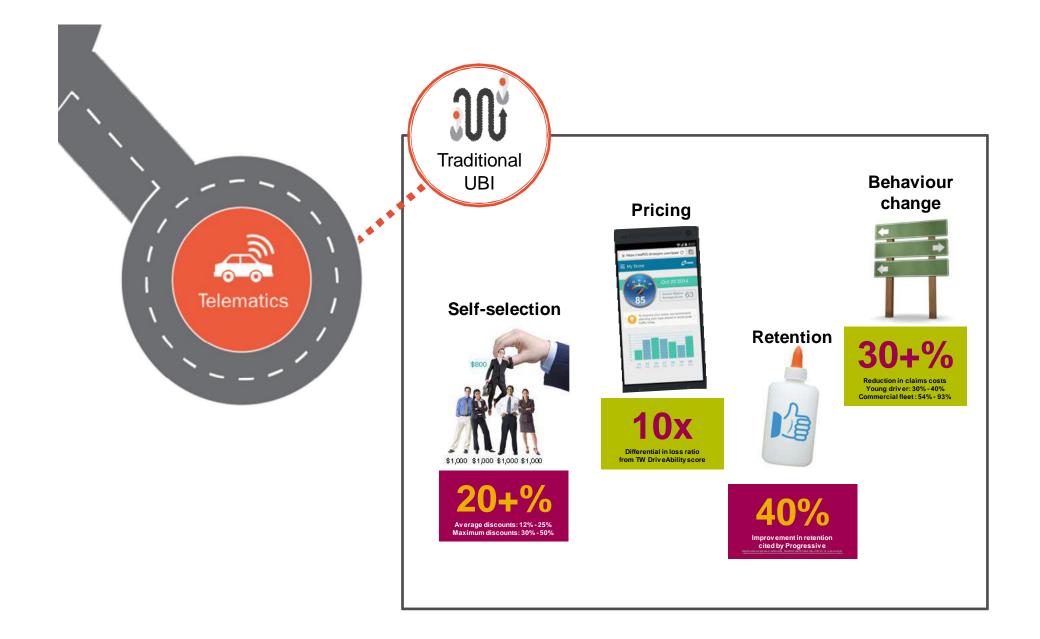


Claims Processing

Real-time video appraisal app designed to help customers settle claims more quickly and conveniently







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Enterprise Risk Management

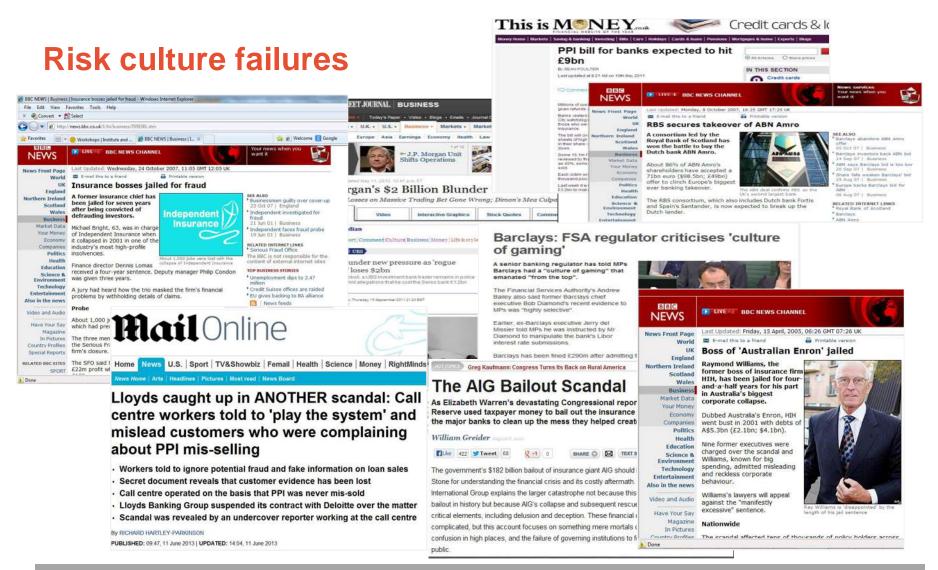


What is risk culture

"Risk culture can be defined as individual and group **behaviour** within an organization that **determines** the way in which the company **identifies understands, discusses** and **acts** on the risks the organization confronts and takes."

Source: "Reform in the Financial Services Industry: Strengthening Practices for a More Stable System." Institute of International Finance, 2009

Although there are some universal aspects of risk culture, it varies between organisations, in keeping with business strategy, markets, maturity etc.



"Most institutions have a set of values to which they ascribe however, in many cases there is clearly a gap between what they claim to believe and do, and what they actually do. These values also tend not to be aligned or lived by the employees **meaning the firm does not practice what it preaches**..." H. Sants, FSA CEO, 17th June 2010

The risks to which my company is exposed are assessed and reported on a regular basis (choose one)

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Don't Agree
- 5. Strongly Disagree



I can report on unacceptable risks being taken by senior personnel without adverse consequences for me personally (choose one)

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Don't Agree
- 5. Strongly Disagree



All things considered, my organisation as a whole is doing a good job in taking the right risks to exploit new business opportunities (choose one)

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Don't Agree
- 5. Strongly Disagree



Risk Culture Survey example questions: how does your organisation measure up?

Category	Coverage	Example question
Organisational Culture	The values and norms of behaviour within the organisation generally support effective management of risk	I can report on unacceptable risks being taken by senior personnel without adverse consequences for me personally
Risk, Appetite, Strategy & Policies	The company's attitude towards risk is clear and appropriate	All things considered, this organisation as a whole is doing a good job in taking the right risks to exploit new business opportunities
Leadership Commitment	Leadership throughout the organisation have a focus on risk appropriate decision-making communication and behaviour	Leaders in this organisation actively promote and discuss risk management issues on a day-to-day basis
Roles and Organisational Structure	Roles, responsibilities and rewards are determined in keeping with effective risk management	It is clear how risk management responsibilities are shared between departments
Process & Controls	Risk controls and process are appropriate, clear, timely and effective	Risk management policies and procedures are adhered to on a day-do-day basis in this organisation
Reporting & Management Information	There is effective reporting and documentation of risk activity	The risks to which my business unit is exposed are assessed and reported on a regular basis
Technology & Infrastructure	IT systems are designed in a way that supports effective risk management	Risk Management is built into our organisation's IT systems
Tools & Methodology	The approaches to manage risk are clearly understood and appropriate to the need	Regulatory requirements relating to risk management are clearly explained at all appropriate managerial levels

Are you planning to invest in people, process or tools to improve your analysis of insurance risk experience in the coming 12 months? (choose one)

- 1. Yes, minor investment
- 2. Yes, significant investment
- 3. No



Any Questions

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