Session Overview

- The bancassurer perspective – Dennis Smith, HSBC
  - UK Life & Protection Market
  - Innovation: product and process
  - Pre-Approved Limits for life cover
- The reinsurer perspective – William Trump, Swiss Re
  - Building a predictive model
  - Managing the risk
  - Extending to Health products
- Concluding remarks and Q&A

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UK Life & Protection Market

- Market dominated by 'intermediated' model with independent underwriters and distributors.
- Predominately price led competition.
- Some, second order, competition but based on product features rather than consumer benefits.
- Products & Propositions designed to attract distributors and intermediaries as opposed to customers.
- Innovation often seen as designing new product rather than improving buying and servicing experience.
- Bancassurance still in the minority and often based on a sourced underwriting facility from product provider.

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Term Life Assurance

We collect premiums from customers.

We pay claims to those eligible.

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In the Past - Underwriting

Once upon a time……..

- Paper applications completed by sales staff.
- Multiple sets of standard questions.
- Frequent use of Medical Attendant reports and Medical Examinations.
- Underwriters often needed to request additional information.

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In the Past - Underwriting

So what did this mean?

- Sales staff who might ‘lead’ customers when answering medical questions?
- Customers embarrassed to answer some questions F2F with sales person.
- Requests to customers for more information and detail on medical history.
- Long delays and wait for costly Medical Attendant reports.
- Poor customer experience with associated high attrition.

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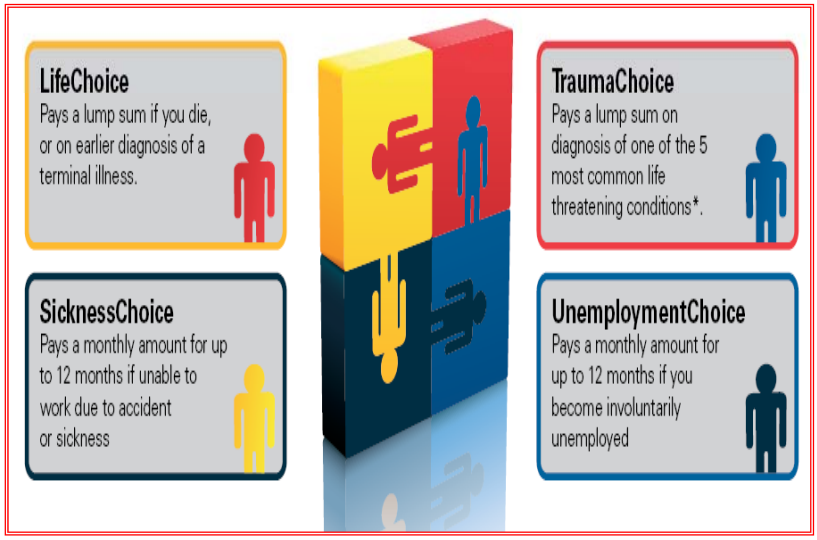
Did We Innovate with Product?



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Did We Innovate with Product?

- Menu Product
- Four separate covers – Life, Critical illness, Accident & Sickness and Unemployment cover.
- Standard Term Assurance.
- No joint-life.
- No ‘bells and whistles.’

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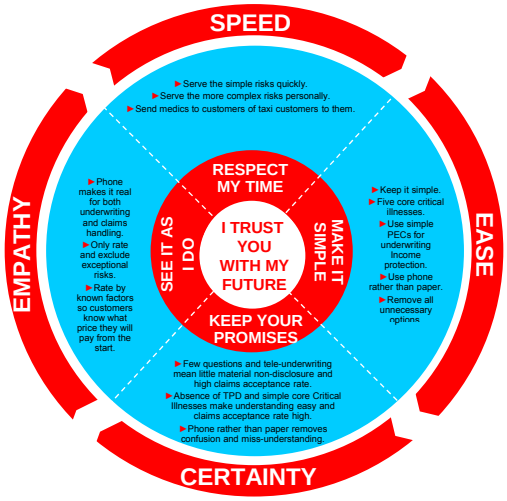
What Did Our Customers Tell Us?



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Did We Innovate with Process?

- Three medical questions.
- Tele-underwriting.
- Wide use of medical professionals.

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The new underwriting Process

Apply in person

- 3 questions
- Put through to underwriter
- Interview by phone, u/w transcribes
- Accepted, application printed
- Customer signs
- COVERED!

7 minutes

Apply by phone

- 3 questions
- Put through to underwriter
- Interview by phone, u/w transcribes
- Accepted, signature - free
- COVERED!

7 minutes

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Underwriting - The Before & After

Before – Life Insurance and Income Protection		After – LifeChoices
7 weeks	*Time to underwrite*	7 minutes
15,000 cases	*Pipeline*	4,500 cases
17%	*Cancellation rate*	9%
30%	*'Not taken up' rate*	16%
42	*Number of medical questions*	3
£3.5m p.a.	*Medical budget*	£1m p.a.
0%	*Customers accepted @ PoS*	86%
25%	*Non-disclosure rate*	4.8%

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Tele-Underwriting - The After

Customised…

- Modern customers are well informed on their conditions.
- Skilled underwriters are not constrained by decision tree approach.
- Relatively low cost.
- Better privacy and openness than F2F conversation.
- Customer remains engaged.
- Customer expectations managed.
- Low levels of non-disclosure.

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And for the Overall Proposition

Ultimate customer experience	✓	Reduced pipeline	✓
Simple customer process	✓	Improved application times	✓
Flexibility to meet needs	✓	Reduced non-disclosure	✓
Point of sale underwriting	✓	Improved risk	✓
Viable through all channels	✓	Sales growth	✓
Excellent customer feedback	✓	Easier claims process	✓

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Differentiating Between Customers

- Three medical questions.

- Tele-underwriting.

- Wide use of medical professionals.

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Differentiating Between Customers

- Cheaper but slower.

- Faster but costs more

- More comfortable but neither fast nor cheap

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Are There Other Alternatives?

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Can We Learn from Non-Life Insurance?

- Unintrusive acceptance/rating process.
- Wider use of rating factors (or risk measures.)
- Wide use of multi-variate analysis.
- Non-linear scales of risk.

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Can We Learn from Banking?

- Collect data on customers.
- Use data to assess normal credit risks.
  - Credit score/behavioural score.
  - Many customers have a Pre Approved Limit (PAL.)
- Send more complex risks to central unit.
  - Called a Central Underwriting Unit.
- Identify assess and offer terms to higher risk groups.
  - Non-standard terms.
- Reject applications for highest risk groups.

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Alternative Underwriting?

- No medical questions
- Three medical questions.
- Variable number of medical questions.
- Tele-underwriting.
- Wide use of medical professionals.

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No Medical Underwriting

- Does not mean Guaranteed Acceptance.
- Ways of predicting underwriting risk.
  - Identifying low risk groups.
  - Avoiding high risk groups.
  - Lifestyle underwriting and use of existing data.
- Importance of distribution and channel.
  - Avoiding anti-selection.
  - Openly available or 'invitation' offers.
- Differences between mortality & morbidity.

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Pre Approved Limits

- A PAL enables cover to be offered without the need for underwriting.
- Customers are pre-approved for Life Cover using information from our internal customer database to identify those **customers who are likely to be approved through the usual underwriting process**

- PALs enables:

1. An improved sales process: simpler and quicker
2. Easy Identification and targeting of 'good' customers
3. Effective use of bancassurance customer data

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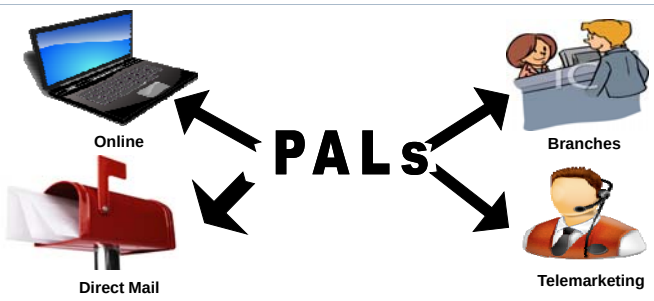
Pre Approved Limits



PALs is a sales enabler that:

- can be deployed across all channels and all brands
- can be used to improve targeted sales in any channel
- is strong in Direct channels as it offers a simple, quick & effective process.
- can help to reduce administration and processing costs
- offers a significant income opportunity for the bank

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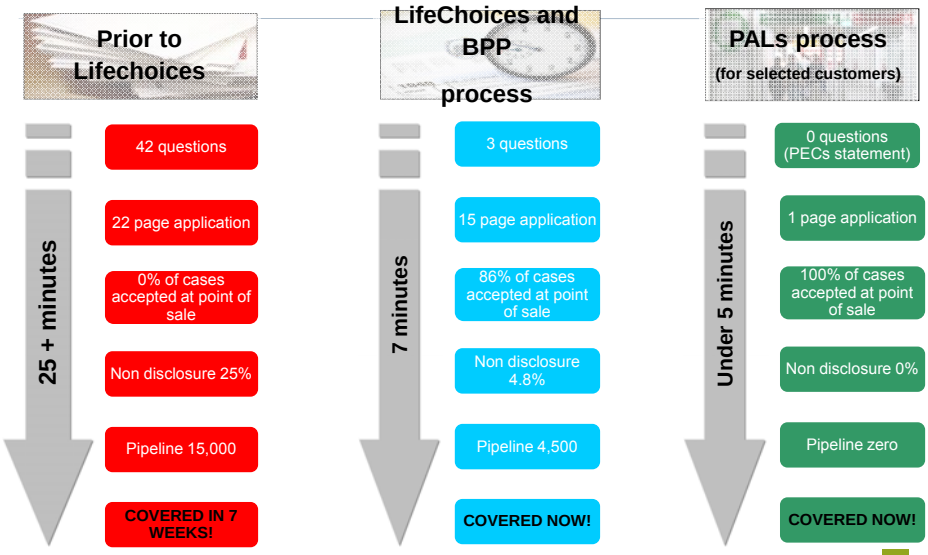
The New Underwriting Process



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Variable Number of Medical Questions

- Pre Approved Limits simply identifies better versus poorer risks.
- Typically grouped in decile groups.
- Alternatively, best risks asked no or very few questions, poorer (predicted) risks asked a greater number of questions.
- Customise your question set based on PALs analysis (or level of customer risk group.)

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Alternative Underwriting?

- No medical questions – PALS
- Three medical questions.
- Variable number of medical questions - Preferred Risk Customers.
- Tele-underwriting.
- Wide use of medical professionals.

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The Reinsurer's perspective: our thought-process

- Consumers are massively under-insured, and medical underwriting is a barrier to sales
- What if we could make insurance easy-to-buy for the healthy majority of the population?
- Intelligent data use is all around us
  - General insurance moving faster than Life & Health
  - Could we predict biometric risk based on everyday information?

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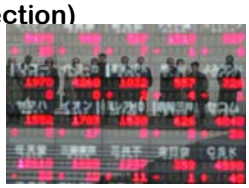
Essentially: we are turning the traditional underwriting philosophy on its head

- **Traditional underwriting is about identifying the unhealthy minority amongst the applicants**

"Are you ill?"

- **Predictive Underwriting enables us to approach the healthy majority of the population (who haven't applied for protection)**



"Are you well? (statistically)"

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Building a predictive model

- A model is built based on historic sales using the underwriter's decision and independent descriptive (e.g. banking) data
- Any information held on a customer **could** be correlated with their health status – let the data do the talking
- Combining all the predictive variables found to be correlated with health, an algorithm is built that ranks each customer from worst to best prospect, in terms of "likelihood of being given standard rates at application stage"

➔ Probability of being a bad risk = $1/(1+e^{-y})$

$y = a+bx_1+cx_2-dx_3+ex_4+fx_5+gx_6+hx_7-ix_8+jx_9-kx_{10}-lx_{11}+\ldots..+$

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HSBC – The Data We Used

Demographic

Age, Home Ownership, Residential Type, Property Value, Council Tax Band, Employment Status, Occupation, ACORN Geo-Demographic, HSBC Customer Segment.

Lending, mortgages, savings (internal and external)

Product holding

Behaviours

Monthly income and outgoings, ATM usage, lending balance, number of auto debit items, household assets.

Each data item is weighted within the model. Age is currently the most significant factor.

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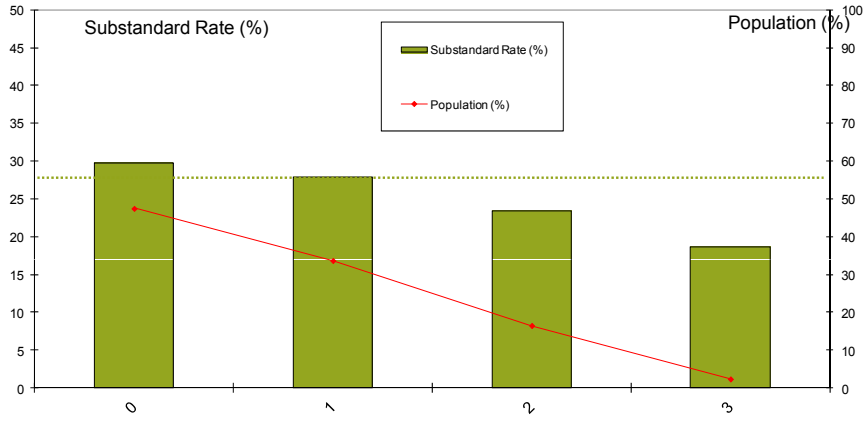
Predictive Variables – an example

Acxiom ILU Characteristics Analysis – Outdoor Pursuits Level



Source: Swiss Re Predictive Underwriting National Model

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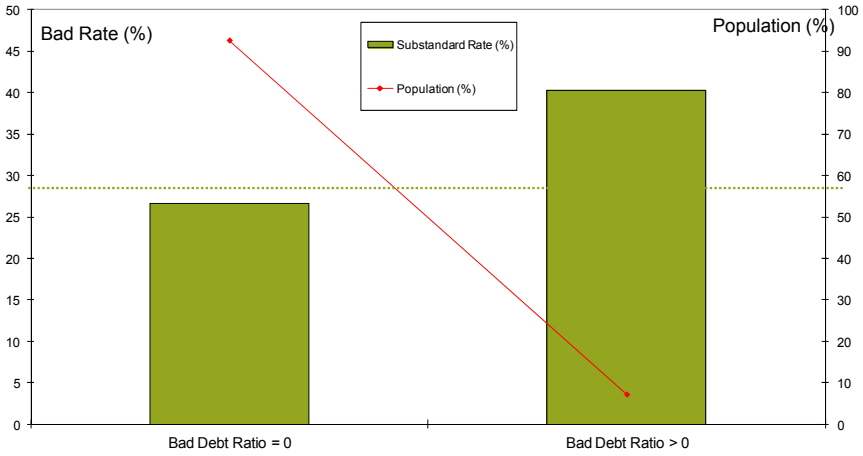
Predictive Variables – an example

Transactis Characteristics Analysis – Bad Debt Measure



Source: Swiss Re Predictive Underwriting National Model

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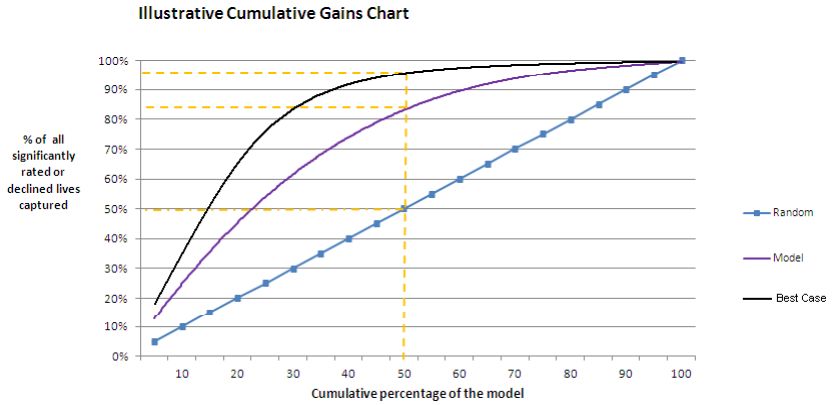
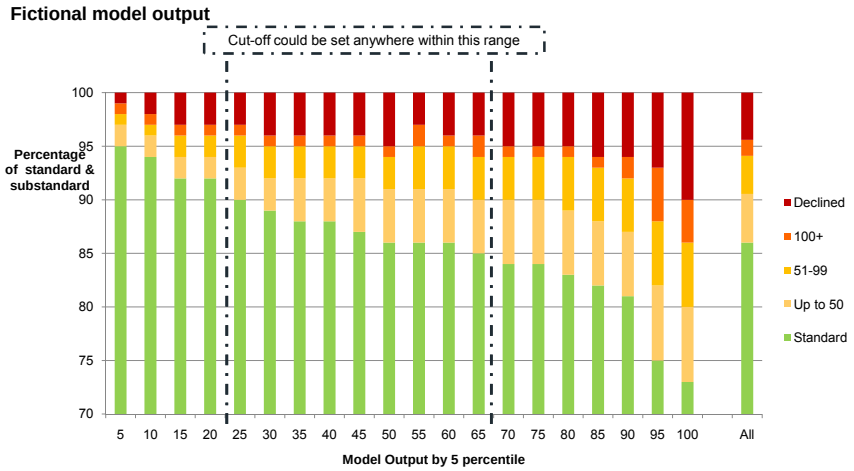
A model's effectiveness



e.g. 84% of all "significantly rated or declined" lives are found to be in half of the modelled population. 50% of these are found in a randomly chosen half of the population

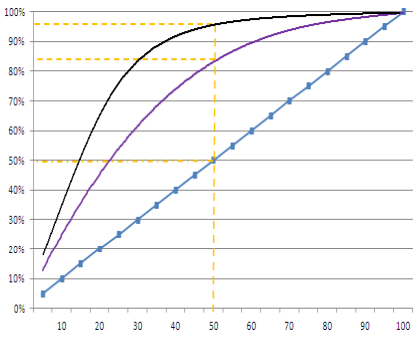
A model's actual performance



Managing the Risk

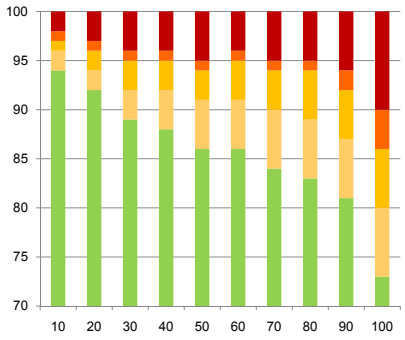
- With the reduction in underwriting comes extra risk
- There are three risk drivers:
  - Risk depends on efficacy of the model
  - Risk increases the more customers from the model are offered the product
  - Risk reduces the more underwriting questions are added
- Other key assumptions
  - take-up rate of the product by health status
  - extent to which an underwriting question puts off customers from completing the sale

Risk driver 1: Efficacy of the Model



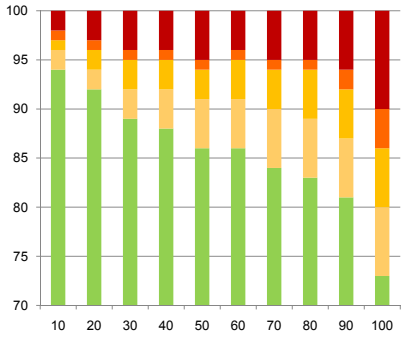
- Measure of model effectiveness is the Coefficient of Concordance
  - CoC of 50 is random
  - CoC of 100 is always right
  - Models tend to be in the 60-70 range
- Our best models are built on a variety of data:
  - financial
  - socio-demographic
  - health-related

Risk driver 2: Proportion of the model to be targeted



- For example, product offered to all those within the best 30% of the model output
- Does not always equate to the same proportion of the database
- Trade-off between volume to **be targeted and risk profile**

Risk driver 3: Underwriting Questions



- Risk reduces the more underwriting questions are added
- Question(s) driven by the false positives in the model (what were the reasons for decline?)
- Alternative screening methods can be used:
  - moratorium
  - pre-existing conditions exclusion

Risk and Claims

- Further risk mitigants:
  - max. age at entry
  - max. age at expiry
  - max. sum assured
- Other key factors
  - take-up rate of this offer by health status
  - methods to limit anti-selection (where offer is made after the sale of another long-term product (e.g. mortgage, loan)
  - extent to which an underwriting question puts off customers from completing the sale
    - for risk purposes, the ill
    - for sales purposes, the healthy

Extension to Health Products

- **What we have demonstrated: there are correlations between mortality and an individual's lifestyle (to be observed in their transactional non-medical data)**
- **What we expect to find: correlations of similar strength for morbidity products, where underwriting is similar to that for mortality (e.g. Critical Illness)**
- **However, Health is inherently more risky – due to**
  - **the relative subjectivity of claims criteria**
  - **the increased moral hazard**
- **With Health, added benefit of using claims data as part of the model build**
- **Income Protection (Disability Income) – needs additional safeguards**

Concluding Remarks

- **Predictive Underwriting makes insurance easy-to-buy**
- This is a new way to contact customers to make them an offer and does not need to be in conflict with the advice sale model, can work as a complement to it
- **It enables data-rich organisations (like banks) to leverage what they know about their customers for the purpose of protection sales**
- **The risk needs to be appropriately managed**
- **A proven success for Life cover, morbidity products to be explored**

Thank You

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Questions or comments?

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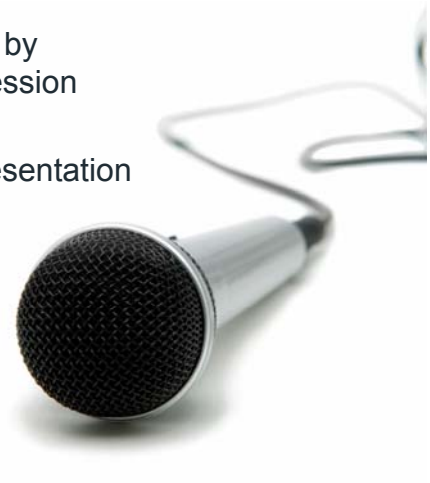

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