

## Implementing Risk Models

Casualty Actuarial Society  
Ratemaking and Product Management Seminar  
March, 2009

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## Panelists

- Michael Cronin, CPCU
  - Product Management Consultant
  - Cronin Consulting Services, Inc
- Chris Cooksey, FCAS
  - Specialty Auto Pricing and Research
  - Nationwide Insurance
- Joe Walkush
  - AVP Auto Product Management
  - Victoria/THI Holdings
- Jose Trasancos, Ph.D.
  - VP Research and Development
  - The Hanover

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The most successful people are those who are good at plan B.

- James Yorke, Ph.D.;  
Distinguished Professor, University of Maryland

It's not the strongest of the species that survive, or the most intelligent, but the ones most responsive to change.

- Charles Darwin

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- **The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.**
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# Implementing Risk Models - An Innovation Process View

Michael Cronin, CPCU

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## Innovation



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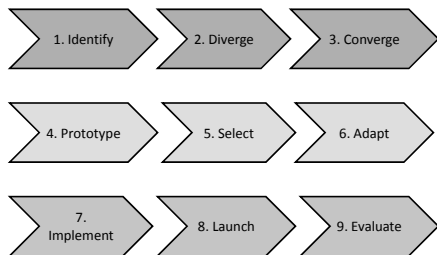
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## Innovation Process One Example



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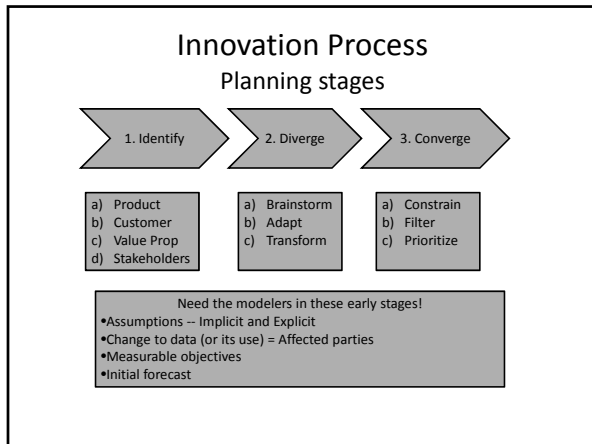
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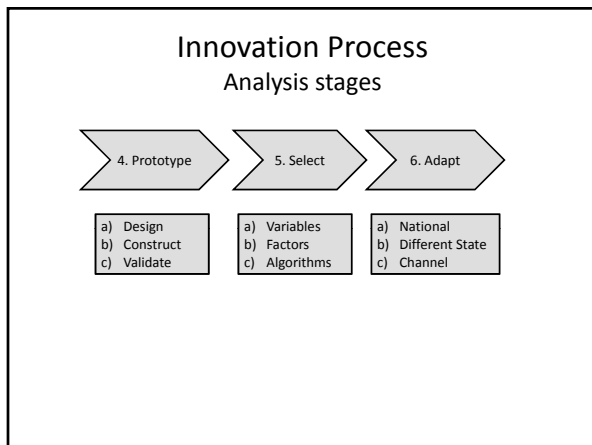
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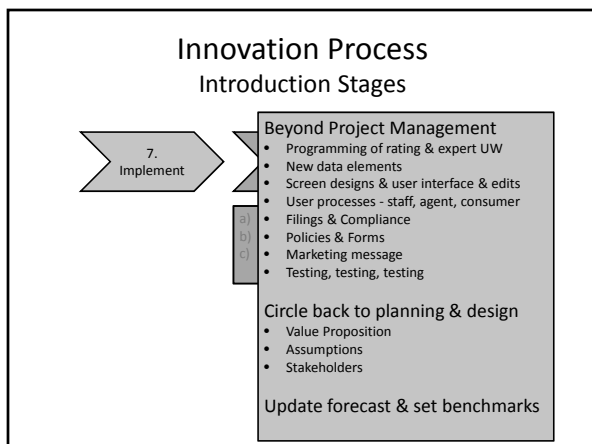
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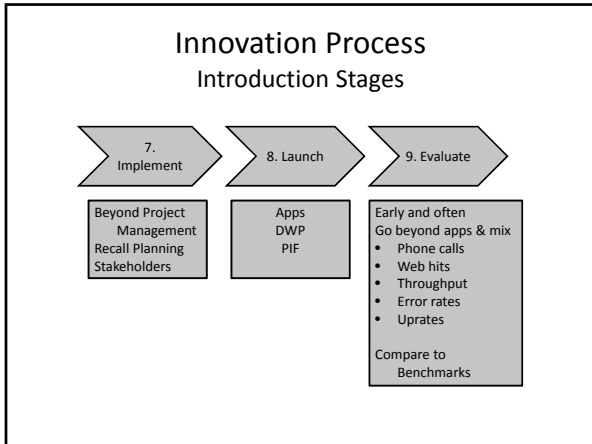
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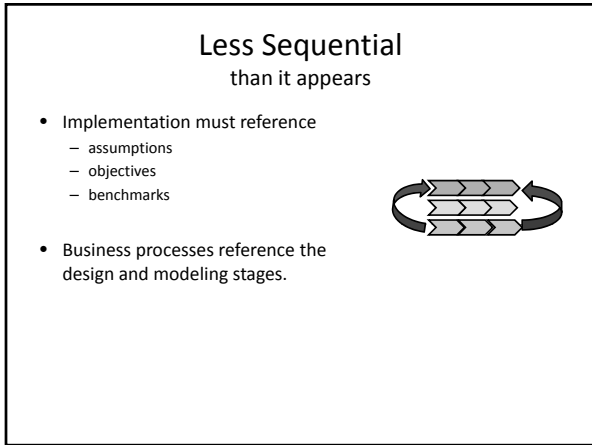
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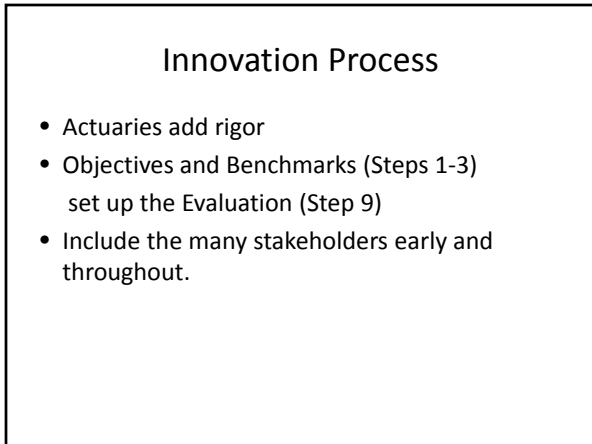
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Implementing Risk Models  
Insurance Company Modeler Perspective  
Chris Cooksey, FCAS. Nationwide Insurance

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A risk model is a system which prices risk for a given product.

- Could be simple & no-frills
- Could include billions of price points

Either way, you have a product that you helped to build and it needs to get onto the street...

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Implementing Risk Models  
Insurance Company Modeler Perspective

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The Big Questions: What do you do for the implementation such that at the end of the day...

- a working product is on the street?
  - your company has a smooth experience getting there?
  - the perception of your business partners is that you did your job well?
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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 1 – Figure out who owns the project.

- Who has decision-making power and responsibility?
- What is their general desired timeline?
- What are their expectations of the product implementation and your role?

*Make sure you answer the questions that your business partners want answered!*

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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 2 – At the beginning, look out for show-stoppers.

- Is your legal department comfortable with the proposed direction?
  - Does this product stand a chance with regulators?
  - Can your systems program it? You may want to scout out general requirements.
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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 3 – Make sure you will have the data you need to get buy-in.

- How do we know this product is better than what we have currently?
  - What are the swings & who is swinging?
  - Can we lessen swings & still accomplish the goal of the product?
  - Once on the street, what will happen to mix of business? How might this create or eliminate marketing opportunities?
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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 4 – Once you have a product, look for unintended consequences.

- A reversal which causes multi-car policies to be more expensive per car than single-car policies.
- Some age interaction which causes rates to go up as youthful get older.

*These things may be mathematically correct, but they fly in the face of customer and agent expectations. What to do?*

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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 5 – Once decision-makers have given the green light, it's time to "implement."  
Choose a strategy...

- Blitz approach: roll out in as many states as possible as fast as possible.
  - Partial pilot: pick a state, work through IT issues, & get it on the street. Allows for agent/customer feedback and initial production numbers. After a month or two, continue the roll-out.
  - Full pilot: same as above, but wait for losses.
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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 6 – Time to pick a state. A good state...

- has a relatively conducive filing/regulatory environment.
  - is not so exceptional that you can't generalize results to other states.
  - exemplifies the problem being addressed (if applicable).
  - contains the market being targeted (if applicable).
  - can accommodate the desired timeline.
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Implementing Risk Models  
Insurance Company Modeler Perspective

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Step 7 – Focus on the implementation.

- Know who your contacts are (Product, Pricing, Systems, Filings, Legal, Executive, etc.).
  - Get timeline buy-in from partners.
  - Specify exact systems requirements.
  - Make sure Legal OK's the specifics.
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Step 7 – Focus on the implementation.

- Make sure that Pricing has the necessary information for...
    - Implementation – calculating rate impact of changes or setting overall rate level.
    - On-going pricing – will the risk model require new data or methodologies to set the rates?
  - Prepare the necessary filing support.
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Step 8 – Being the subject matter expert on the risk model means that when you are done, you're not done.

- Support for state specific adaptations
  - DOI questions
  - On-going monitoring – does the product do what you expected and claimed it would do?
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# Implementing Risk Models

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Practical Considerations for Product Managers

Joe Walkush  
Nationwide Insurance

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## The model is built... Check the model

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- Will it be effective?
  - Lift Analysis
    - Take out sample methodology
  - Dislocation Analysis
    - How will my existing book of business be affected?
- Rate Reversals?
  - Producers can find more class plan holes faster than you can
  - Adjust for incongruities

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## Make Refinements

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- Were the results of the risk model dictated with prescribed relativities or with confidence level ranges allowing for some variation?
- What are the effects of expense loads?
  - High expense loads limit the robustness of the risk model and may necessitate reconsideration of selected relativities

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## Information Technology

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- Do I require new fields?
- Can IT program it?
- Downstream systems?
- Implementation Timeline
  - How long will it take?
- How long will it take to roll it out to other states?

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## Renewal Strategies

- If implementing within the same legal entity...
  - How can you minimize disruptions to your book of business?
- If implementing in a separate legal entity....
  - Non-renew into the new class plan?
  - New business only
- Rate Capping???

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## Run off

- Internal costs to maintain aging book of business
  - IT
  - Legal and regulatory
  - Product/Pricing resources
  - All of the above at some point must be dedicated to the ongoing management of the run off book of business

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## Run off

- Claims
  - Are there any potential claims handling differences as a result of the implementation of the new class plan?
  - Claims handling differences (if any) must be contemplated
- Profitability
  - Maintaining a separate run off book of business insulates against the potential bad results of a poor implementation

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## Marketing

- How do you verify that what you are designing/introducing will be of interest to your customers?
  - Conjoin analysis
  - Customer Focus groups
  - Competitive analysis

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## Distribution strategy

- Pilot rollout with selected agents/states
  - Test & Learn
  - Mitigates problems
  - Costs more to implement
  - Probably best for larger companies
- Full blown rollout to all
  - May be only choice for smaller companies
  - Requires intense monitoring for first few months
  - May need to turn around modifications quickly if problems are uncovered

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## Reporting and Monitoring

- Before implementation, set out in writing what you anticipate will happen
  - Mix shifts
  - AWP
- How do you spell S-U-C-C-E-S-S?
  - Mix
  - AWP
  - Retention
  - Close Ratios

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## Other Concerns

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- Regulatory Approval
  - Am I introducing something that will give regulators headaches?
- Rate or Underwrite
- Communication
  - Producers
  - Senior Management
    - Have you briefed Sr. Management that results may be poor[er] until NB/Renewal books reach equilibrium?

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## Thank You!

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- Questions?

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## Risk Model Implementation

An Operations Process View  
Jose Trasancos

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## Why do we evolve risk models?

- To gain an advantage over the competition.
- So, what is competition in it's most essential form?

This old Army mule says . . .

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Combat.

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## Five Phases in the Order of Battle . . .

1. Define objectives (strategic) and targets (tactical)
2. Allocate appropriate resources to ensure successful engagement
3. Evaluate and decide on a doctrinal approach for engagement
4. Execute
5. Objectively assess outcomes of the engagement

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### Phases 1,2,3 – Preparation

- Alignment with organizational strategy is critical
  - Objectives must directly support and further strategic direction
- Targets are the tactical objects through which strategic advancement is accomplished
  - Concentrate on high-value targets

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### Phases 1,2,3 – Preparation

In an insurance context . . .

- Ensure the risk model supports the business strategy.
- Objective: Move to market quickly and with a high probability of success, intelligently leveraging the capabilities of the risk model.

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### Phases 1,2,3 – Preparation

- Select a 'Point of Attack'
  - What's next? Develop plan of progression.
- What are your (new) capabilities? How will they affect, if at all, what exists today?
- War games (market simulations) are useful and, at times, illuminating
- Reconnaissance and intelligence – know your adversary
  - Position yourself wisely

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### Phases 1,2,3 – Preparation

- Pick fights you can win . . .
- What follows illustrates fundamentally different threats posed by objects that are fundamentally similar . . .

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### Phases 1,2,3 – Preparation

- With what would you rather tangle?



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Or, Said Differently,

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## Or, Said Differently,



Would you rather mess  
with this fellow . . .

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## Or, Said Differently,



. . . or this fellow?

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## Phases 1,2,3 – Preparation

- Position and test your diagnostics, the key to high levels of Situational Awareness.
  - What measures will provide early indication of success?
  - Ensure appropriate data capture and access
    - Engagement with IT is critical
  - Devise your metrics, if required
  - Design and test diagnostic reporting

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## Phases 1,2,3 – Preparation

- UAT
  - Get involved
  - Invaluable information with regard to capabilities and operational effects
- Develop remedial contingencies
  - ‘No plan survives first contact with the enemy.’

Helmut Karl Bernhard Graf von Moltke, Generalfeldmarschall of the Prussian Army, 1800 - 1891

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## Phase 4 - Execute



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## Initial Merge – Commit and Engage

- Collect information, analyze and assimilate relative to expectations
  - Conversion rates
  - Segment volumes
  - Endorsement patterns
  - Call volumes
  - Operational issues
  - Errata

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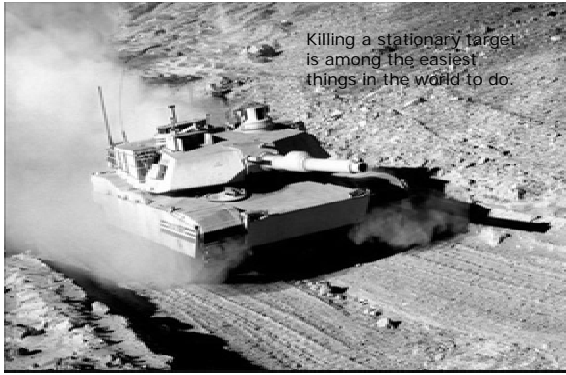
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## Maneuver



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## Maneuver

- Adjust based on what has been learned
  - Urgency v. comprehensive action
    - Move decisively!
  - Consider internal capacities
  - Regulatory considerations

Always remember (this is important!):

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Pay attention to what can kill you

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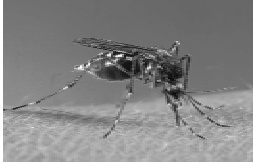
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### Pay attention to what can kill you



Sure, this one's annoying but . . .

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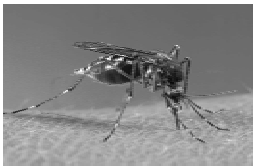
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### Pay attention to what can kill you



Sure, this one's annoying but . . .

This one will ruin your day.



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### Phase 4 in Summary

The bane of good execution . . .

1. Standing Still
2. Indecision
3. Getting lost in minutiae
4. Losing the initiative

Do any of these and . . .

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**Phase 5 – After Action Review**

- A professional discussion of an event that enables one to discover for themselves:
  - What happened
  - Why it happened
  - How to sustain strengths and improve weaknesses
- Highly recommended reading – U.S. Army Training Circular 25-20

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**AARs**

- AARs should be conducted soon after deployment is stable
- Involve all functions
- No blaming, griping or whining
- Should be full of open-ended questions
- Goal – comprehensive analysis of and consensus on 'how went the battle'.
- Adjust Phases 1 through 4 accordingly

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