



INSURANCE ReVOLUTION



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How Predictive Modelling is Transforming Insurance

Moderator: David Moss SVP, Swiss Re

Speakers: Richard Boire SVP, Environics Analytics

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Patrick Sullivan SVP, Munich Re

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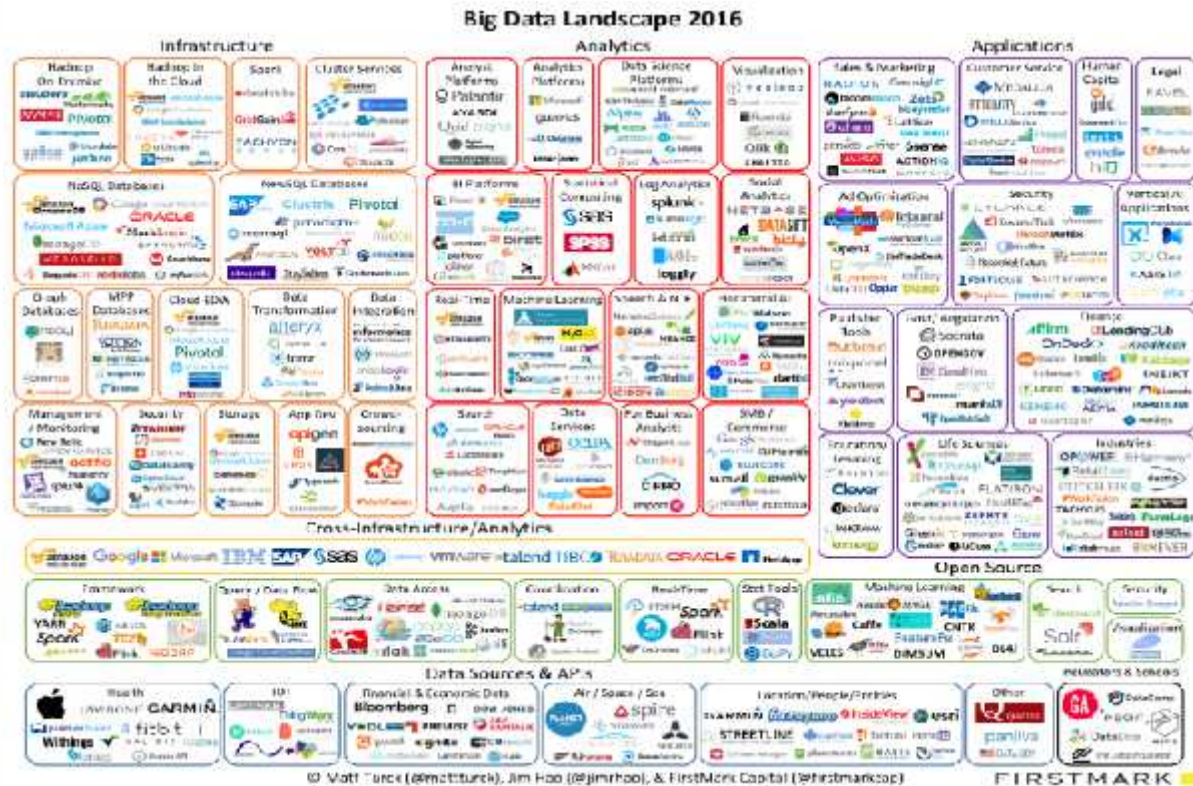
Richard Boire

Big Data Analytics : A Confused Marketplace



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Why the confusion?



What is important ?

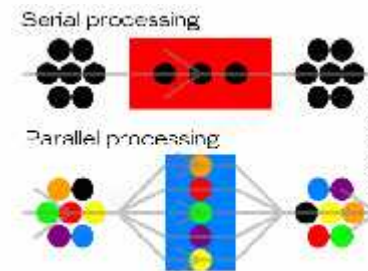
- At the end of the day, it's about analytics and the discipline needed to achieve the right insights/learning
- But insight without action is analysis for paralysis
- Data is the foundation of everything whether we consider it big or small
- No question we need to embrace the rapid technological changes around us but “don't throw out the baby with the bath oil



Things to consider in the New Paradigm

Data Processing

- Parallel vs. Sequential Processing



- Real-Time vs. Batch Processing



Things to consider in the New Paradigm

Reporting

- An ever growing sandbox of tools



- Emphasis on the following areas:

- Ease of use
- Data Manipulation
- Empowerment of analytics to broader groups of people
- Data Visualization



The Data Challenges

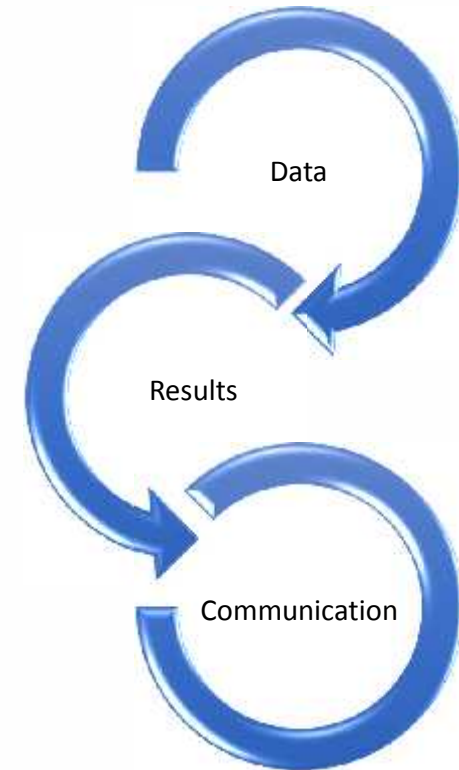
- Traditional Data-structured data
- Web and Social Media-semi-structured
- Posts,Blogs,Tweets,Texts,Emails,-unstructured
- WIFI Data
- Sensor Data
- Location Data



What Does it all Mean

No matter whether it is advanced vs. non-advanced, we ultimately need analytics to “Tell a Story”

More importantly, it is the good stories that get actioned on



THANK YOU

PICTURE CREDITS

- <http://www.simranjindal.com/data-to-insight-to-action-technology-cannot-replace-an-understanding-about-your-products-processes-and-customers/>
- <http://www.canadianbusiness.com/leadership/liz-rodbell-hudsons-bay/>
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- <http://bigdata-madesimple.com/15-social-media-analytics-tools-for-marketers/>
- <https://www.tanaza.com/grow-wi-fi-sales/>
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- <https://www.linkedin.com/pulse/mobile-data-offloading-over-wi-fi-access-networks-yogender-singh-rana>



Jayne Olsen

Best Practice Approach to Predictive Analytics



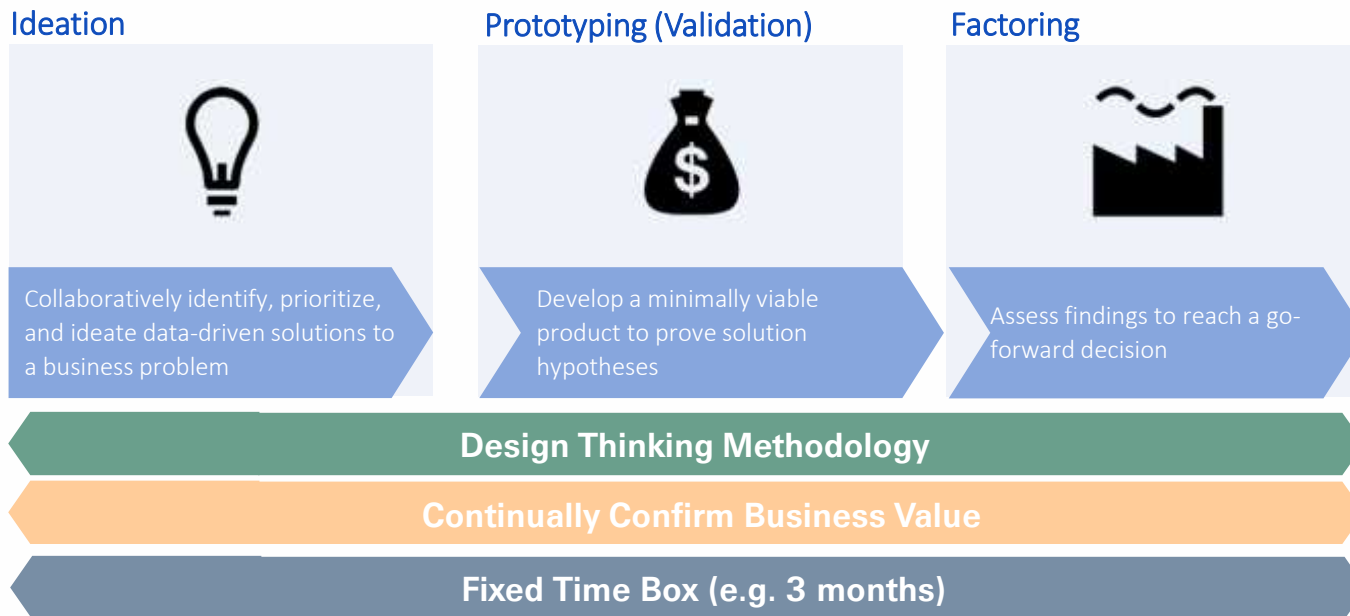
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Culture Around Predictive Analytics Projects

Successful analytics projects are highly dependent on open-mindedness to new, innovative solutions

- 1 Should have an appreciation for the power of data
- 2 Open to trying new tools and technologies
- 3 Flexibility to experiment with innovative approaches
- 4 Comfortable with agile prototyping within 3-month time box

Best Practice Approach to Predictive Analytics Solutions





Approach: Leverage a Formal Methodology

Design thinking methodology can ensure we are truly solving business problems for the end user or consumer.



Goals of Design Thinking



Rapid Prototyping

Time-boxed approach to developing a minimally viable product to prove hypotheses



Cross-Functional Collaboration

Upfront involvement of key stakeholders and business teams through formalized design thinking sessions



User Experience Focused

Approach focused on iteratively re-defining and solving a business problem for the end user

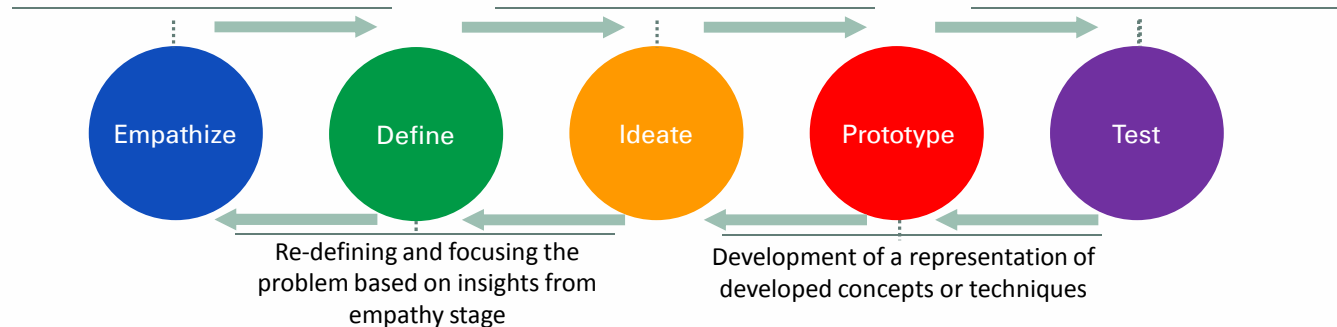


Methodology Overview

Learning and understanding the users, their as-is experience, and pain points

Brainstorming innovative solutions and improvement opportunities

Evaluation of prototypes with users and identification of further iterations

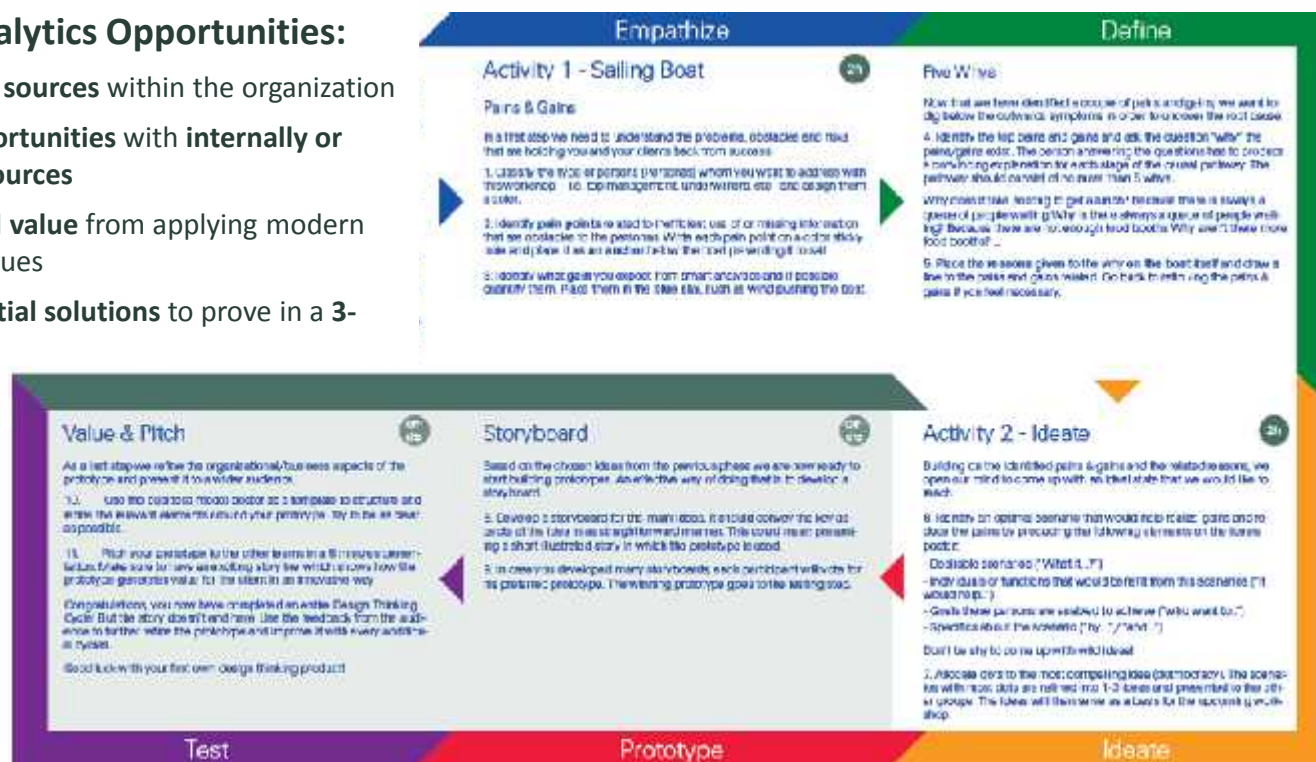


Ideation: Design Thinking Workshops

Workshops should focus on defining the problem and ideating viable solutions.

Workshop To Define Analytics Opportunities:

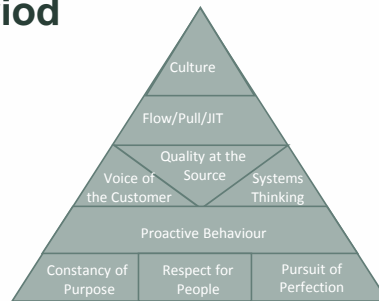
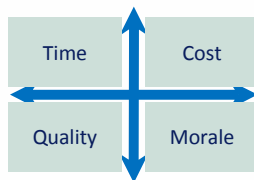
- Define 'as-is' usage of data sources within the organization
- Identify improvement opportunities with internally or externally available data sources
- Define gains and estimated value from applying modern predictive analytics techniques
- Define and prioritize potential solutions to prove in a 3-month scope of work



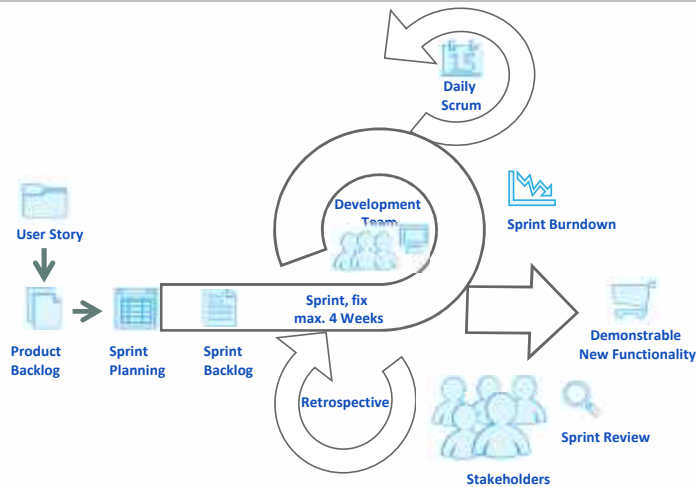
Prototyping: Time-Boxed Validation

Leverage agile methodologies such as Lean IT and Scrum to develop the minimally viable product within a fixed time period

Lean IT Principles



Scrum Methodology



Factoring: Formalized Decision

Assess findings with key stakeholders and formalize a decision at the end of the 3 months to continue, discontinue, or pivot.



Example: Flood Insurance Prospecting

Ideation



- Cross Functional Teams
- Problem statement
- Key customers

- Opportunities for solutions
- Identify Key Data Sources
- Scope/prioritization

Prototyping



- Data Analytics
- Behavioural Economics
- Deliverable: Prototype

Factoring



- Product ionization Strategy
- Maintenance Strategy
- Approach to monitor metrics

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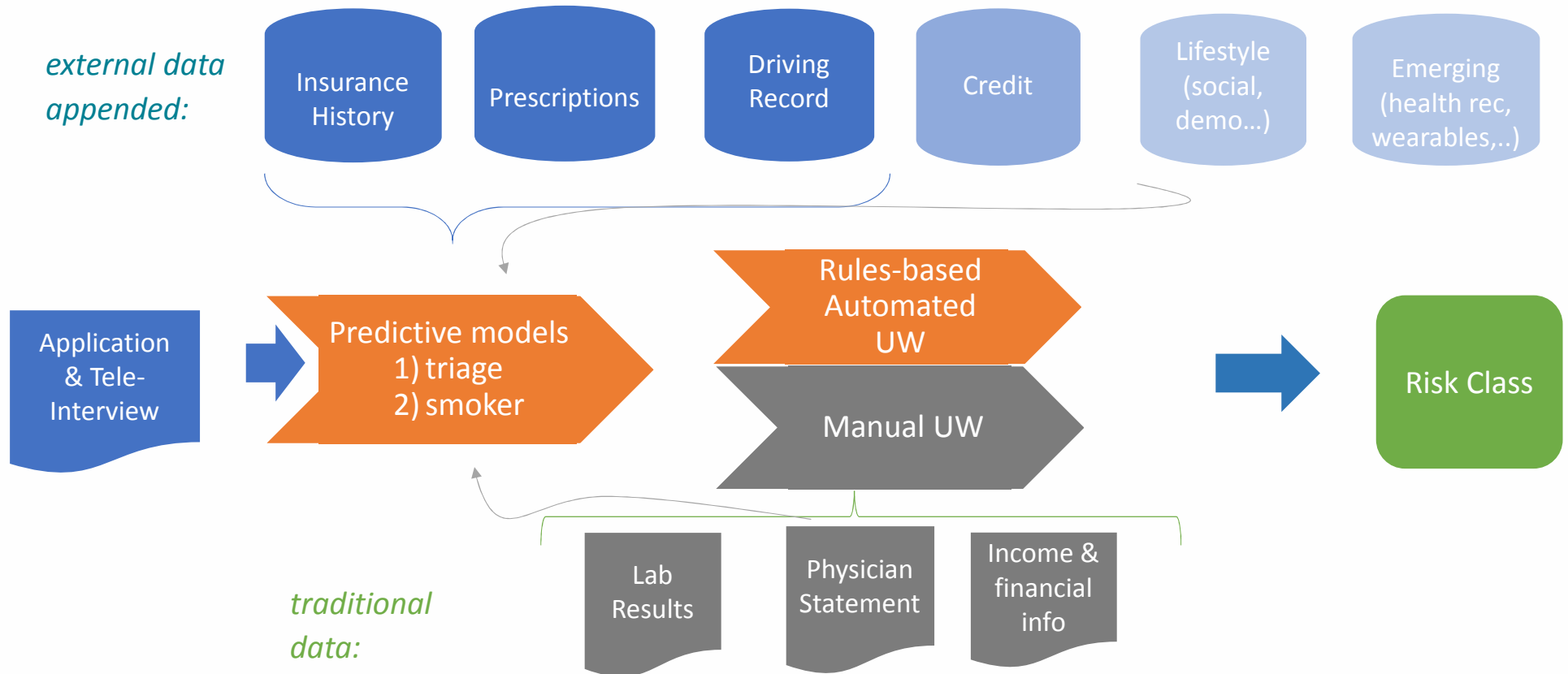
Patrick Sullivan

How Predictive Modelling is Transforming Insurance: Applications

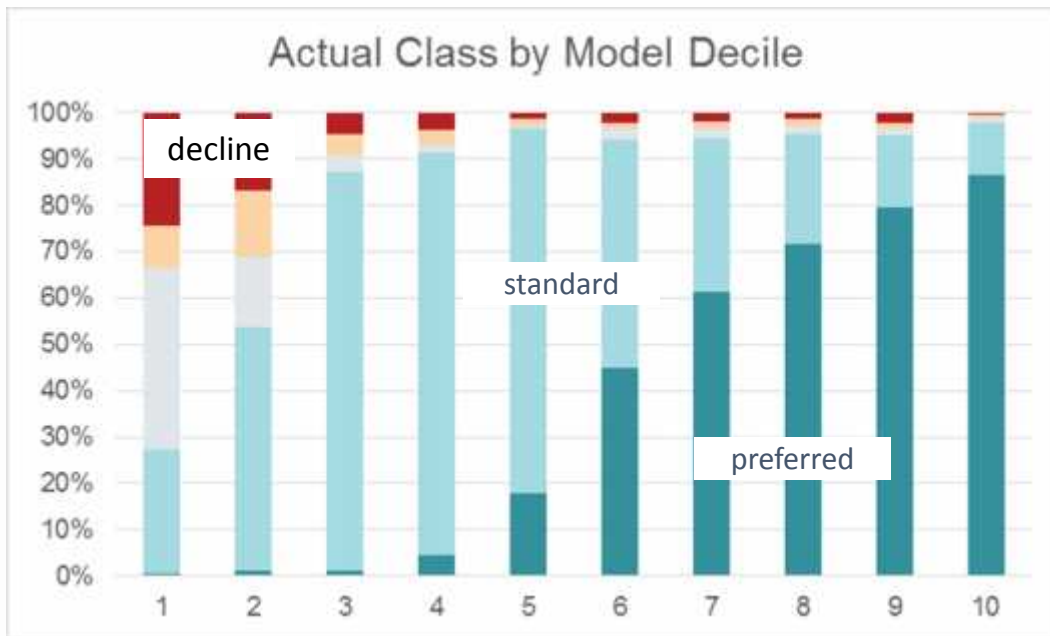


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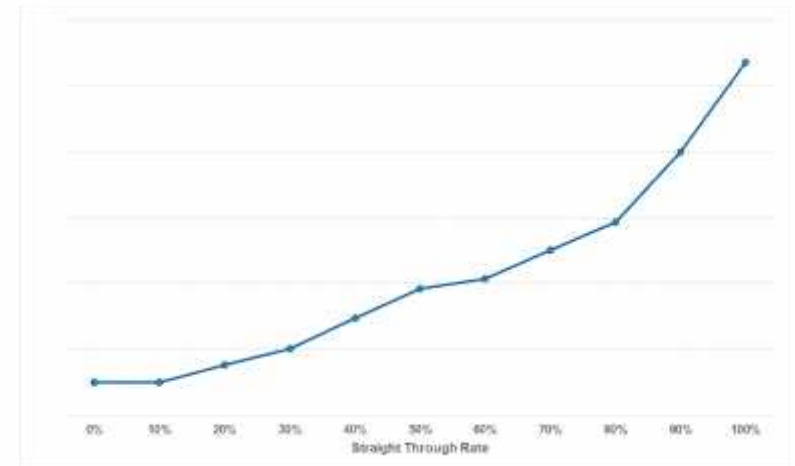
Overview - accelerated underwriting



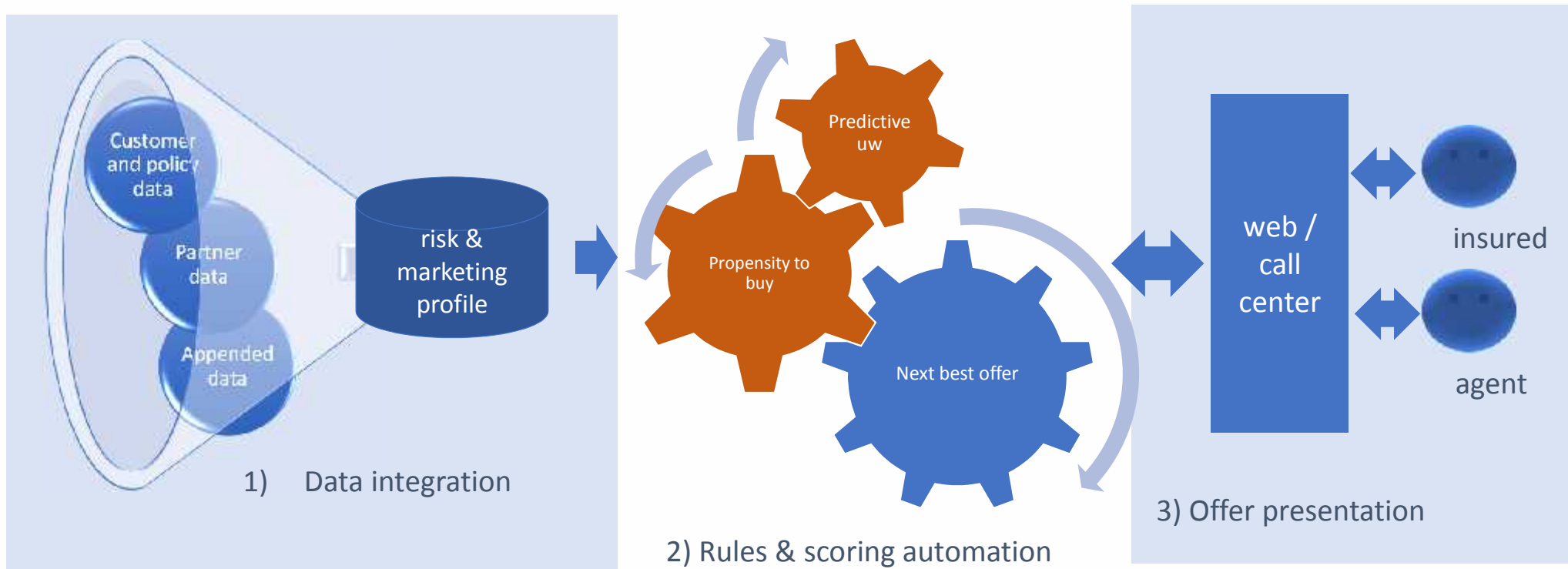
1) Predictive underwriting for risk selection



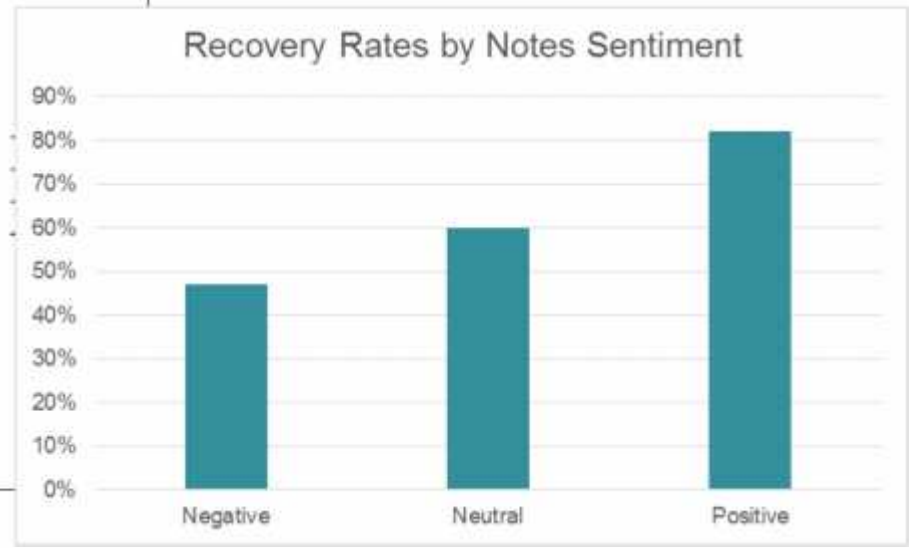
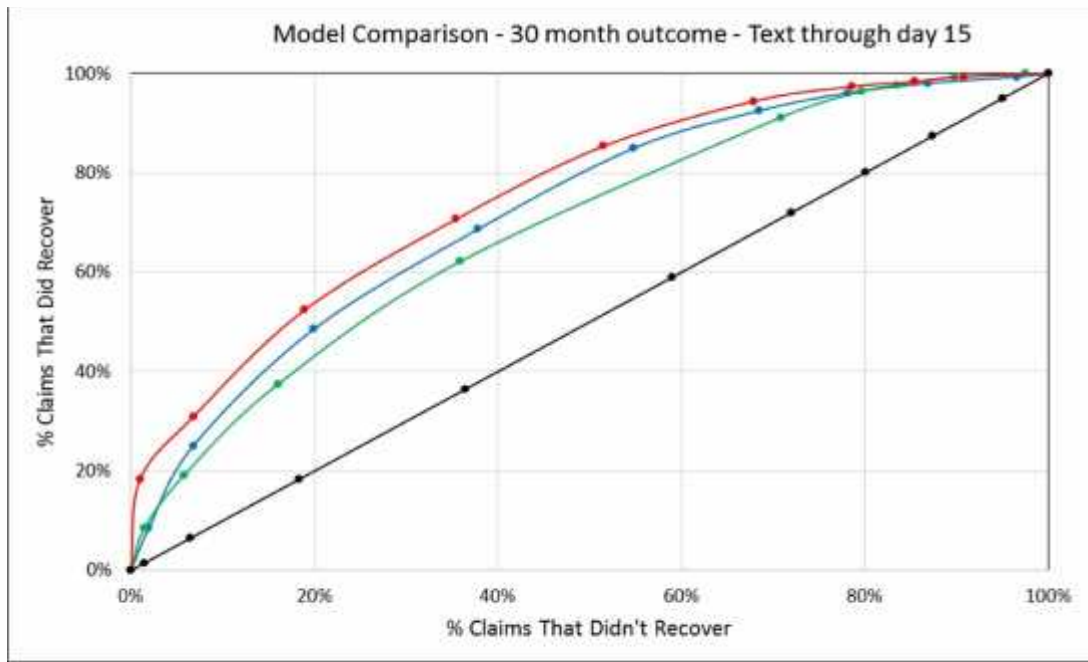
Tradeoff: Mortality cost vs automation rate



2) Model-driven cross-sell



3) Claims management with triage models



4) Pricing/Lapse Models from Experience Data

Why use a predictive model?

- Interpretable standardised effects
- Optimized predictive power
- Easy to maintain

Base	0.00100
Gender	
M	1
F	0.50
Smoker Status	
NS	1
S	2.00
Duration	
0	0.70
1	0.81
2	0.94
3+	1

$$\text{Mortality Incidence} = \exp(\beta_0 + \beta_1 X_1 + \dots + \beta_p X_p) = \exp(\beta_0) * \exp(\beta_1) * \dots * \exp(\beta_p)$$

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Questions



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