

#### 18<sup>TH</sup> EAST ASIAN ACTUARIAL CONFERENCE

12-15 October 2014

Taipei International Convention Center in Taipei Taiwan

## Use the Force

The future of insurance in the Digital Age

**Gavin Maistry, Mike Kwan** 



### What if the price of failure = the loss of your 2014 livelihood?





# Farrier, flycoachman, gelder, hay collector, hind, horse-capper, hostler, jagger...







## Every year...1.24m people die, \$600bn car \$12014 insurance spent







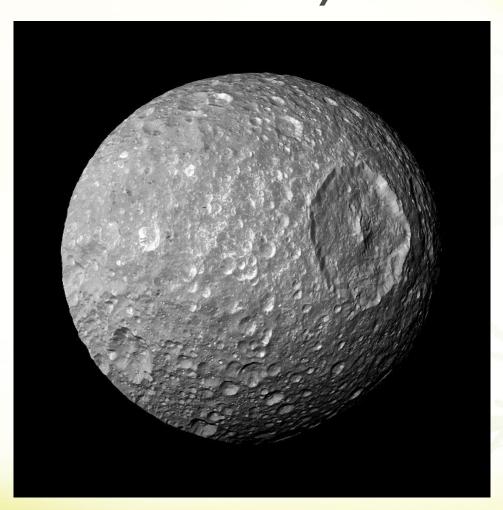


# Wheel, Ownership, Driving licence Accidents, Insurance





# "A great disturbance in the Force, as if millions of voices suddenly cried out in terror and were suddenly silenced."



0.8 zettabyte data on earth in 2009

What is a zettabyte?

1,000,000,000 gigabytes
1,000,000,000 terabytes
1,000,000 petabytes
1,000 exabytes
1 zettabyte



# Pay As You Live™







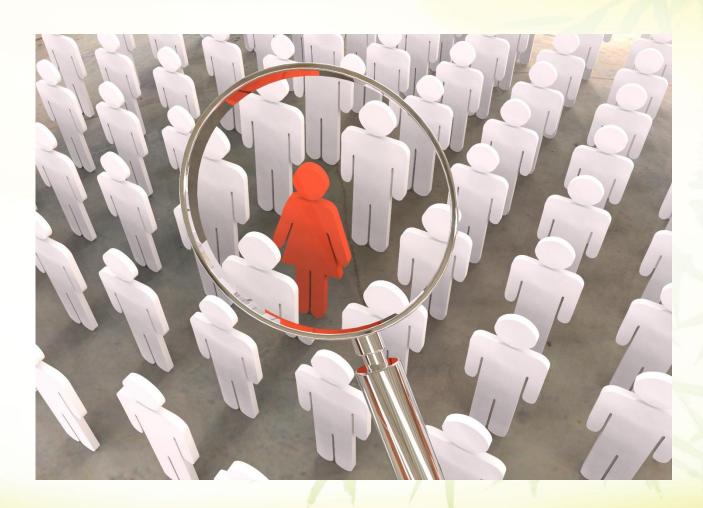
### "Impossible to see, the future is"





# Propensity to purchase trumps underwriting prediction







# Select the right patient for the right health programme before the trend sets in







# Automated detection of claims that need immediate attention







## Optimised claims & Application processes



Fig. 1: Automated and manual underwriting in comparison

Underwriting stage	Days	Industry norm	Target with 4th generation URE*
1. Base questions	1	14%	60%
2. Further questions	-	-	
3. Manual underwriting	31	52%	30%
4. Tele-underwriting	-	-	
5. Medical evidence	82	34%	10%
Average duration (norm)	52	100%	
Average duration (target)	18		100%
			* Hadaminikian Dulas Engins

The table illustrates how reducing the referral rate significantly accelerates average policy issuance time.

\* Underwriting Rules Engine

Fig. 2: New business leakage

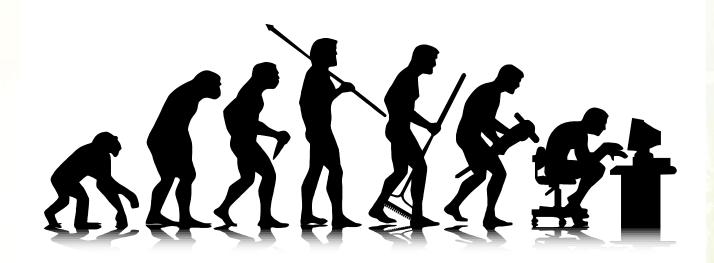
Underwriting decision (in weeks)	Not-taken-up rate (in %)
1	9
2	12
3	12
4	16
5	24
6	23
7	25
8	27
9	31
10	36



Source: Munich Re

## To the future and beyond: The 5<sup>th</sup> generation Actuary

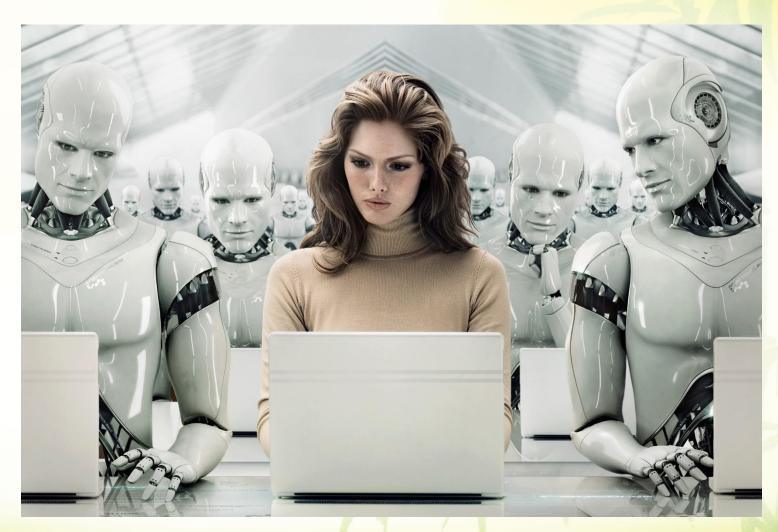






## Save the Actuary!





# Exponential technologies: "Faster, smaller, cheaper"



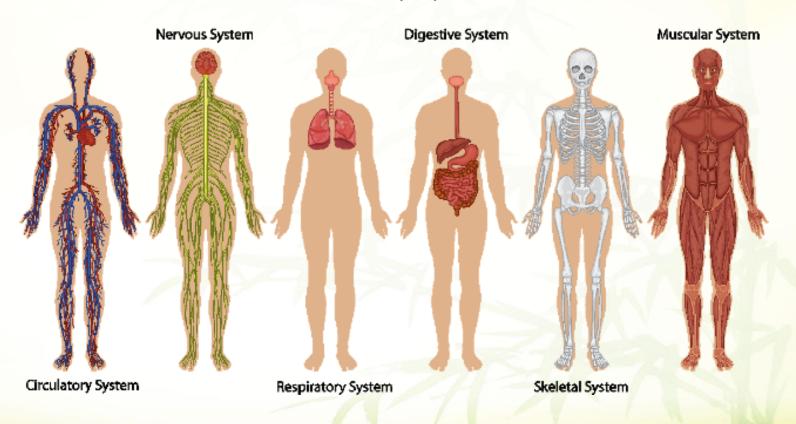




# Assess impact of regenerative medicine on future mortality



#### **Human Body Systems**



#### To move from Sickcare to Healthcare



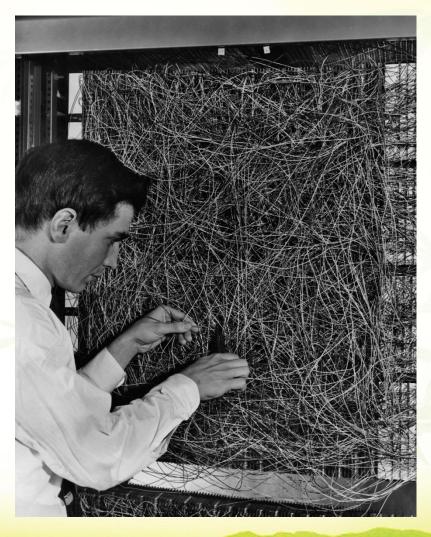


# The Healthspan Imperative

A film about America's next great priority
NARRATED BY MARTHA STEWART



# Deep learning: Feed enough data into networked computers & they will eventually learn to make sense of it





# Must-have: actuarial Intelligence Amplification (IA) tools





Cheating scandal – Borislav Ivanov speaks out

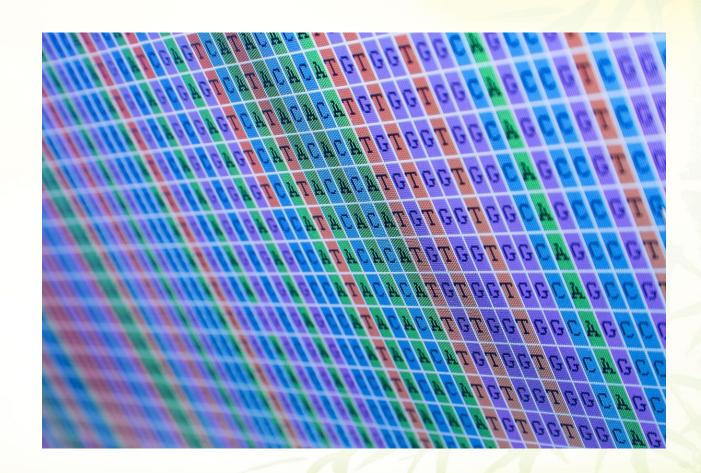






## Can Google solve...Death?



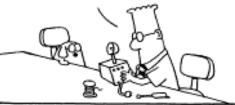




# Complex computational problems solved with Quantum Computing



I'VE INVENTED A QUANTUM COMPUTER, CAPABLE OF INTERACTING WITH MATTER FROM OTHER UNIVERSES TO SOLVE COMPLEX EQUATIONS.



ACCORDING TO CHAOS
THEORY, YOUR TINY
CHANGE TO ANOTHER
UNIVERSE WILL SHIFT
ITS DESTINY,
POSSIBLY KILLING
EVERY
INHABITANT.



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### Interpersonal skills and the single Actuary



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# How Singapore uses behavioural economics



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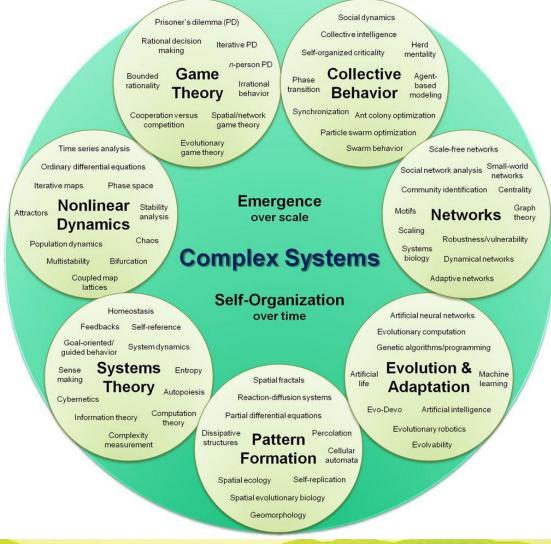
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# Insurance markets are complex systems ripe for complexity science







## Evolutionary theory applied to finance





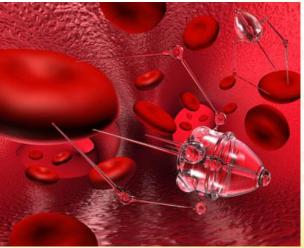


## The death of Cancer (Insurance)











# The engineering bottlenecks to automation



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"Yes, I think I have good people skills. What kind of idiot question is that?"



# Who drives the Life company of the future?







### Can actuaries survive the Digital Age?





"There must be some mistake. According to our actuary tables I'm going to live to 83."

