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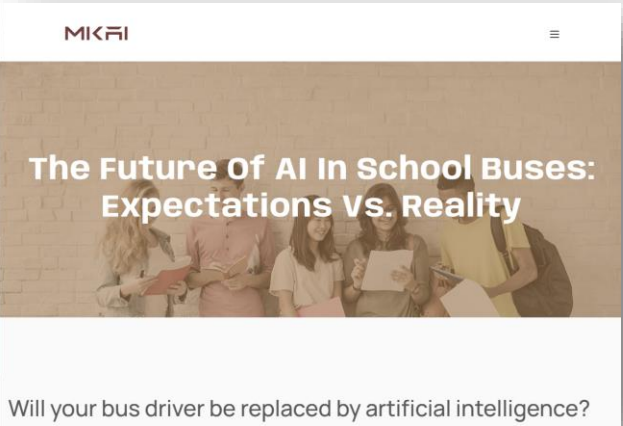
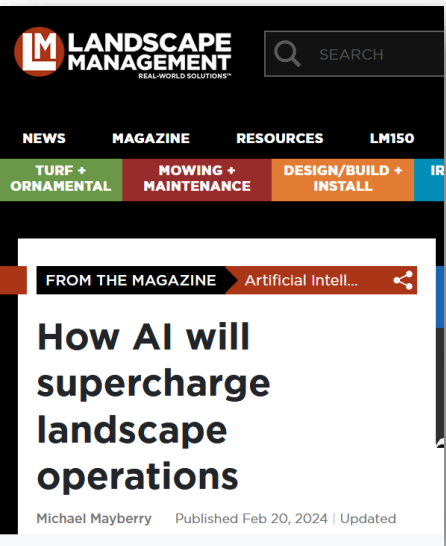
AI in insurance and insuring AI

Navigating regulations, risks and opportunities

Jonathan Cohen | Kushal Mithal
May 2024

AI is everywhere and everyone is excited

Embracing the Possibilities: How AI is Transforming Veterinary Practices



Insurers are looking to apply AI across the value chain

Distribution

- AI-based **chatbots** for customer enquiries
- AI-led efficiency reducing turn-around time for quotes, pre-filling of questions

Underwriting and pricing

- **Automated risk assessment** and underwriting capability (e.g. Swiss Re's Magnum platform)
- Identify new underwriting factors from claims notes
- Check adherence to underwriting guidelines

Claims

- **Claim note summarisation**
- Automated motor vehicle **repair cost estimates** using image recognition
- **Fraud** detection

Customer and marketing

- Personalised recommendations to customers
- **Monitor and address complaints**

Supporting infrastructure

Enable use cases

Governance

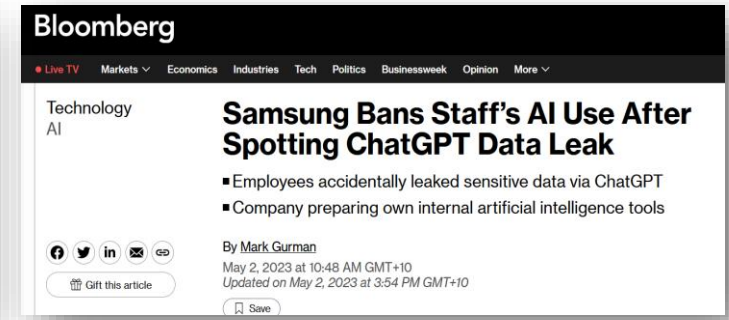
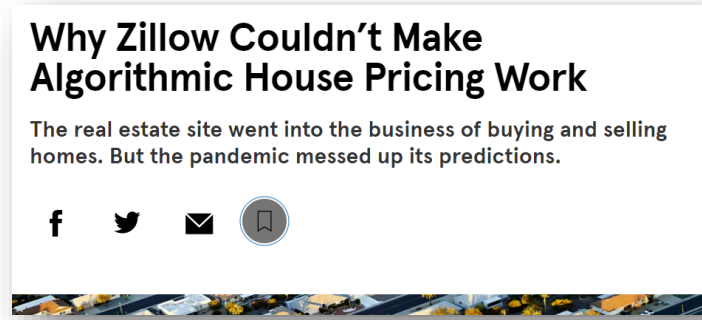
Manage risks of complex processes



New tools, new risks

The use of AI comes with risks

- Hallucination and false information
- Bias
- Privacy infringement
- Copyright violations
- Harmful content
- Malicious attacks
 - Data poisoning
 - Prompt injection
 - Privacy leakage



We'll explore three perspectives

- 1 Regulation, legislation and other requirements
- 2 Impacts on existing insurance products
- 3 New product opportunities

Lots of great opportunities for insurers to use AI, but our focus today is on internal governance and insuring AI risks.

Lots more detail in the accompanying paper.



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Looks great on first glance, but how many mistakes can you spot?

1

Reining it in

Regulation, legislation and other requirements



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Presented at the 2024 All Actuaries Summit

Risks of AI feature prominently on regulators' radar

Responsibility towards good governance is not changed just because the technology is new....

And businesses, boards, and directors shouldn't allow the international discussion around AI regulation to let them think AI isn't already regulated. Because it is. For this reason, and within our remit, ASIC will continue to act, and act early, to deter bad behaviour whenever appropriate and however caused.

Joe Longo, ASIC Chair

Keynote address at UTS Symposium (2024)

We're saying to regulated entities, **if you use it, make sure you've got the appropriate controls.**

John Lonsdale, APRA Chair

ASIC Annual Forum 2023



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Legislation and regulation is already here

Legislation applies to outcomes and impacts regardless of how they arise

Harms	Privacy laws	Australian Consumer Law	Anti-discrimination law	Risk management obligations	Data security, confidentiality or IP laws / obligations
Misuses data or personal information	✓			✓	✓
Produces incorrect output	✓	✓			
Provides misleading advice or information		✓			
Provides unfair or unreasonably harsh treatment		✓			
Discriminated based on protected attribute			✓		
Excludes an individual from access to a service		✓	✓		

Source: draws on Solomon & Davis, The State of AI Governance in Australia, 2023

More is coming

AI specific regulations

- Work in progress, likely to be light touch.

Privacy Act review

- Broader range of data considered to be personal information
- Increased consumer rights around how their data is used and stored

Final form of regulatory and legal landscape is uncertain

Australia likely to be a “regulation taker” and lean on international developments

Prominent approaches in other jurisdictions include:

- **US – pragmatism:** presidential executive order passed in October 2023, focused on guidelines and standards. More prescriptive policy for government agencies announced in March 2024.
- **UK - principles:** sector-specific regulators to initially interpret 5 principles that underpin their framework.
- **EU - laws:** AI Act approved in March 2024 – the first legal framework on AI globally.

Towards responsible AI

A lot of international developments in how you address risks in this context

- Ethics principles
- Governance frameworks
- Standards

Responsible AI refers to the collective application of these

Ethics principles

- Are **broad guidelines** for how AI systems can be ethically developed and deployed
- Voluntary so influence varies by organisation, but offer value in guiding risk management frameworks
- Examples include:
 - OECD's five value-based AI Principles
 - Ethics principles within Singapore's AI governance testing framework
 - US NIST building blocks of AI trustworthiness

Australia's AI Ethics Principles

1. Human, societal and environmental wellbeing
2. Human-centred values
3. Fairness
4. Privacy protection and security
5. Reliability and safety
6. Transparency and explainability
7. Contestability
8. Accountability

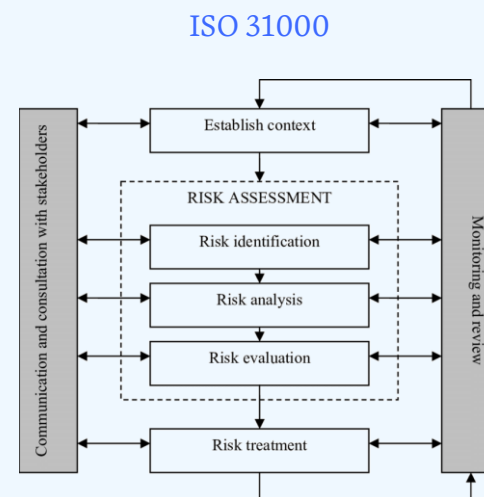
Governance frameworks

International race to develop governance frameworks

- Stream of advice coming from governments, universities, professional organisations and LinkedIn AI enthusiasts
- Prominent examples include:
 - US NIST Artificial Intelligence Risk Management Framework
 - Singapore Model Artificial Intelligence Governance Framework
 - NSW AI Assurance Framework

Actuaries' crib sheet to AI governance frameworks

Many of the frameworks build on, or converge to, a process very similar to ISO 31000



NIST AI governance cycle



Governance frameworks may also build out:

- Organisational controls through a three lines of defence model
- Technical controls through the modelling and deployment process

Standards set a baseline for governance practices



ISO 42001 likely to become the “Standard Standard”

- “Management standard” – so organisations can be **certified** for meeting it.
- Certification process expected to roll out later this year
- Has reasonably broad coverage:
 - **Understanding** the context of an organisation
 - **Leadership** – Roles, responsibilities, establishment of an AI policy
 - **Planning** – Actions to address risks and opportunities
 - **Support** – Resources, competence, communication
 - **Operation** – planning and control, assessment and treatment of AI risks, impact assessment
 - **Performance evaluation** – Monitoring, measurement, analysis and evaluation, internal audit
 - **Improvement** – Continuous improvement for suitability, adequacy and effectiveness of the AI management system.

2

Emerging insurance risks

Impacts on existing lines



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Potential silent exposures exist across many lines

...Though to varying degrees

- Directors & Officers
- Professional Indemnity
- Product liability
- Cyber insurance

Immediate
questions

- Workers Compensation
- Motor
- CTP

Longer-term
behavioural
shifts

We'll dig into the first four in more detail

Complex relation between AI and Liability

- Three core requirements for proving negligence, with significant legal debate around each component in an AI context:
 1. Duty of care
 2. Breach of duty of care
 3. Causation
- Will likely take time for these issues to be clarified, through case law and other avenues
- Some international attempts to address the relationship, e.g. the EU Liability Directive

'What we're seeing is not telehealth': alarm over doctors using AI and prescribing without seeing patients

Consumers Health Forum calls on Australian government to address 'significant safety concerns' about prescribing without any conversation with patient

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📷 Guidelines that came into effect in September state that 'asynchronous, online tick-box prescribing without a real-time patient-doctor consultation is not good medical practice'. Photograph: fotostorm/Getty Images



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Key issues across liability classes

Professional Indemnity

- Many professions are integrating ChatGPT and related tools into their workflows, with varying levels of oversight
- More targeted AI tools also being rolled out, e.g. diagnostic support for doctors
- Use of AI does not remove the need for ensuring the quality and accuracy of work
 - E.g. AI used or carrying out legal research, contract comparison, due diligence, etc.

Directors & Officers

- Claims may be made against business leaders for financial loss due to decisions or actions on their part that relied on advice from an AI model, where a breach of **duty of care** can be established
- Provisions of the **Corporations Act 2001** require directors to perform their duties with care and diligence, in good faith and in the best interests of the corporation for a proper purpose
 - This extends to decision-making and management relating to use of AI



Key issues across liability classes

Product Liability

- AI increasingly being incorporated into physical products, for example cars, drones, household appliances and other products using AI to make decisions
- Proving liability for AI-related harm is **challenging to identify liable parties** with large number of people behind AI systems

Cyber

- Use of AI for **more sophisticated attacks**, but impact offset by use of AI to **strengthen defences**
- Heightened **risk of data breach** – data flowing through newly developed AI systems + increased range of data considered to be personal information under Privacy Act changes



How insurers are starting to respond

- 1 Clarifying coverage**
Removing ambiguity, including addressing silent AI coverage through revised policy language related to AI risk and **carve-outs**, or **riders** for affirmative coverage
- 2 Building out underwriting requirements**
To **better assess AI risk**, but also aware that the process has the potential to become **onerous** with the many potential applications that could be created and deployed
- 3 Expanding AI knowledge**
Organically and through partnerships to support underwriting and pricing through **technical assessments and monitoring**
- 4 Developing AI insurance solutions**
New product opportunities and bundles/packages



3

New product opportunities



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Can we really insure AI risks?

Our findings emphasise the distinct characteristics of [.....] risks compared with other operational risks and bring to light **significant problems** resulting from **highly interrelated losses, lack of data** and **severe information asymmetries**.

These problems hinder the development of a sustainable [.....] insurance market.

The Geneva Papers on Risk and Insurance

The International Association for the Study of Insurance Economics, June [.....]

Can we really insure AI risks?

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These problems hinder the development of a sustainable **cyber** insurance market.

The Geneva Papers on Risk and Insurance

The International Association for the Study of Insurance Economics, June **2014**

Meanwhile, global cyber insurance premiums estimated to be around **US\$14 billion in 2023**, projected to grow to US\$29 billion by 2027.

Munich Re Global Cyber Risk and Insurance Survey 2024

Some products already on the market



- **Performance guarantee product** for AI developers/providers: an insurance-backed performance guarantee for AI models (aiSure), including coverage for damage caused



- **Warranty product** covering the investment cost of the vendor's customers should the AI model fail, backed by reinsurers including Swiss Re, Greenlight Re and Chaucer
- **Audit product** – an automated AI auditing service to assess AI models for safety and trustworthiness



- **Liability product** providing cover for damages awarded in lawsuits associated with the insured's AI product, and can include cover for defence costs irrespective of fault

Covers risks such as errors, discrimination, regulatory violations, intellectual property disputes

New product opportunities

We discuss [four examples](#) of potential AI-related insurance products:

- Algorithmic liability cover
- IP infringement cover
- Regulatory compliance cover
- AI Assurance indemnity cover

We also work through [practical considerations](#) in developing products

New product opportunities

Algorithmic liability cover

What it would cover

- Coverage for liability to the developer of an AI model that arises when an AI model does not perform as required, resulting in injury or financial loss

Opportunities

- An increasing appetite to deploy AI coupled with persisting [concern around accuracy](#) – immediate solution for developers and users to gain confidence in using AI

Risks

- Uncertain exposure where insured does not maintain foundation models and [concentration risk](#) associated with foundation models

IP infringement cover

What it would cover

- Cover to developers of AI models (including systems relying on foundation models) against damages relating to IP infringement

Opportunities

- [Legal uncertainties](#) pose a market opportunity as companies look to limit exposure
- [Developer commitments](#) to cover damages relating to IP infringement may be indicative of market opportunity for insurers (E.g. Microsoft Copilot)

Risks

- Case law on IP infringement unresolved
- Reliance on foundation models increases [concentration risk](#)

New product opportunities

Regulatory compliance cover

What it would cover

- Cost of penalties/fines from accidental non-compliance with government regulations

Opportunities

- Uncertainty around [interpretation](#) of compliance requirements creates market as companies look to manage risk
- Organisations may seek protection against [penalties within AI regulations](#)

Risks

- Regulatory/legislative uncertainty is significant
- [Moral hazard and adverse selection](#) potentially elevated for new line of business

AI assurance indemnity cover

What it would cover

- Liability to certifiers in cases where certified models fail in practice

Opportunities

- Persisting concerns around [trust in AI](#) – certification may emerge as a solution to build confidence

Risks

- [Low barriers to entry](#) for certification services with a wide range of competence across insureds
- [Expertise](#) required in fast-developing field of AI, along with ability to assess insureds' proficiency

Practical matters

Careful design can address insurability challenges

Capital

Capital requirements intended to reflect the risk borne by regulated entities. First movers are likely organisations with **large capital bases** and **broad risk appetites**.

Product design and underwriting

Initial offerings may have modest limits and restricted coverage due to **limited data availability** and a fast-evolving risk profile.

Pricing

Limited data availability may spur **collaboration** with clients and partners to share data, and more reliance on **indirect factors** in pricing.

Claims assessment and management

Expertise required in claims management, along with legal expertise to understand the evolving regulatory landscape.

Accumulation of losses

Concentration risk stemming from widely used foundation models, **catastrophe-like scenarios** are plausible.

Reinsurance

Two of the three existing AI insurance products have reinsurer involvement.



4

Wrapping up



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Key takeaways

- 1** | Rapid expansion in AI application. Need to balance opportunities and risks.
- 2** | Legislation and regulation already applies. Need to review and strengthen risk management practices where needed.
- 3** | Increasing use of AI will impact on existing lines of business, particularly liability classes.
- 4** | Opportunities for insurers to develop and market products targeted at AI-related risks. Care and pragmatism needed.



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Questions?

The Actuaries Institute acknowledges the traditional custodians of the lands and waters where we live and work, travel, and trade.

We pay our respect to the members of those communities, Elders past and present, and recognise and celebrate their continuing custodianship and culture.

About the Actuaries Institute

The Actuaries Institute is the peak professional body for Actuaries in Australia. The Institute provides expert comment on public policy issues where there is uncertainty of future financial outcomes.

Actuaries have a reputation for a high level of technical financial expertise and integrity. They apply their analytical and risk management expertise to allocate resources efficiently, identify and mitigate emerging risks and to help maintain system integrity across multiple segments of the financial and other sectors. This unrivalled expertise enables the profession to comment on a wide range of issues including life, general and health insurance, climate change, superannuation and retirement income policy, enterprise risk management and prudential regulation, the digital economy, finance and investment and wider health issues.

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