4most
ANALYTICS CONSULTING

Model Risk Management
For Today and Tomorrow

Edinburgh

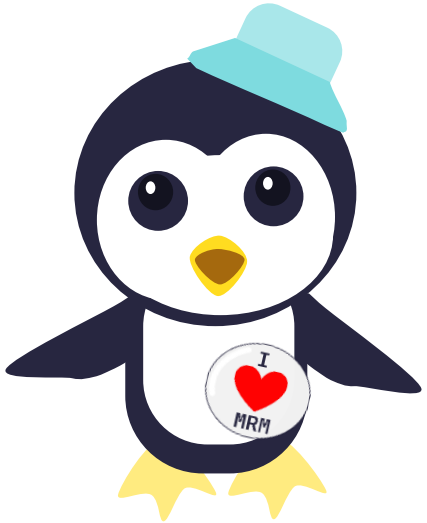
August 2025

Private & Confidential

Agenda

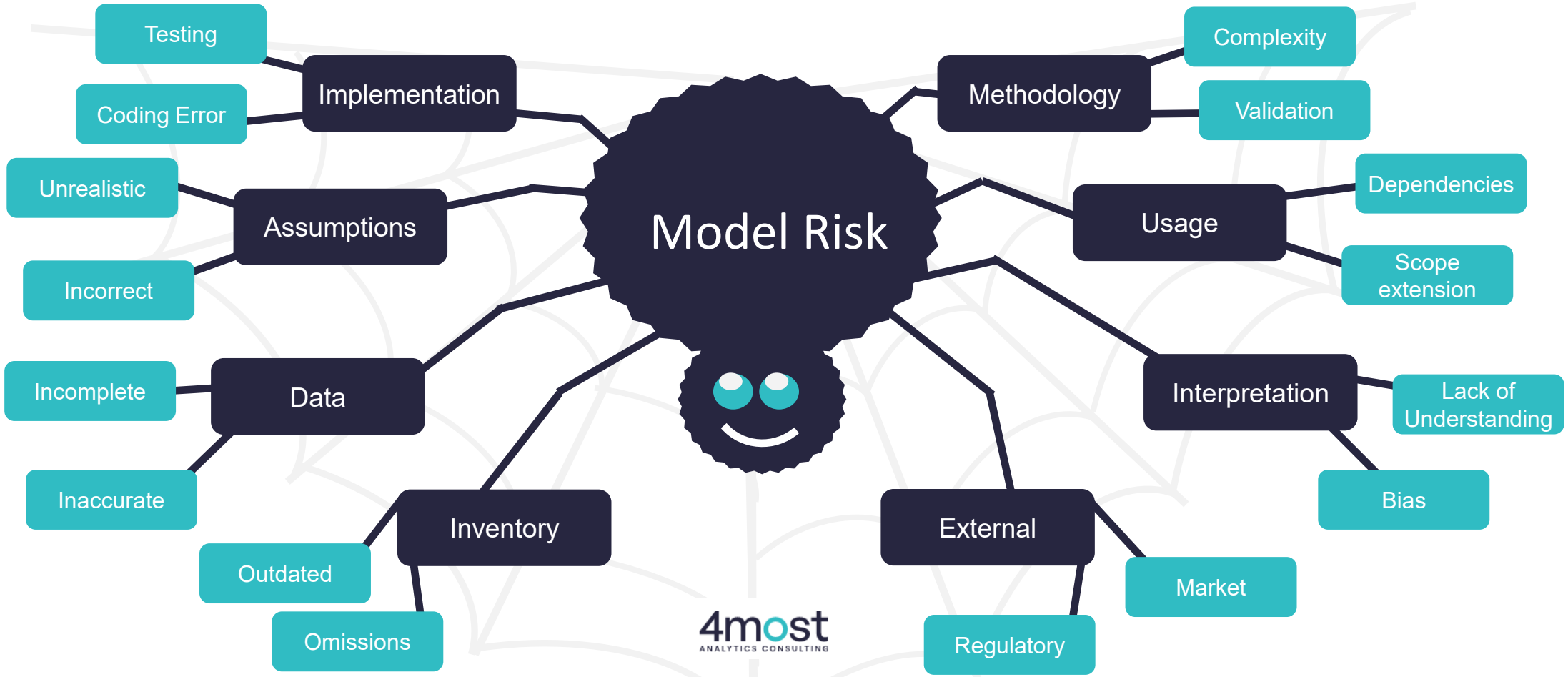
- Model Risk
- Model Risk Management
- Industry Sentiment
- Model Risk Management Challenges
- Model Risk Culture
- Innovation
- Efficiency

- Benefits



Model Risk

The sources of model risk are many and varied. Management of the risks associated with models requires a comprehensive understanding of the business and environment in which the models are operating. The reliance on models in modern banking means that model risk is a risk in its own right. Regulators across the world have been communicating their growing expectations on firms.



Model Risk Management

From a generalised perspective, the model risk lifecycle follows a universal process. While local terminology might differ, with varying steps of granularity, the different regulators are all ultimately seeking to identify, assess, manage and control the sources of model risk.

Identification & Classification

If a model is not identified, risk cannot be managed appropriately

Governance

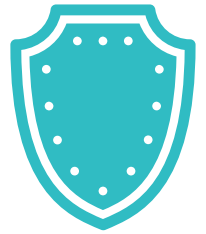
Strong governance and oversight, alongside the promotion of a positive MRM culture and a clear model risk appetite, are essential

Development & Use

Robust standards are required for model development, documentation, design, implementation and monitoring

Independent Model Validation

Ongoing, independent and effective challenges to the model lifecycle

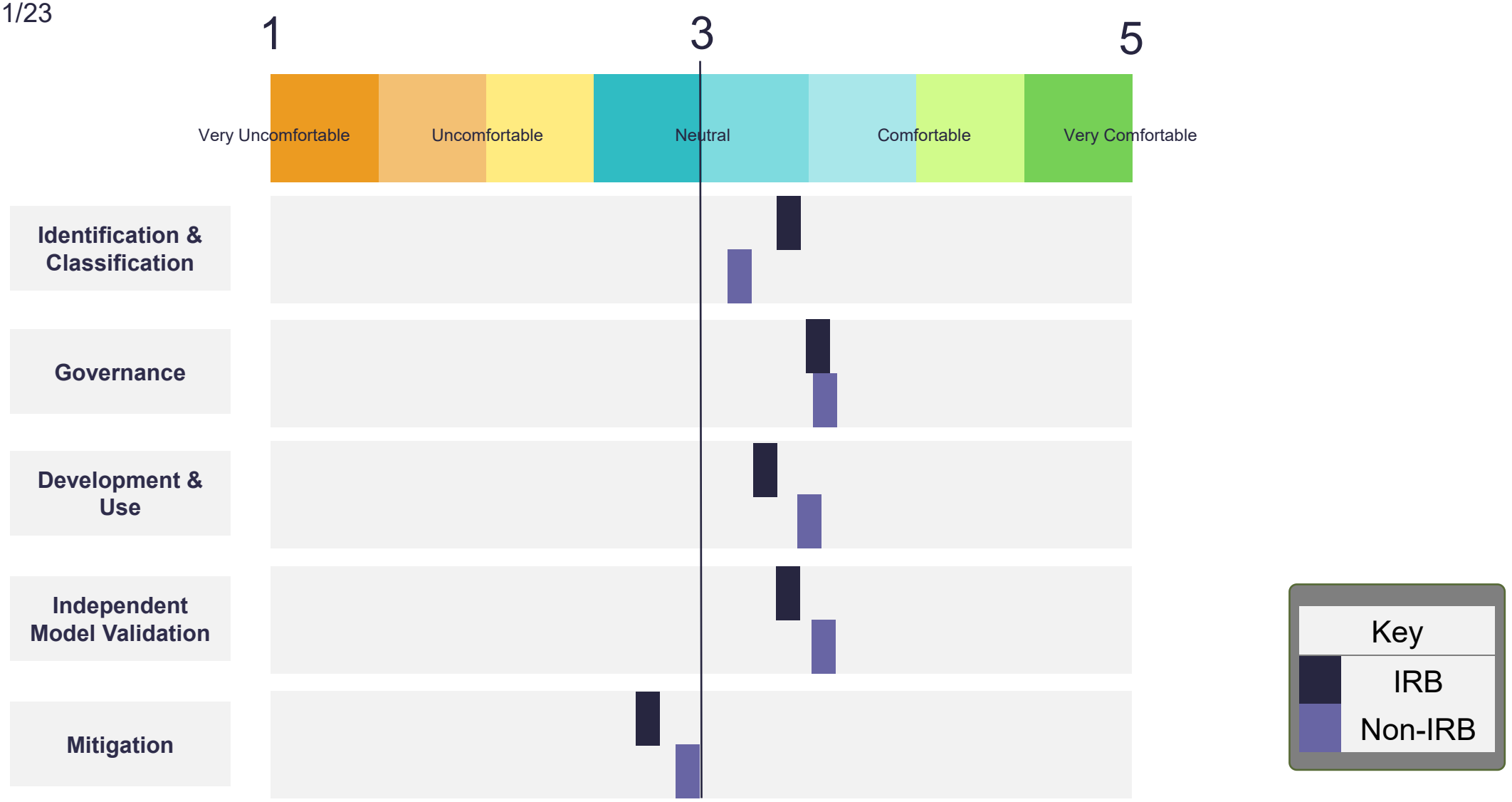


Mitigation

Consistent processes with clear rationale for mitigants compensating for model limitations

Banking Industry Sentiment

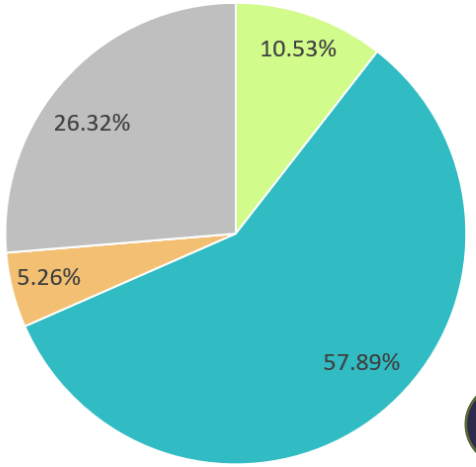
In Dec ‘24 Attendees at a UK 4most roundtable were asked to qualitatively assess their level of comfort with regards to compliance with SS1/23



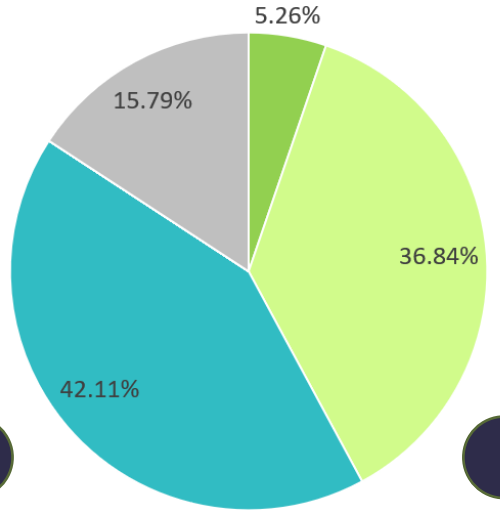
Banking Industry Sentiment

In Dec ‘24 Attendees were asked whether there is an intention to increase investment in the following areas within the next 12 months.

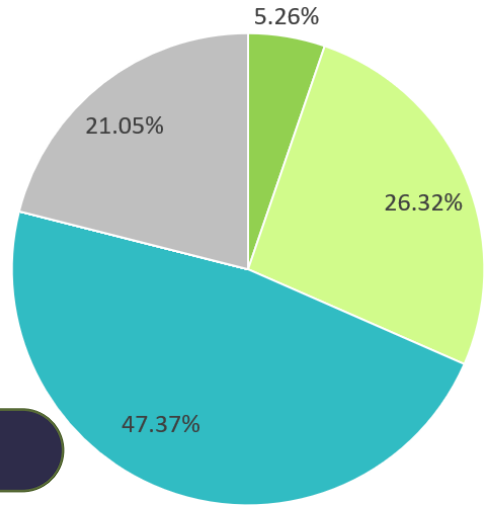
People in the 1st Line



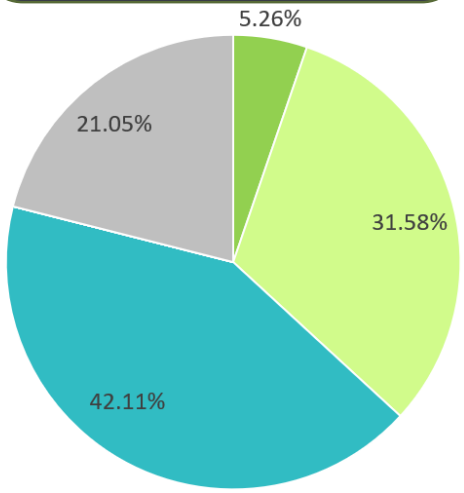
Model Inventory Technology



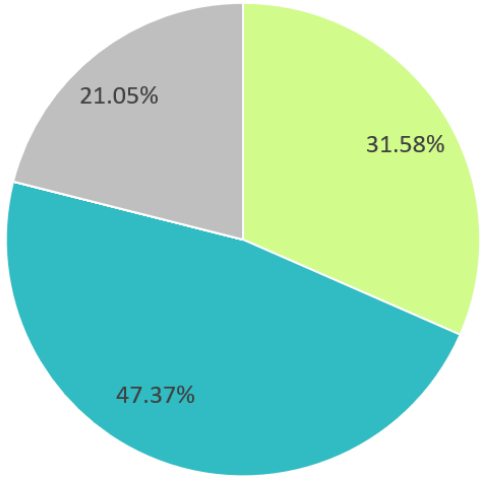
System Enhancements



People in the 2nd Line



Data Enhancements

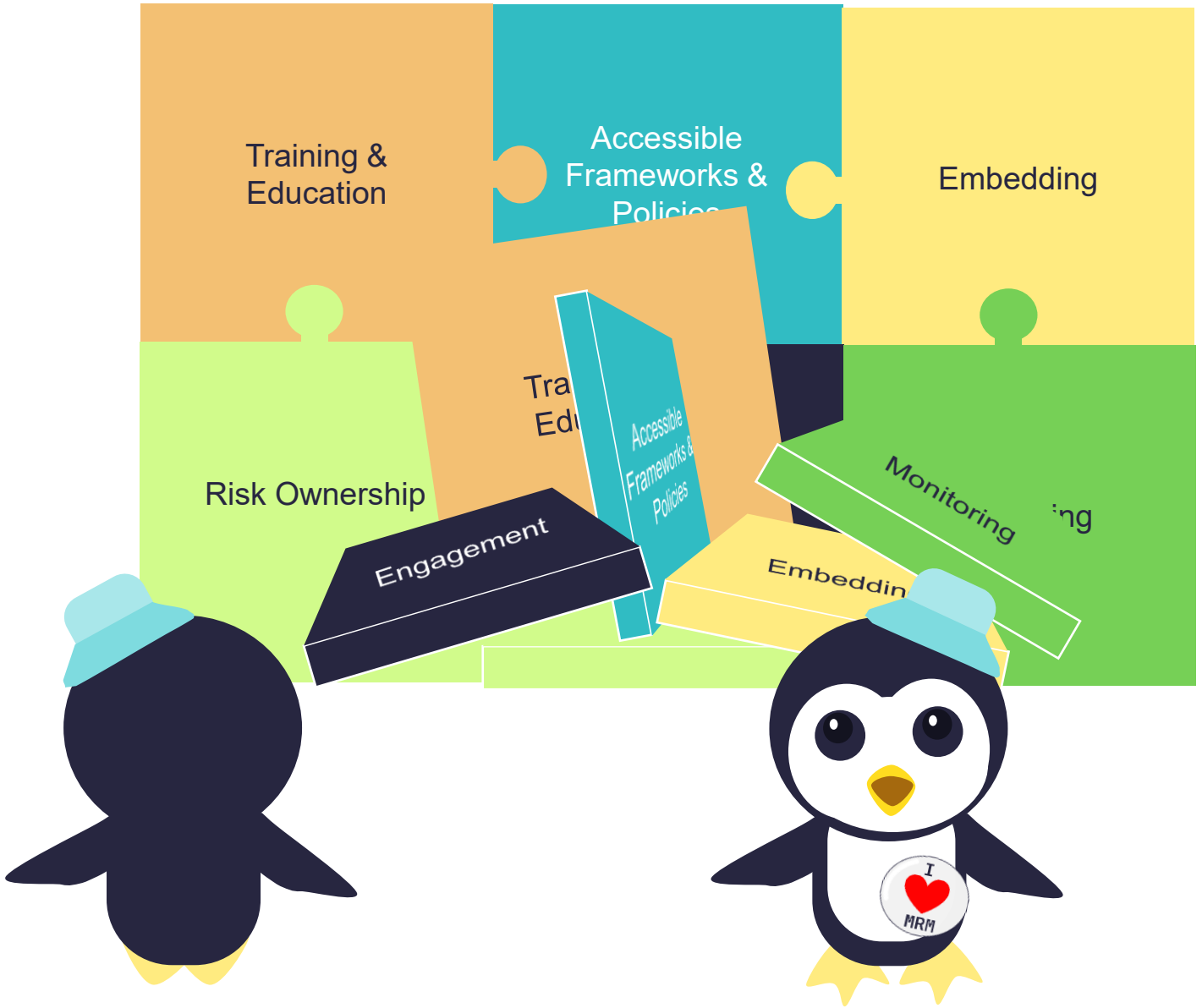


- Significantly Increase
- Increase
- Maintain
- Decrease
- Unknown

Challenges Facing Model Risk Managers

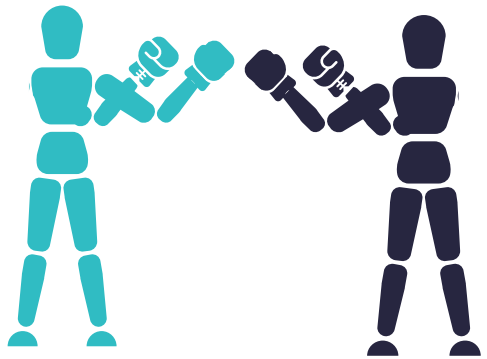
- Poor Model Risk Management Culture
- Novel models requiring niche expertise
- Inefficient Model Inventory
- Expanding Model Landscape
- Poor Stakeholder Engagement
- Absence of a holistic view
- More Work Less Capacity
- Siloed Reporting

Positive Risk Culture

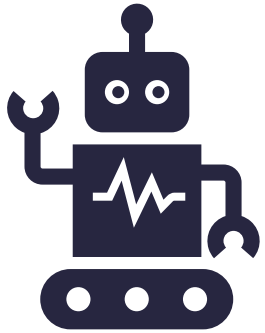


Innovating Controls

Challenger Models can provide important reference points for existing models based on comparable data. Monitoring and interpretability of machine learning models can be improved to provide dynamic insights.



Challenger Models



Machine Learning Controls

Benefits of Controlled Innovation

It's crucial to be able to accommodate enhancements whilst still managing the associated risk.

Compliance

It's important to ensure that the models continue to adhere to required regulation. For example, there are some data elements that are not compliant or acceptable to include in models (such as protected characteristics).

Decision Making

Making innovations in modelling can allow firms to make better decisions, react more quickly to emerging trends, navigate downturns more effectively, and generally enhance their competitiveness

Transparency

Ensuring awareness of which approaches are supported by policy, and which ones are precluded from use. Best practice guidance should identify circumstances which favour one approach over another, and frameworks should support informed and justified decision making.

Focus

Controlling innovation focuses efforts on specific goals and solutions. An environment that does not control and support prioritisation of innovation projects carries the risk of wasting effort.

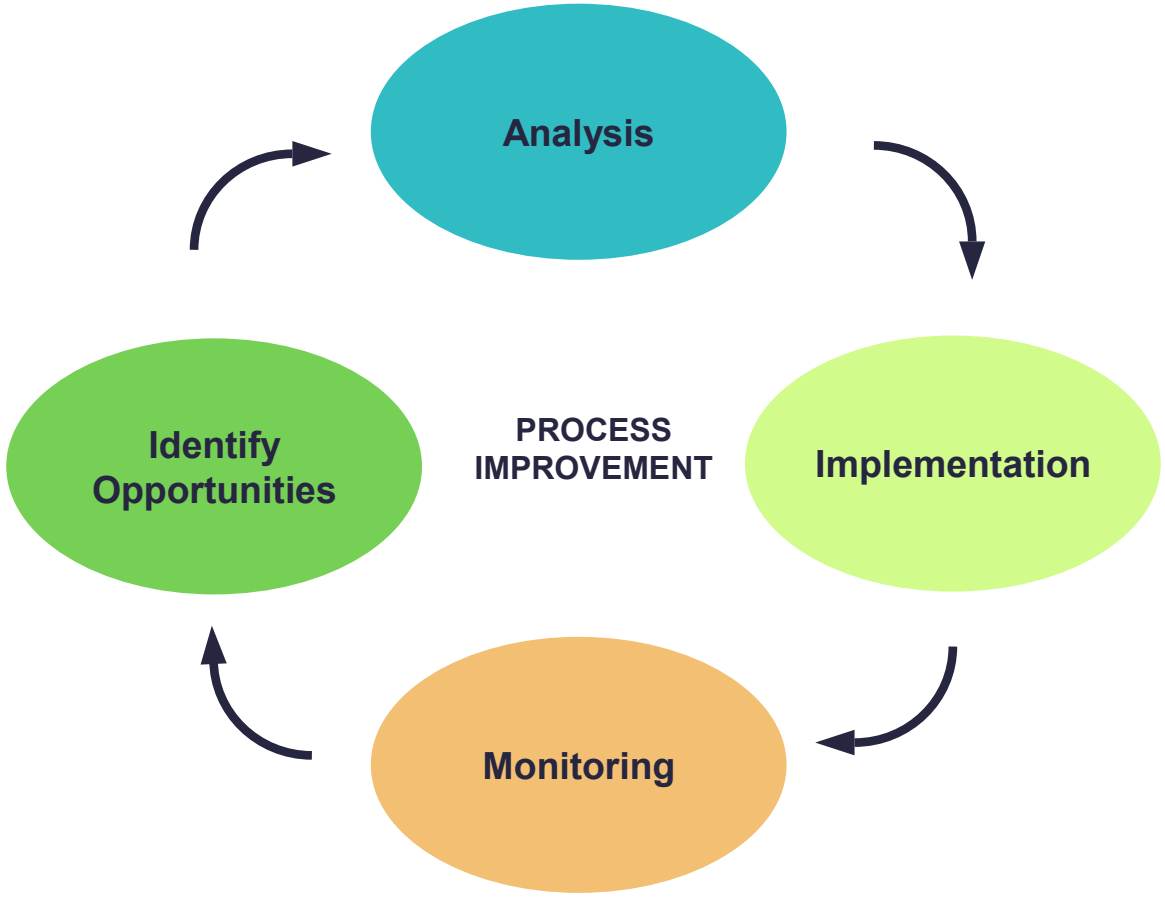
Trust

Trust is hard won and easily lost. It's important to maintain a level of trust with stakeholders that the organisation has the capability to manage and support innovation. A control framework that provides a safe space for innovation is required.

Focus on Efficiency

With increases in scope alongside elevation in required standards and investing time in improving wider engagement in models a focus on efficiency is essential to commercial success.

- Tools
- Planning
- Outsourcing



Inventory Tool: Foundation for MRM

Strengthening Oversight

- Centralised repository of all models across the organisation
- Captures metadata: ownership, purpose, methodology, validation status
- Enables visibility and traceability throughout the model lifecycle
- Supports compliance with regulatory expectations (e.g. SS1/23)

Supports Governance

- Facilitates model classification and tiering based on risk
- Enables timely reviews and validation scheduling
- Supports audit readiness and regulatory reporting
- Promotes accountability through clear ownership and version control

Operational Efficiency

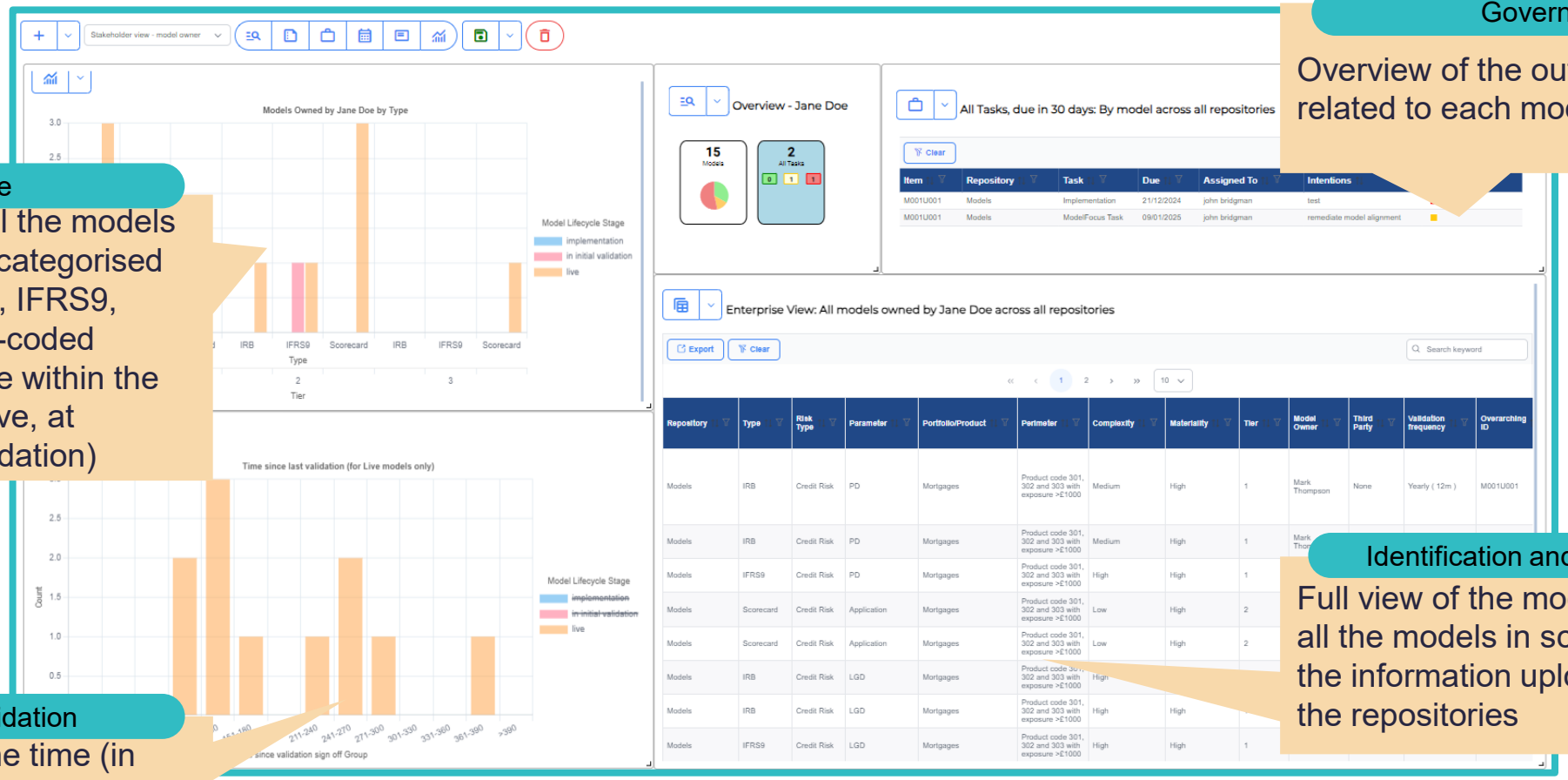
- Reduces duplication and model sprawl
- Identifies outdated or underperforming models supporting prioritisation
- Streamlines model change management
- Enhances coordination between model owners, validators, and users

Strategic Planning

- Informs model risk appetite and planning
- Enables data-driven decisions on model investment and retirement
- Integrates with broader risk and data governance frameworks
- Foundation for automation, AI governance, and next-gen MRM tools

Example: Inventory tool

Below is an example of a dashboard designed to provide **model owners a comprehensive view of their model inventory and associated tasks**. Interactive charts provide a dynamic, visual summary of the key data enabling model owners to efficiently track and manage their models according to each stage of the model life cycle. Additionally, the charts can be exported for integration into other reporting formats.



Governance

Bar chart visualising all the models owned by ‘Jane Doe’, categorised by their Type (e.g. IRB, IFRS9, Scorecard) and colour-coded according to their stage within the Model life cycle (e.g. live, at implementation, in validation)

Independent Validation

Bar chart visualising the time (in days) since all the live models were last validated

Governance

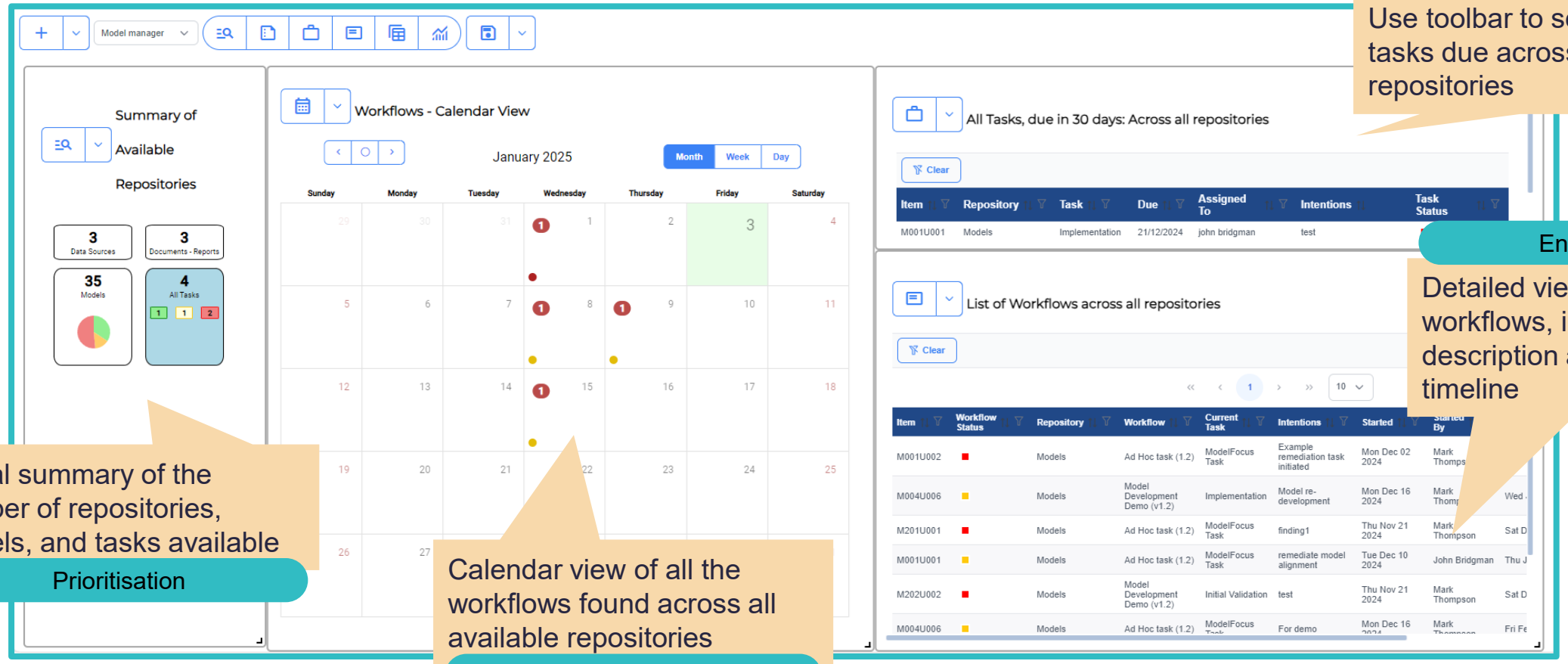
Overview of the outstanding tasks related to each model

Identification and Classification

Full view of the model inventory for all the models in scope, based on the information uploaded across all the repositories

Example: Inventory tool

Below is an example of a typical dashboard fitted to include **summaries of available repositories and task overview**. This enables model risk managers to gain real-time visibility into the current repositories and resources, while streamlining task management. It empowers the team to efficiently prioritise, assign, and track tasks, ensuring optimal workflow and effective collaboration.



Efficiency

Use toolbar to scroll down all tasks due across all available repositories

Engagement

Detailed view of the workflows, including task description and completion timeline

Visual summary of the number of repositories, models, and tasks available

Prioritisation

Calendar view of all the workflows found across all available repositories

Planning

Benefits

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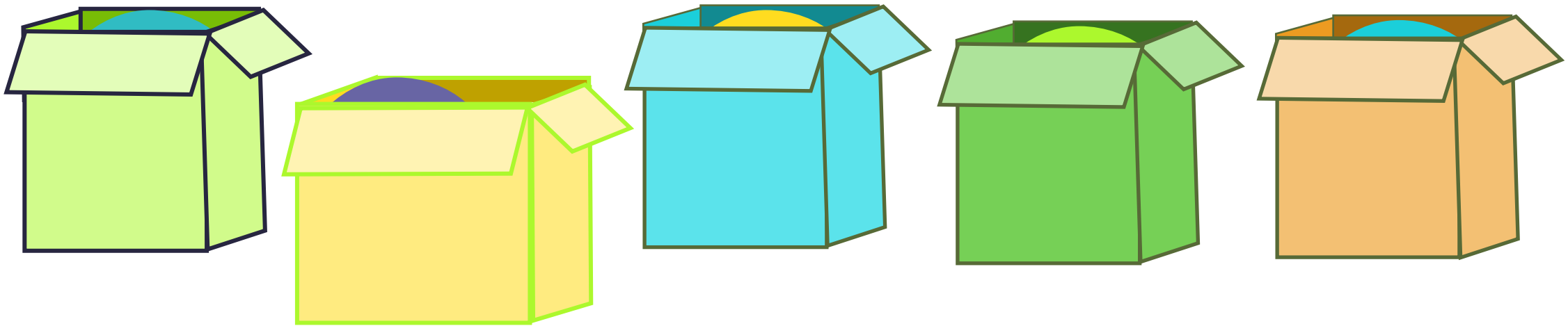

Questions

Visit our service page:
https://4-most.co.uk/

For more information, please contact:

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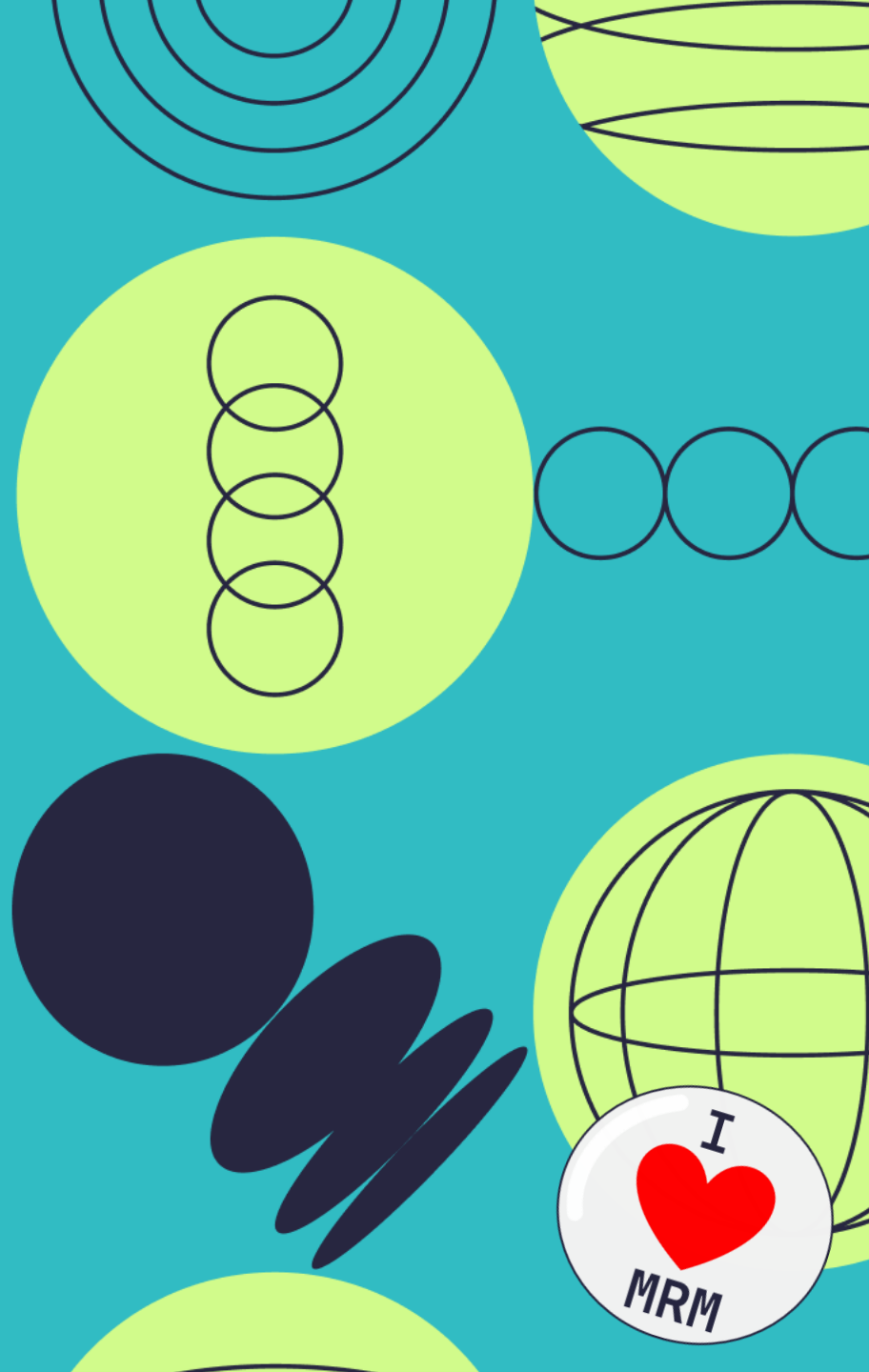

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