

Emerging risks and insurability in a complex environment

Dr. Markus Wadé

Integrated Risk Management
Group Accumulation & Emerging Risks

Sopot, 7 May 2014

Munich Re (Group)*

Reinsurance



Munich Health



Primary Insurance



Munich RE

Munich RE **Risk Solutions**

Corporate Insurance Partner
 Great Lakes Reinsurance (UK) PLC
 KA Köln.Assekuranz Agentur GmbH
 MSF Pritchard Syndicate 318
 Temple Insurance Company
 Watkins Syndicate

Munich RE

DKV
SEGUROS MEDICOS
 Belgium Luxembourg

GLOBALITY DKV **ضمان**

ApolloMunich
 HEALTH INSURANCE **MedNet**

storebrand

ERGO Direkt

Asset management



*This listing is incomplete and provides no precise indication of shareholdings.

- Knowledge and insurability
- Emerging risk management at Munich Re
- Challenge of increasing interconnectedness and complexity

What defines the limits of insurability and private insurance?

Supply side

- Perceived insurability
 - Randomness
 - Definite loss
 - Calculability of loss (e.g. frequency, severity)
- Availability of capital

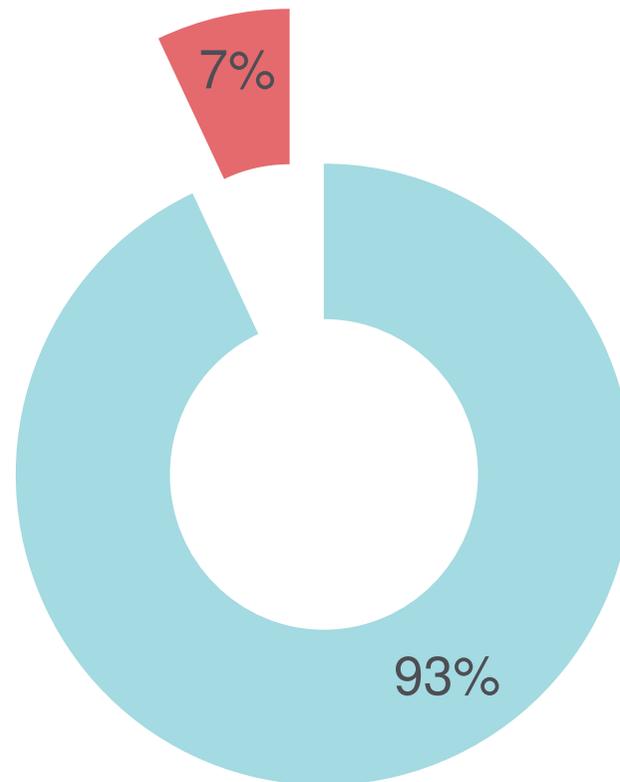
Demand side

- Risk awareness
- Risk appetite
- Willingness and ability to buy insurance cover at a given price



- Regulatory restrictions
- Role of public vs. private insurance

Corporate risk manager:
„Of all the risks I have there are...“



■ Not Insurable ■ Insurable

Paradigm-changing events for risk management (Examples)

Starting 1970s/80s
Asbestos

11.9.2001
Terror-attack on WTC

29.8.2005
Hurricane Katrina

Starting 2007/2008
Financial Crisis

8-10/2011
Thailand Floods



Major global trends in the risk landscape with increasing complexity and interdependencies

New technologies



Globalization/
Urbanization



Climate change/
Scarcity of
raw materials



Increased
regulation &
market volatility



Demographic
development



**Significant consequences of these trends already observable –
Speed of transition and future impact hard to forecast**

Emerging risks (ER) are newly developing or changing risks

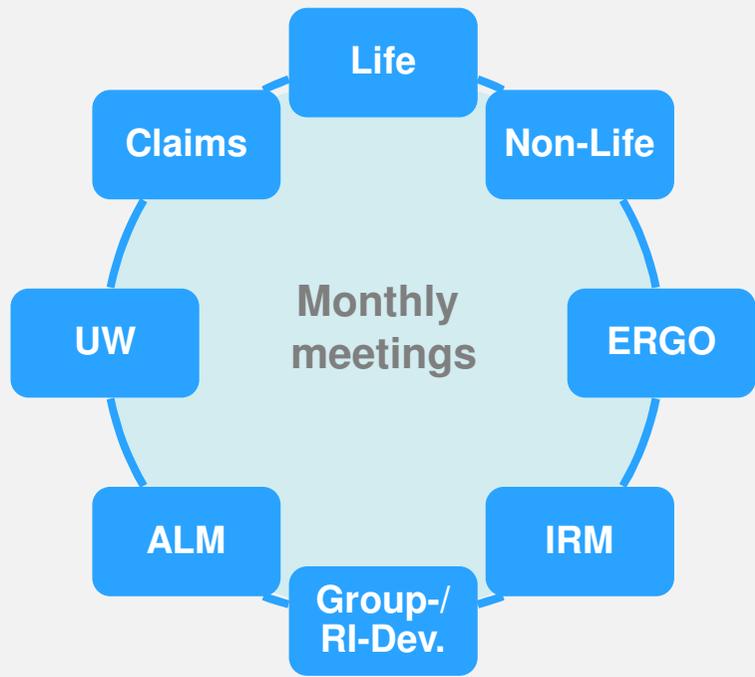
They include trends and potential shock events with

- a high degree of uncertainty (occurrence probability, loss amount)
- a substantial potential impact on an organization



The **ER Think Tank** is an international, heterogeneous & inter-disciplinary team of specialists

The ER Process is managed by the **ER Core Team** (Steering Committee)



Integrating knowledge from a group-wide ER community and external experts

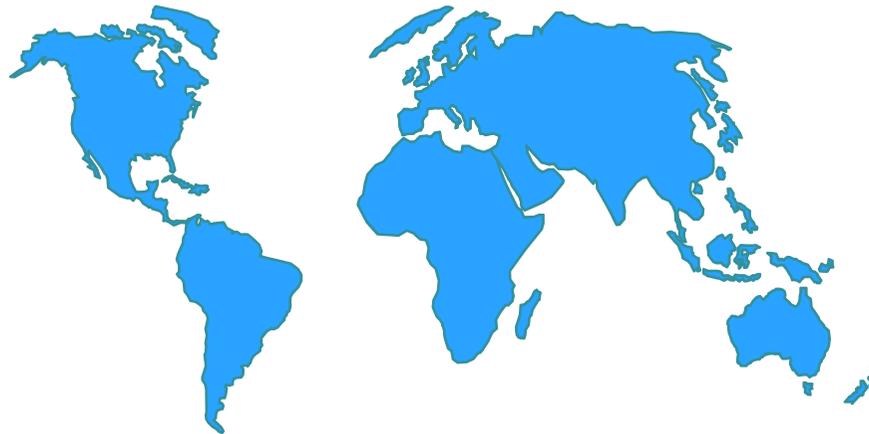
Internal

Round tables / Conference calls:

- Europe & North America
- Asia & Australia
- Africa & South America

External

- Clients (e.g. CRO Forum Emerging Risk Initiative)
- Non-governmental organizations
- Regulatory authorities
- Universities, research institutes

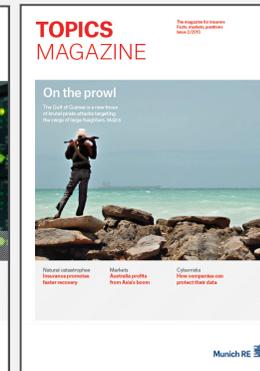


Focus topic cyber risks



- Dependency on IT infrastructure
- Cyber liability
- IT viruses
- Cloud computing
- Cyber war

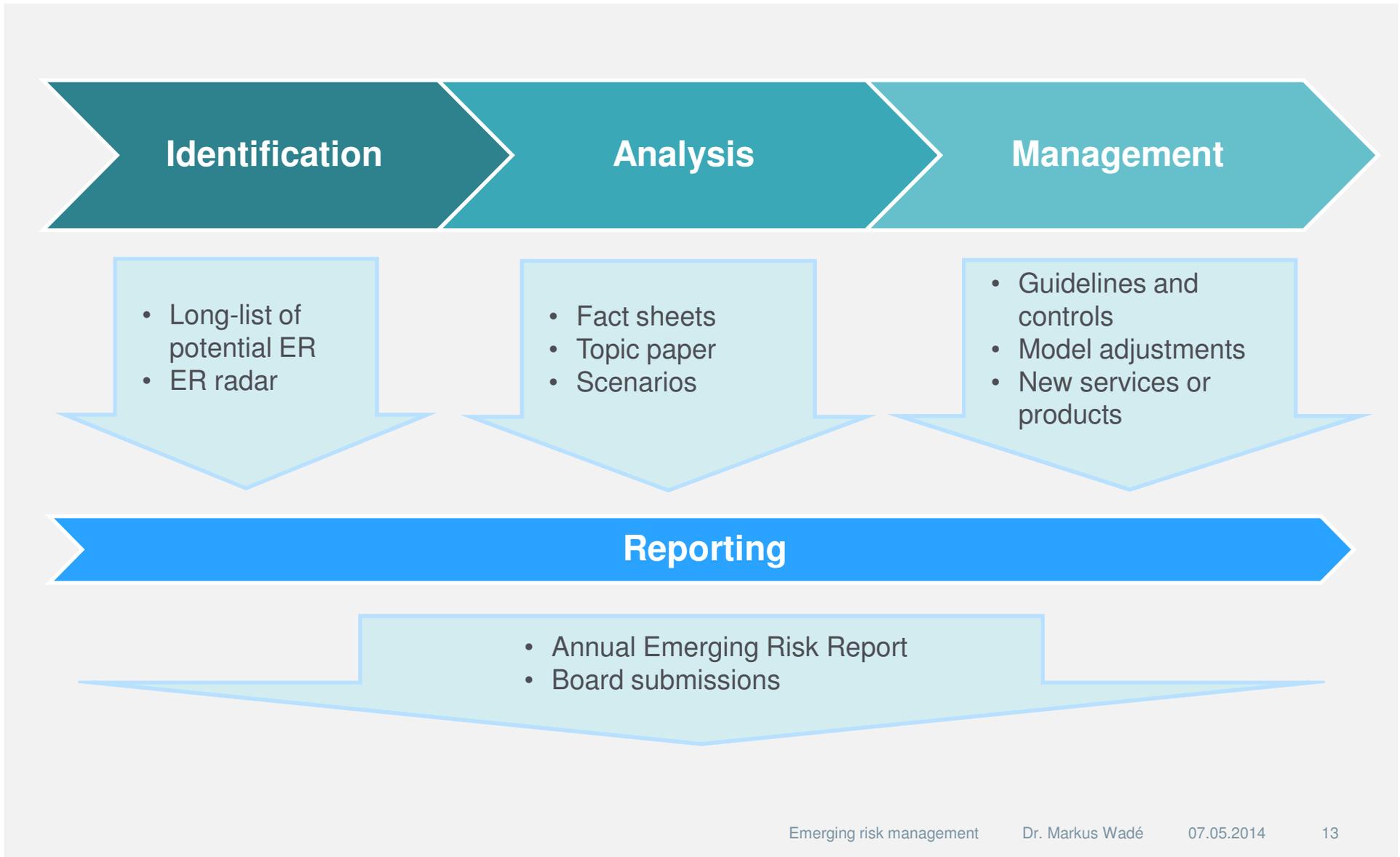
Related publications



Selected topics discussed in 2012/2013

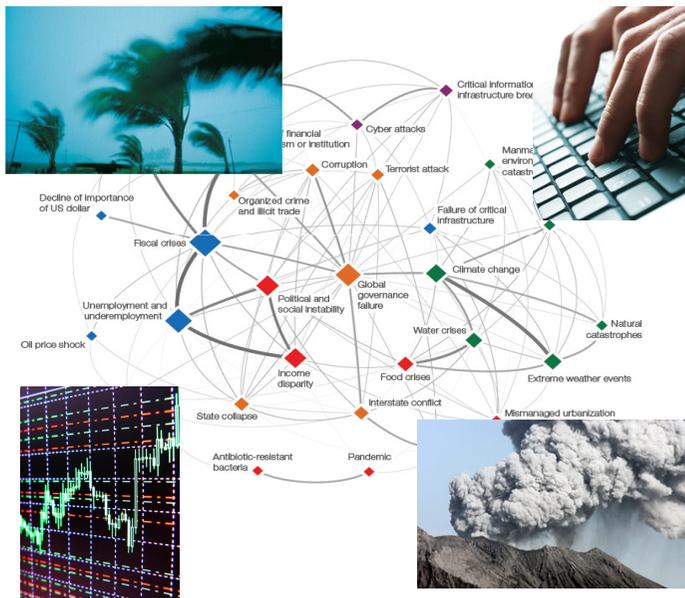
- | | | |
|--|---|---|
| <ul style="list-style-type: none"> ▪ Technology at the limits of controllability ▪ Biometrics ▪ Social media ▪ Artificial Intelligence ▪ Privatisation of government responsibilities | <ul style="list-style-type: none"> ▪ Solar storms ▪ Obesity ▪ Scarcity of resources ▪ Protectionism ▪ Migration of species ▪ Loss of biodiversity ▪ Contentious diseases | <ul style="list-style-type: none"> ▪ Autonomous vehicles ▪ Counterfeit products ▪ Distressed cities ▪ Food security & safety ▪ Wind turbines ▪ Hydrofracking ▪ Social unrest |
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Output of the emerging risk process



Increasing global interdependences have an impact on the insurance industry

Complex loss scenarios



Source Network: World Economic Forum, Global Risks 2014

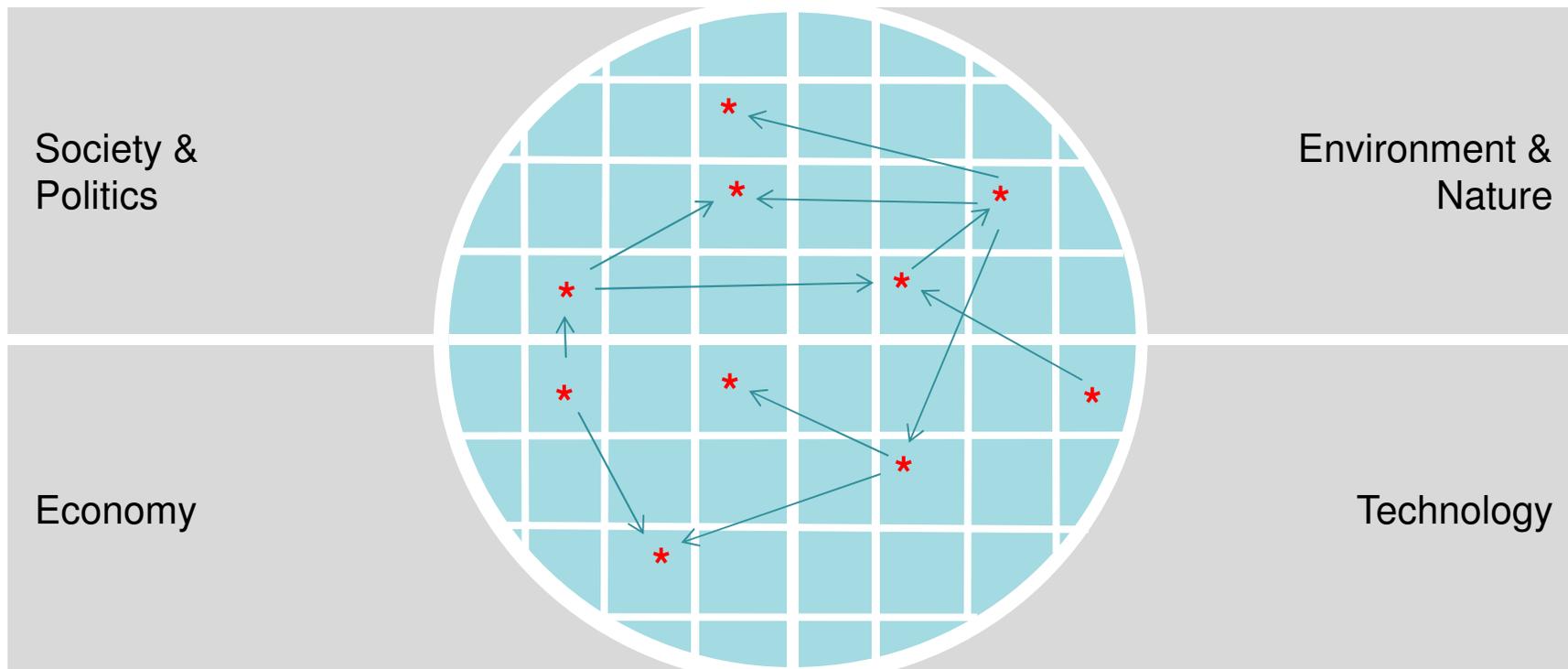
Characteristics

- Historical data less reliable /not available
- Contagion effects and indirect consequences become more important
- Robust, but fragile phenomena
- Triggers and courses of loss events harder to identify, model and control
- Higher frequency of surprises

- Protecting diversification benefits becomes more difficult
- Danger of a widening gap between client needs and limits of insurability

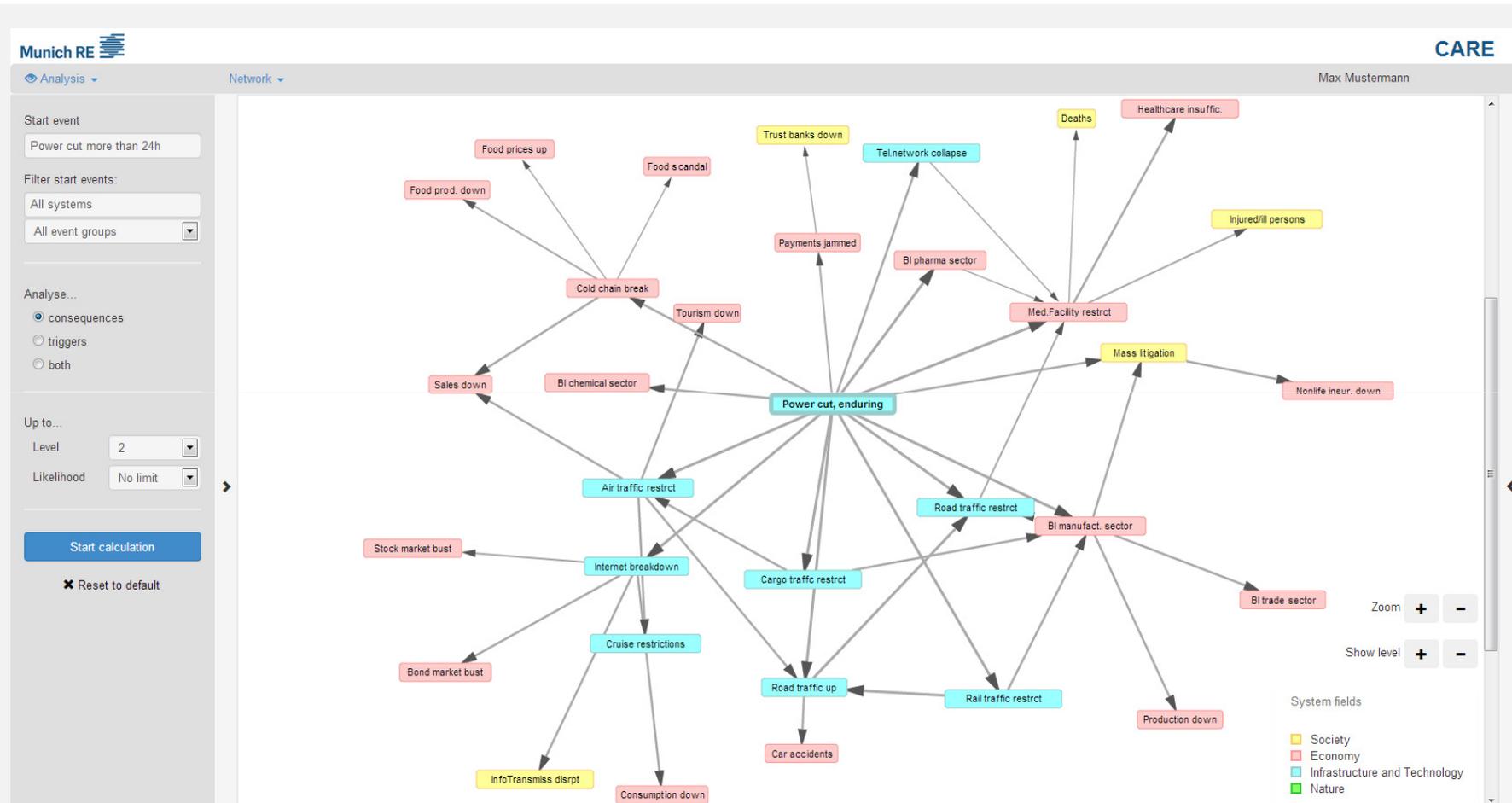
Project: Development of systematic risk landscape for events and interactions

Structure of CARE



Target is the systematic identification of complex loss scenarios using interdisciplinary expert knowledge

To analyze the collected information efficiently, we are currently developing a software tool



Interactions are used to construct event cascades or networks of variable depth

www.munichre.com → The Group → Emerging Risks



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EMERGING RISKS

THE RISKS OF TOMORROW

New technologies and changes in our society and environment present new opportunities, but also harbour new risks. In order to avoid risks and to identify business potential at an early stage, we are examining new and changing risks from every imaginable perspective.



Overarching topics

- » Risk report (PDF, 487 KB, Excerpt from Annual Report 2012)

Corporate responsibility

- » Risk management – The guidance system for corporate governance

External Link

The emerging risk initiative was established in 2005 as part of the CRO forum. Experts from leading primary insurers and reinsurers publish studies and articles on current topics.

- » Emerging risk initiative

Focus on cyber risks

- » TOPICS risk solutions cyber risks
- » Value-added brochure cyber risks
- » HSB: Product information on identity recovery coverage

Contact

- » Your contacts in the emerging risk team



Introduction

Emerging risks harbour dangers that are still difficult to assess at this stage. We keep a close eye on the global risk landscape so that we can identify and assess any new risks.

- » Risks and opportunities of tomorrow

CURRENT

March 2013

MANAGING COMPLEX RISKS SUCCESSFULLY

In their discussion paper, Rainer Sachs and Markus Wadé describe the difference between "risk" and "uncertainty", and



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Thank you very much
for your attention

Dr. Markus Wadé