



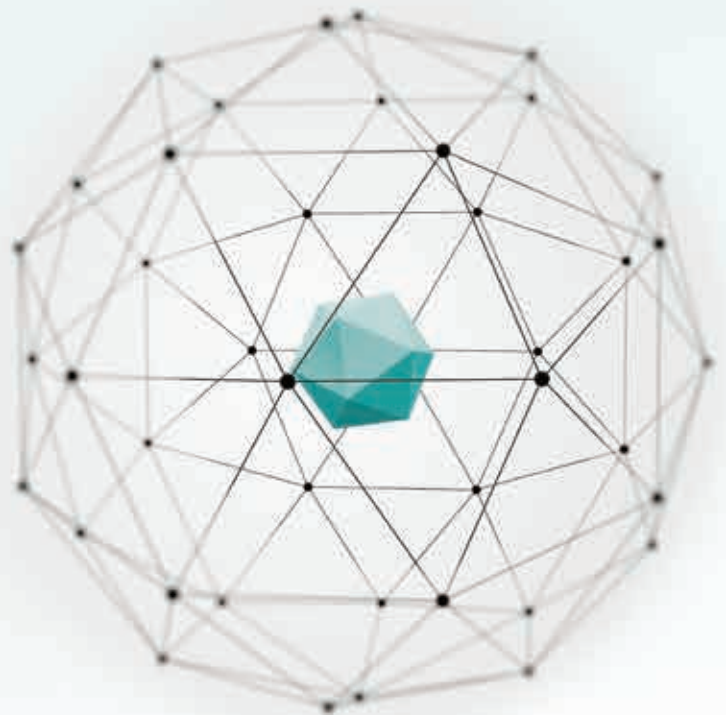
Dynamic Risk Assessment

The power of four

An evolution in risk assessment that applies actuarial theories, sophisticated algorithms, mathematics and advanced D&A together in a KPMG proprietary methodology to identify, connect and visualize risk in four dimensions.

KPMG International

kpmg.com/dra



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Introduction

We believe that KPMG's *Dynamic Risk Assessment (DRA) marks a ground-breaking shift in risk identification.

DRA was developed to provide KPMG auditors and clients with a better understanding of the risks their organizations face in today's complex world of developing technology, emerging markets, climate change, growing populations and other mega-trends that interact and shape our future.

Pioneered by Global Lead Andries Terblanché, a KPMG Partner and Research Fellow to the Institute of Global

Finance, and a team of data scientists, mathematicians and economists, DRA takes an unprecedented approach to gaining insights into clients' risk environments — by pinpointing central risks and shedding new light on the effectiveness of controls.

DRA is currently being scaled for use across KPMG's global network of member firms.

You can learn more about KPMG's Dynamic Risk assessment at www.kpmg.com/dra

Need more information?

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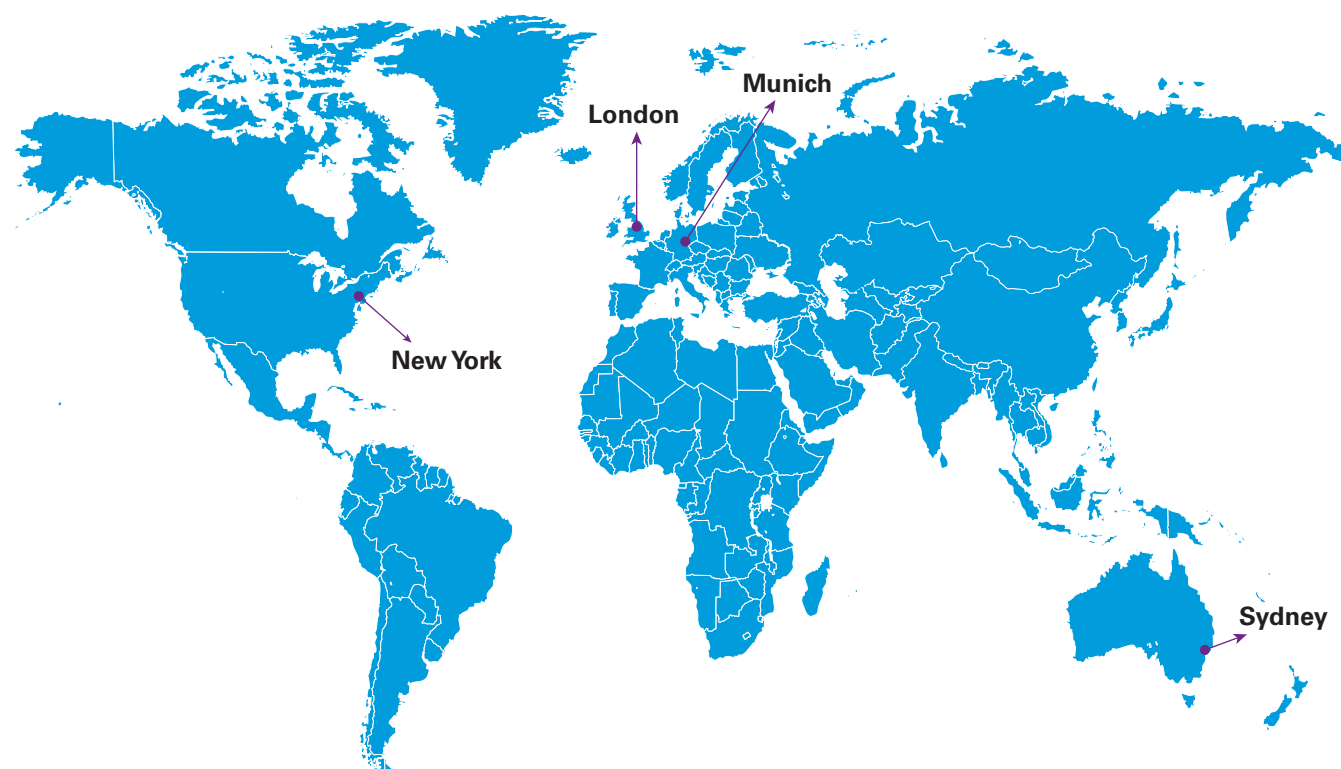
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Dynamic Risk Assessment Centers of Excellence, serving clients across the globe



*The Dynamic Risk Assessment (DRA) solution and Advisory services are not permissible for SEC and US audit clients and their affiliates.

About KPMG — corporate information

KPMG is a global network of professional services firms providing Audit, Tax and Advisory services. We operate in 155 countries and have 174,000 people working in member firms around the world.

Financials and organization

FY15

Combined global revenues

\$24.44

US\$ in billions

Growth

8.1%

In local currency

People

173,965

People growth

7.4%

*FY14 revenues: US\$24.82 billion. The relative strength of the US dollar impacted FY15 global revenues when expressed in US\$.

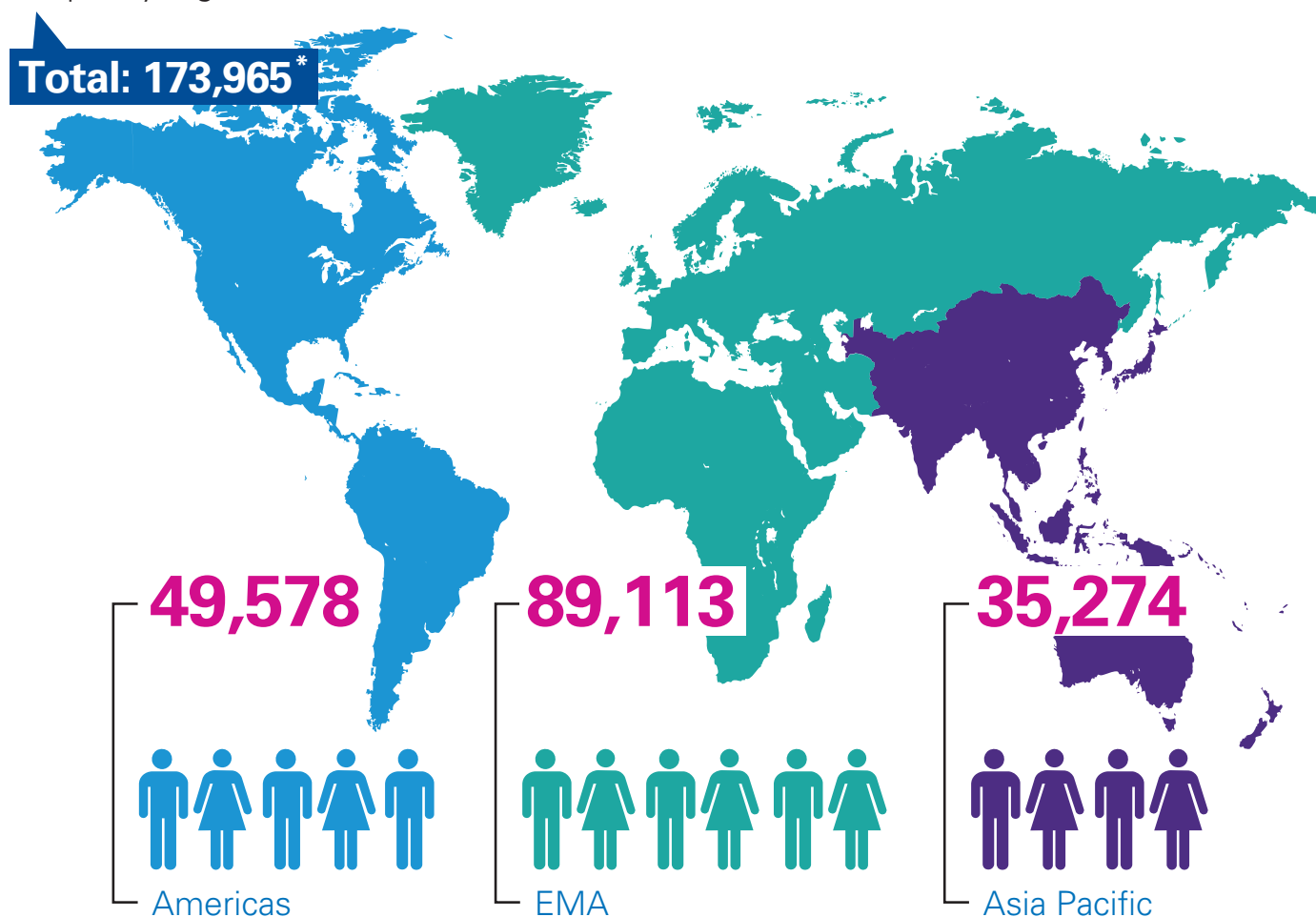
**FY15 commences 1 October 2014 to 30 September 2015.

“Quality, clients, innovation, talent and community.
Focusing on these with passion, purpose and
perspective has a measurable impact for member firm
clients, our people and the world.”

Extraordinary talent

In FY15, KPMG's global workforce grew by more than 7% to almost 174,000 partners and staff, the highest number of individuals ever employed across the network.

People by region



*Total headcount figures are expressed as full-time equivalent (FTE) and are based on average headcount for the financial year

352 new external
hire partners joined

643 newly-promoted
KPMG partners — the largest
partner class the KPMG network
has ever had



A record-breaking...

24,000
new graduates joined
KPMG member firms



2,500 KPMG professionals
took part in our

GO global mobility program, taking on
assignments in more than 95 countries

Empowering our communities

The Millennium Village Project was launched in 10 Sub-Saharan African countries to enable and facilitate communities to achieve the Millennium Development Goals.

In 2008, KPMG firms began their involvement with the community of Kiuyu Mbuyuni, Tanzania, providing investment in excess of US\$2 million.

Millennium Village Project in Kiuyu Mbuyuni, Tanzania



School attendance
reaching 68%



Over 90% of the village now has
access to safe and clean water



Reforestation with over
300,000 trees and
mangroves planted



Over 3,000 villages work in
seaweed farming creating revenues
in excess of US\$3 million



Women's livelihoods
and handicrafts
are improving incomes



With the new maternity ward,
infant and child mortality are
reduced to zero in 2015

KPMG raised
US\$1.1million
to support the lives and communities affected
by the 2015 Nepal earthquakes.



Advancing sustainability

Net emissions
reduced by

10%
2010–2014



27%

of our total
purchased
electricity comes
from renewable
sources

For the fourth consecutive
year, KPMG named

**‘Sustainable firm
of the year’**

by International Accounting
Bulletin



Championing 'Living Wage'



KPMG in the UK recognized by
the Ethical Corporation Awards
for championing Living Wage,
winning the prestigious

**'Best Corporate/NGO
partnership' award**



Global sponsor of

**Enactus
World Cup,**

with student teams competing from

36 countries

KPMG Families for Literacy



has distributed
books to low-income
families in
12 countries.

Global Dynamic Risk Assessment Leadership



Andries
Terblanché

**Audit Partner,
KPMG Global Lead
for Dynamic Risk
Assessment**

Andries Terblanché is the Global Lead of Dynamic Risk Assessment, which he conceived, spent 10 years developing and is now scaling for use across KPMG's network of member firms.

Andries joined KPMG in 1984 and was admitted to the partnership in 1994 and has worked in the South African, New Zealand, Australian and UK member firms.

He advises on systemic risk to clients across industries such as banking and finance, insurance, aviation, energy retail, motor vehicle and natural resources.

Andries studied at New York University (Stern Business School), Hong Kong University of Science and Technology, Tsinghua University in China, and the universities of Pretoria and Witwaterstrand in South Africa.

Until his relocation to London in 2016, he was an Adjunct Professor of Risk and Actuarial Studies at the University of New South Wales in Australia, and a guest lecturer at the University of Technology in Sydney.

In 2015, nominated by New York University and the Hong Kong University of Science and Technology to become a member of the international honours society Beta Gamma Sigma in recognition of academic performance and his contribution to business.

In 2016, appointed 1 of 11 Senior Research Fellows to the Institute of Global Finance (IGF), joining a number of Nobel Prize winners and other prominent academics in recognition of his ground-breaking research on systemic risk. The IGF is the leading global academic institution on systemic risk and the subject of interconnectedness.



Roger
O'Donnell

**Audit Partner, Global
Head of Data and
Analytics,
Audit (D&A)**

Roger O'Donnell leads the development and execution of KPMG strategy in using data and analytics (D&A) in audit around the global network.

Roger works with global D&A leaders from KPMG member firms to identify, and help, audit teams create new capabilities in using data and analytics to improve audit quality and effectiveness.

An Audit Partner in the New York office of KPMG in the US, he has served multinational companies for the majority of his career, dealing with the global issues facing clients.

Deon
Minnaar

Partner,
Risk Consulting,
KPMG in the US

Center of Excellence, New York

Deon Minnaar is a Partner with KPMG in the US' Risk Consulting practice and has more than 20 years' experience in enterprise risk management, risk assessment and internal audit in a variety of industries. He is the Americas regional leader for Enterprise Risk Management (ERM) and Governance, Risk, and Compliance (GRC) services. He serves on KPMG's ERM/ GRC and Continuous Risk Assessment global steering committees and has assisted many organizations to implement their risk management and broader GRC programs, including technology enablement.

Brendan
Twining

Audit Partner,
KPMG in Germany

Center of Excellence, Munich

Brendan Twining is a Partner with KPMG in Germany's Financial Services practice and a senior member of the Global Risk Insights team. He has spent his career working in the financial services industry, and leads industry and client-specific workshops on the interconnection of risk arising from the globalization of the world economy. Brendan's clients have included financial institutions in the insurance, reinsurance, funds management and retail and investment banking industries. He advises them on risk management, mitigation strategies and regulatory compliance requirements.

Chris
Hall

Audit Partner,
KPMG in Australia

Center of Excellence, Sydney

Chris Hall is a Partner with KPMG in Australia's Risk & Regulation practice and former board member of KPMG in Australia. He is a financial services audit specialist, with significant experience in the banking, finance and funds management industries. He is a member of the Australian Auditing and Assurance Standards Board and the Institute of Chartered Accountants.

The power of four — article

Looking beyond conventional depictions of risk based on likelihood and severity, Dynamic Risk Assessment takes a four-dimensional view of risk that allows for the contagion effect of risks — one of the most significant learnings of the Global Financial Crisis.

In these turbulent times, companies need to approach risk assessment with fresh thinking and innovative solutions. Additionally, key stakeholders expect audit professionals to consider emerging business risks and independently assess how these should influence their audit focus.

As global organizations expand their reach beyond traditional geographic and sector boundaries, they not only create new opportunities, but also expose themselves to potential new risks. At the same time, businesses are being influenced by macro-economic, socio-political and other mega-trends not necessarily observed in the past.

In a world where economic volatility is the norm, and the past is no longer an indicator of things to come, disparate events can become inextricably linked. This makes assessing risk exposure especially difficult because risk is unpredictable and contagious, and connected globally within complex organizational structures.

Recognizing that past data and assumptions are severely limited in a world of developing technology,

emerging markets, climate change, growing populations and other mega-trends that interact and shape our future, KPMG's audit professionals are continuously assessing ways of enhancing risk assessment techniques and methodologies.

A turning point

Have we reached a point in time where traditional, two-dimensional risk management methodologies that focus on single points of risk with high likelihood and severity may be limiting in increasingly complex and global organizations?

Understanding an organization's risk interrelationships can be significantly improved if we find a way to identify potential risk contagion and reveal new insights.

Dynamic Risk Assessment is the key with which those deeper insights can be unlocked. It is an evolution in risk assessment that applies actuarial theories, sophisticated algorithms, mathematics and advanced data and analytics together in a KPMG proprietary (patent pending) methodology to

identify, connect and visualize risk in four-dimensions.

This view takes into consideration risk interconnectedness and the velocity with which risks can impact business operations. Combining the latest in applied science with insights from management and extensive benchmarking, DRA modelling allows our audit professionals to see where risks can be expected to form critical clusters or trigger 'contagion' with other risks.

By exposing the expected contagion effects between global and enterprise risks, we objectively measure the genuinely significant threats.

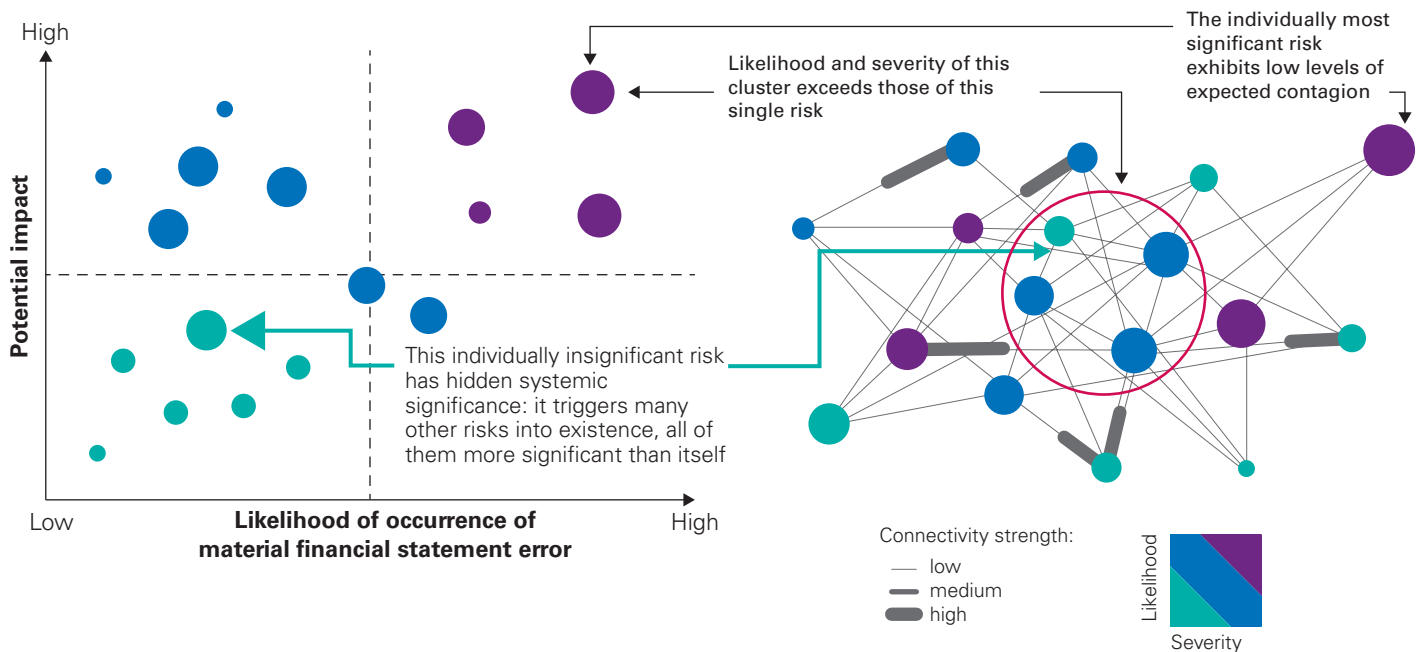
These fresh insights arm our audit professionals with new levels of risk assessment that can help enhance audit quality. They will also be able to provide clients with new insights that they may use to drive more-informed decisions within their organizations about how best to tackle and monitor these threats.

Focusing on systemic business risks helps produce better audit evidence, reveals new insights and enhances audit quality.

Dynamic Risk Assessment takes a four-dimensional view of risk

Traditional, two dimensional risk map

Inter-connected view



Contact us

Need more information?
Want to speak with a subject matter expert?

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Designed by Evalueserve.

Publication name: KPMG's Dynamic Risk Assessment

Publication number: 133814-G

Publication date: October 2016