

# Introduction to ECRI



An initiative of the  
World Economic Forum



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President and Managing Director  
ECRI

**ECRI**  
ENGINEERING &  
CONSTRUCTION  
RISK INSTITUTE

[WWW.ECRIONLINE.ORG](http://WWW.ECRIONLINE.ORG)

**“Raising the Bar in Risk Management”**



## ECRI – Who we are

- **ECRI is an Organisation or Industry Body involved in education with respect to the identification and management of risk in the Engineering & Construction Industry.**
- **ECRI is impartial and does not dictate or recommend the risk management practices and processes of any specific company.**



## ECRI – What we are

- **The Engineering & Construction Risk Institute Inc. (“ECRI “) was incorporated in July 2005 as a legal entity organised and existing under the laws of the District of Columbia, USA as a not-for-profit Corporation.**
- **ECRI is an independent organisation with legal authority vested in the Board of Directors – and governed by the normal Company Articles of Association and Charter.**
- **With a Non-Executive Chairman**





## ECRI – Our vision

- **“ To institutionalise sound risk management in the Engineering & Construction Industry with the objective of improving the performance and predictability of large capital projects, consequently enhancing the long term health of the E&C community and the value added to its Clients “**



# **ECRI – Our Sponsors**

## **36 World-Class Companies**

- 
- **CH2M Hill**
  - **Lahoud Engineering**
  - **Heijmans**
  - **Godrej**
  - **Peremba Group**
  - **Aveng**
  - **CCC**
  - **SNC-Lavalin**
  - **Group Five**
  - **KBR**
  - **Bechtel**
  - **MANFerrostaal**
  - **Larsen & Toubro**
  - **Bateman Engineering**
  - **Shaw E&C**
  - **Petrofac**
  - **Parsons Brinkerhoff**
  - **Lurgi**
  - **IMPISA**
  - **Washington Group**
  - **Fluor**
  - **Skanska**
  - **Hochtief**
  - **Hindustan Construction**
  - **Obayashi**
  - **Murray & Roberts**
  - **Karl Steiner**
  - **AMEC**
  - **Saipem**
  - **ICA**
  - **Inelectra**
  - **Litwin**
  - **Foster Wheeler**
  - **Basil Read Construction**
  - **Kentz**
  - **Tecnicas Reunidas**



## ECRI – How did it all get started

- **ECRI originally started out as an Initiative of The World Economic Forum “WEF “**
- **In 2003, WEF identified significant forward issues**
- **In 2004, WEF Board of E&C Governors commissioned a report on Risk in the E&C Industry – root causes and actions / solutions**
- **At the 2005 WEF Meeting in Davos, 17 companies of the E&C community committed to providing financial and human resources to create the Engineering & Construction Risk Institute or “ECRI“**
- **ECRI was then incorporated in July 2005**



## **ECRI – The cost of undermanaged project risk**

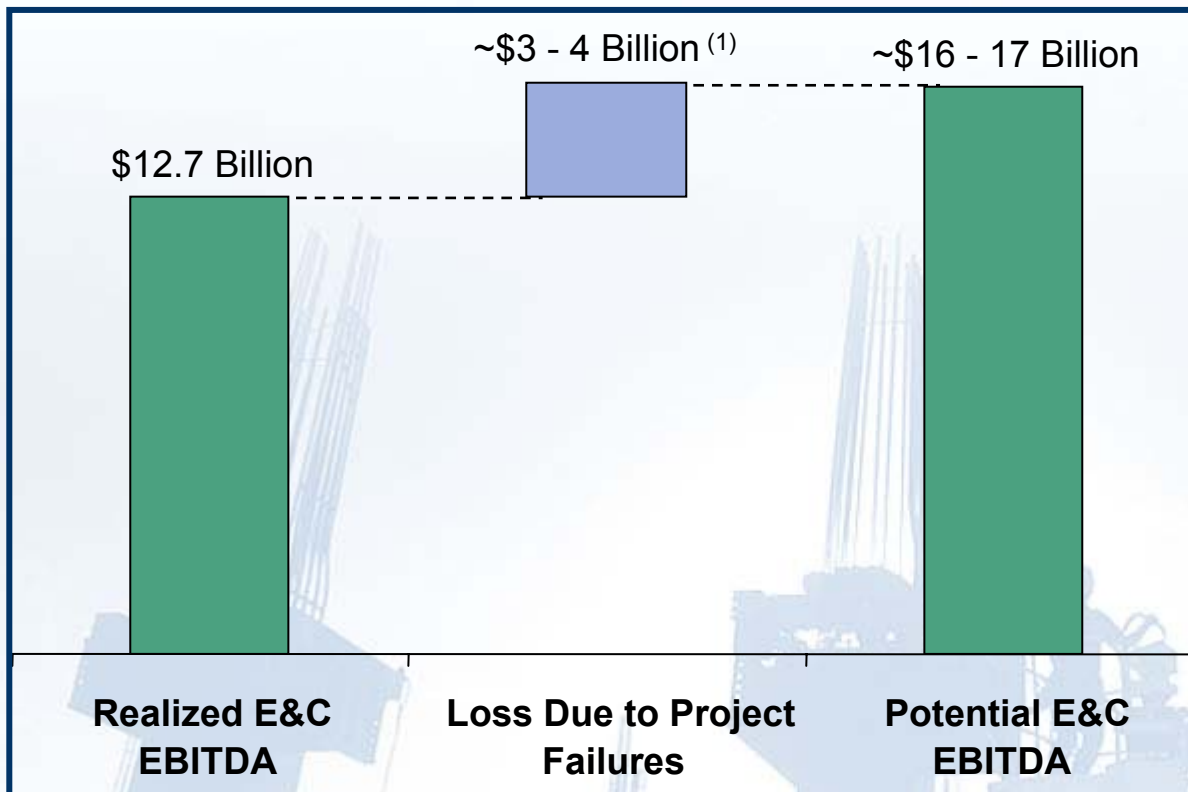
- **Billions of dollars lost in profit by both the E&C Industry and its Client base due to lack of proper or adequate risk management.**
- **The Financial Markets had become disenchanted with the Industry.**
- **Trend of shrinking profitability due to inadequate risk management was structural, global and had accelerated over the past five years.**
- **Effect - decreased capital availability to the Industry resulted in low reinvestment in people / processes with a notable reduction in number of sustainable E&C companies.**





## “Under-managed” project risk is costing the E&C industry ~\$3 - 4 Billion annually in profits

### 2002 Global Realized vs. Potential Profits



#### Key Observations

- \$200 – \$270 billion industry wide revenue would be needed to make up for lost profit
- Clients' exposure is on a similar order of magnitude

Source: Datamonitor, Factset

Engineering News Record and industry expert estimates of project failure rates

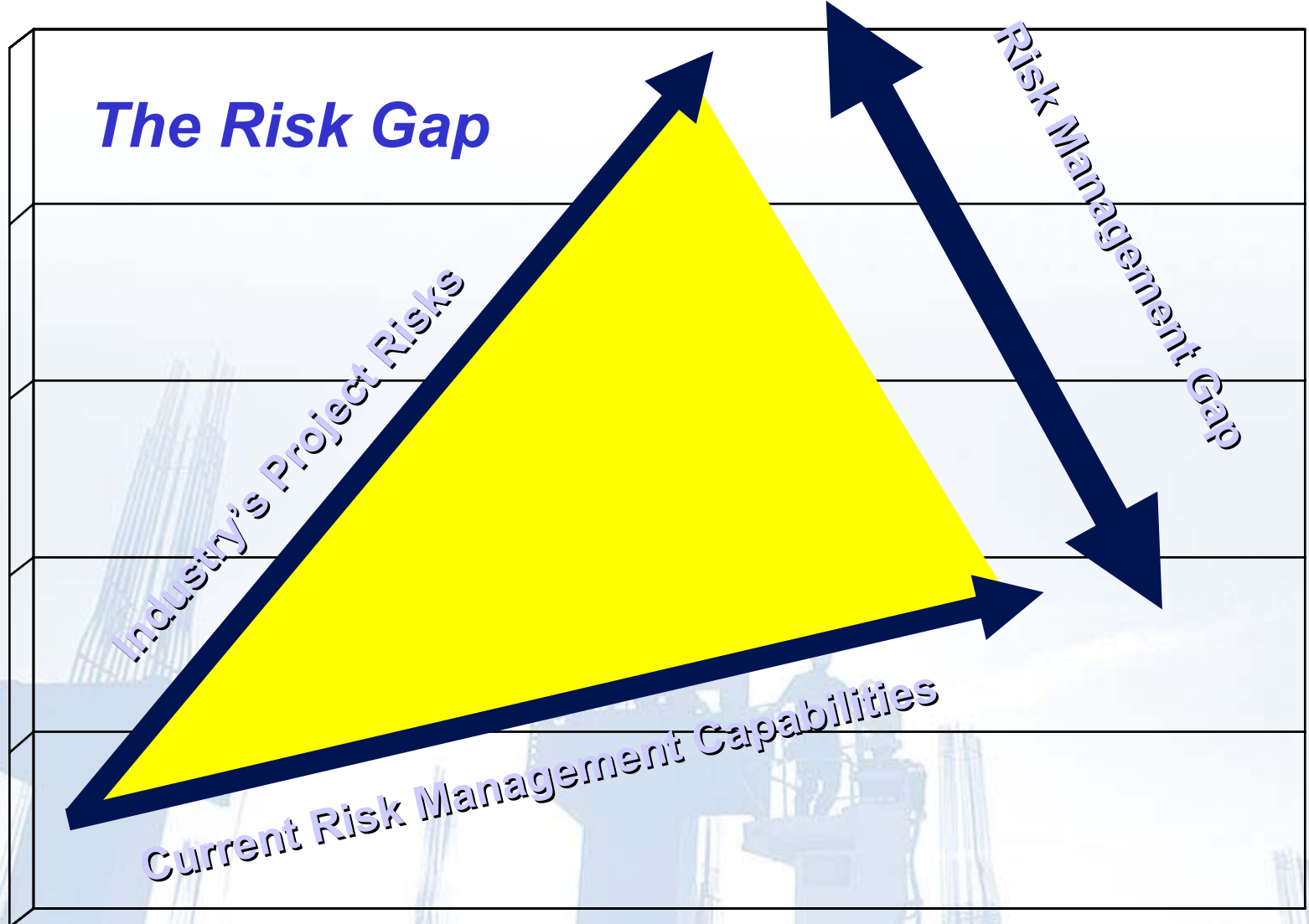
Note: 1) Analysis based on 2002 data. Cost of project failure is the cumulative variance between estimated profits and realized profits. It includes margin shortfalls which could be addressed by improved risk management for an estimated share of 20% - 25% projects. EBITDA margin of 1.5% is used to describe the average project profitability

2) Prepared in cooperation with AT Kearney and the World Economic Forum



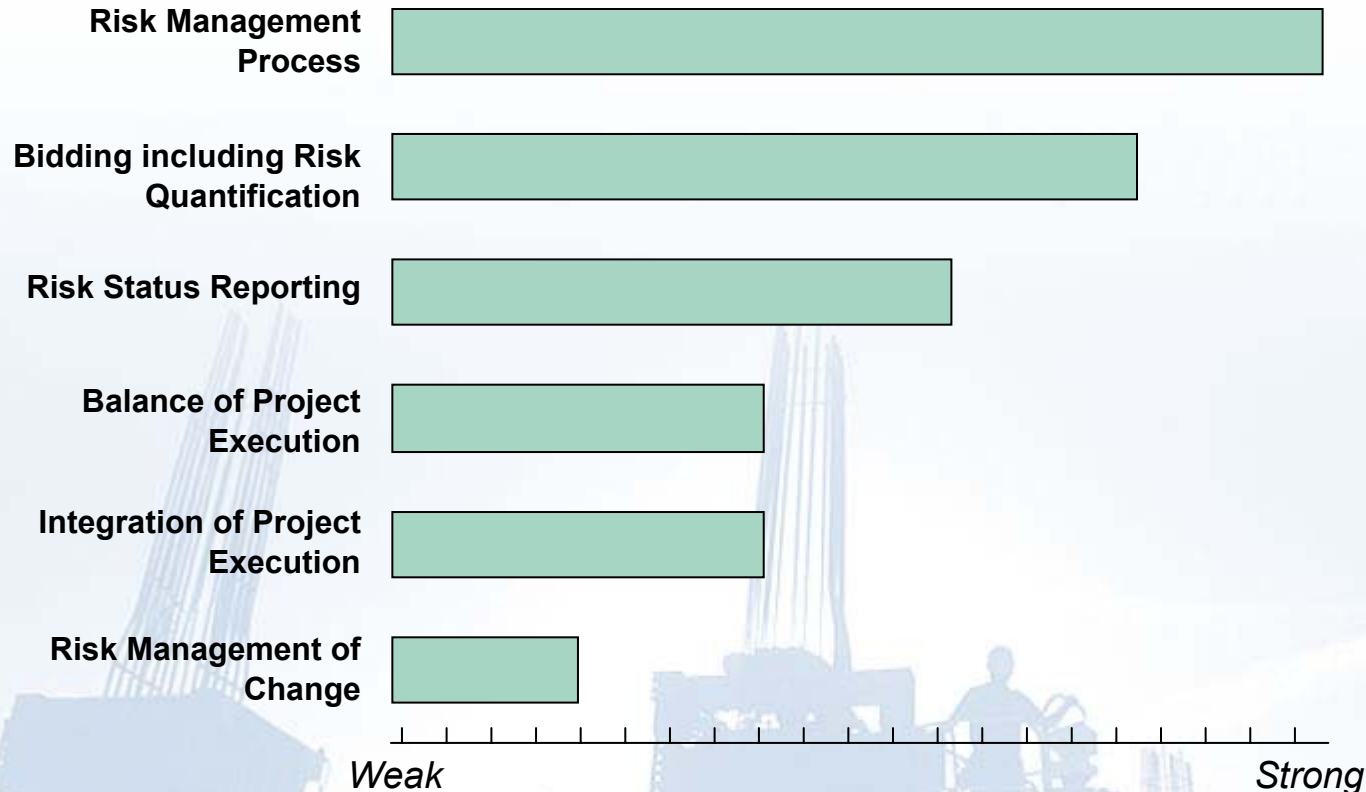


## *The Risk Gap*





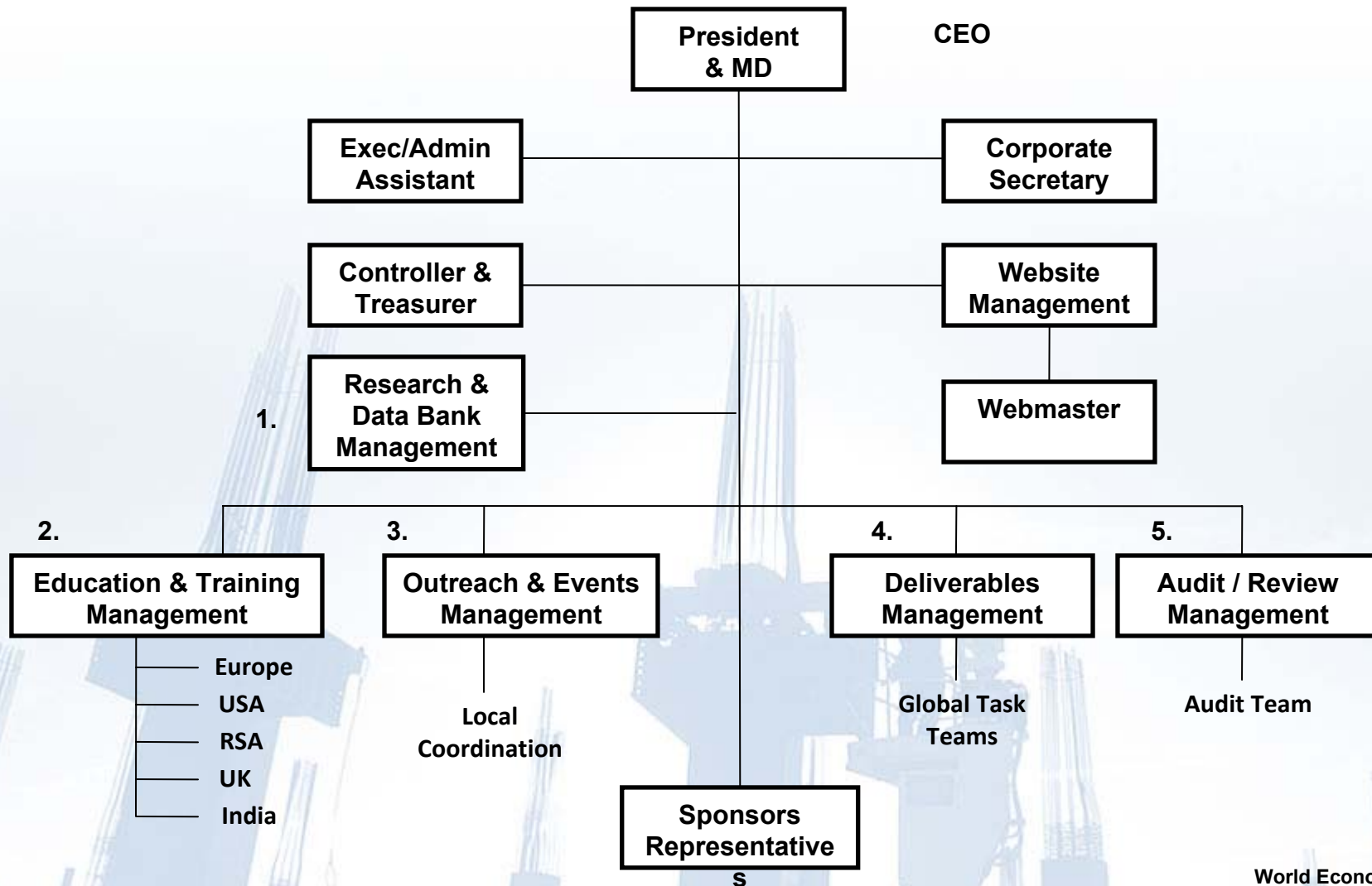
## ECRI - Risk management in the E&C industry – the issues



Feedback from the E&C Industry indicates that despite widespread existence of written risk management processes and procedures, actual risk management declines dramatically as a project progresses and is often not well integrated with project execution or applied to contract changes when it is most needed.



## ECRI – How we are organised







## **ECRI – What we do**

- **Provide a library of ECRI Standards, Processes and Best Practices.**
- **Sponsor the Global Task Teams as Deliverables Development Groups.**
- **Sponsor Risk Meetings, Workshops and Forums.**
- **Provide an E&C Risk Data Bank / Clearing House.**
- **Provide an E&C Industry Platform for outreach to Client companies with Joint Forums and Workshops.**
- **Work with Insurance / Bonding / Legal Industries and Finance Community**



## ECRI – What we do

- **Liaison with Academia and other industry bodies such as ISO, DNV, PMI, CII, ECI, AMP and IRM.**
- **Identify and publicise Emerging Risks.**
- **Internal review / audit of Sponsors RM processes and Project applications.**
- **Benchmark Sponsors RM processes against peer group and Best Industry Practices.**
- **Developing awareness and practices for Portfolio and Enterprise Risk Management.**



## **Risk Data Bank / Clearing house**

- **Directory of Risk Organizations.**
- **Risk Publications Library – Index.**
- **Risk Manager’s Bulletin Board.**
- **Information on Emerging Risks.**
- **Calendar of Global Risk Events.**
- **Directory of Risk Management Software.**
- **Directory of Risk Management Consultants.**
- **Risk related Links to Academia.**
- **Suppliers Risk Management Processes.**
- **Industry Profitability / Sponsor Statistics.**





## ECRI How we do it – Global teams and deliverables

### Risk Quantification

- Risk Event Contingency

### Terms and Conditions

- Contract Critical Issues
- Impacts on Project Execution
- Model Contracts

### Project Finance/ Development

- Development Risks
- Project Screening

### Risk Financing

- Insurance
- Bonding
- Project Securitisation

### Risk Management Best Practices

- Risk Management Process
- Risk Identification
- Risk Breakdown Structure
- Risk Process Coordination

### Change Management

- Change Impact Assessment
- Change Management

### Joint Ventures

- JV Formation
- JV Risk Allocation/ Methodology

### Risk Based Audits

- Risk Process Audit
- Project Risk Audit



## **ECRI – New deliverables and initiatives in 2008**

- **1. Structured approach to Post-Mortems, Project Close-Out and Lessons Learned.**
- **2. Summary of Most Frequently Occurring and / or Most Important Risk Items / Categories.**
- **3. Dashboard Methodology for Real-Time Tracking of Project Risks.**
- **4. Definition and Checklist for Contingency and Risks of Event-Driven Contingency.**
- **5. Risks associated with BOO / PPP / BOOT.**
- **6. Portfolio and Enterprise Risk Drivers in the E&C Industry .**



## **ECRI – New deliverables and initiatives in future**

- **Major Contract Model Forms – Lessons Learned / Key Watchwords.**
- **Project Team Risk Awareness through Job Instructions or Project Coordination Procedures.**
- **E&C Risk Managers Training Modules – ECRI Risk Academy.**





## **ECRI – Future direction and strategy**

- **Our long term Strategy is still evolving**
- **Enhance our Client / Industry Outreach Programme**
- **Continue to expand Sponsorship to further broaden Geographic and Industry / Product Line base**
- **Near-term emphasis on expanding Far East Sponsorship**
- **Examine groupings of specific Industry Sectors / Product Lines**
- **Examine additional categories of membership as part of overall Industry Outreach Programme**



## **ECRI – Future direction and strategy**

- **Continue the work of Global Task Teams with updates and New Deliverables / Initiatives**
- **We will fully develop Best Practices for Portfolio and Enterprise Risk Management in the E&C industry**
- **Continue to implement Regional Sponsors and Joint Risk Management Meetings and Workshops**
- **Continue to expand the Risk Management Information / Clearing Houses**
- **Expand review / audit methodology and Risk Audit programme for Sponsors**
- **Implement Risk Training Programme & Modules – ECRI Risk Academies**



**ECRI**

## At ECRI – We are raising the Bar in Risk Management







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