September 2017

# *The 'Cyber-Aware' ORMF*
# Our point of view

pwc.co.uk/cyber

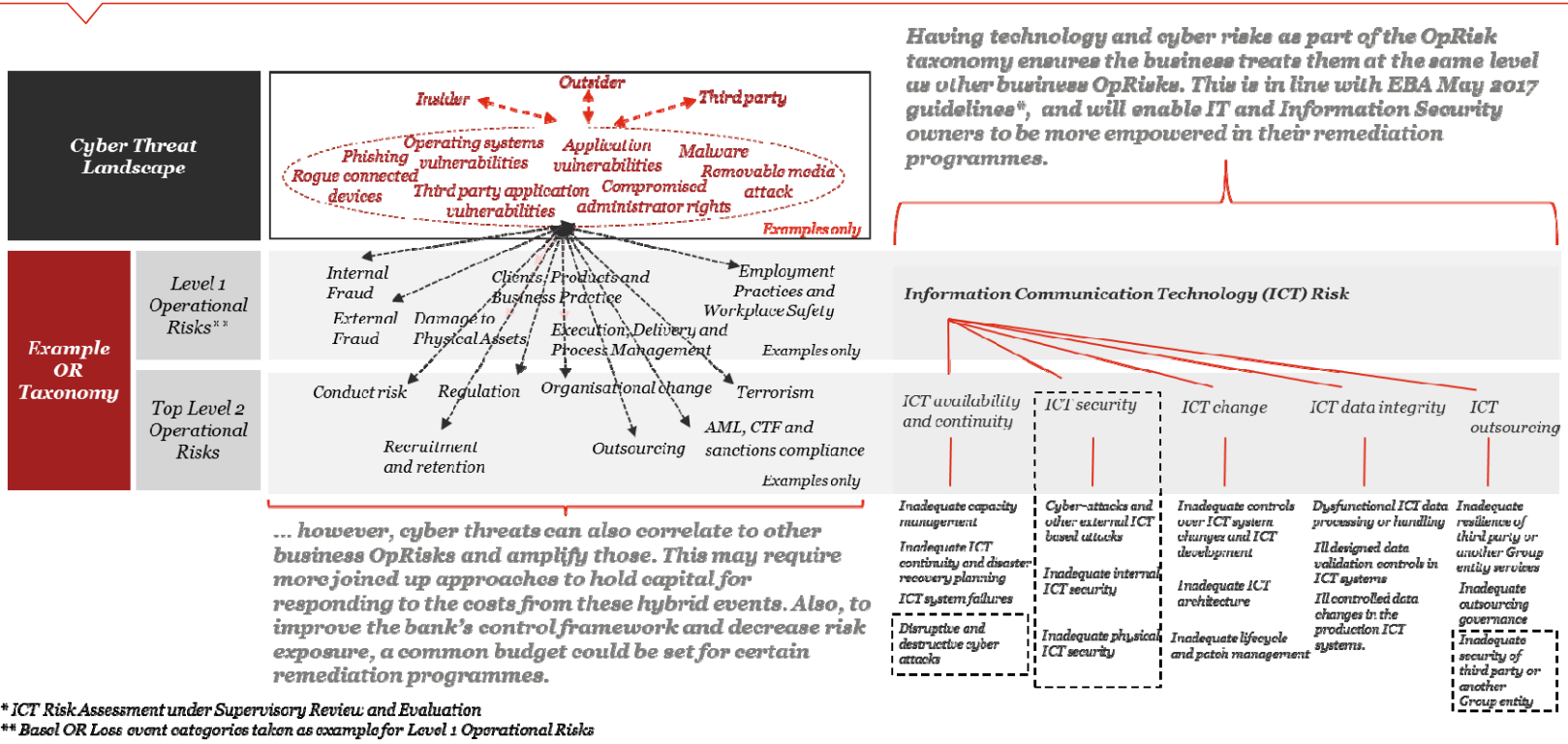
# Why build a ‘Cyber-Aware’ ORMF, quantifying cyber risk?

1. Ensure that the Operational Risk (OpRisk) appetite is backed by ongoing **quantification** of cyber risk exposure, considering also how they correlate to and **amplify exposure of other OpRisks**

2. Use the quantification of cyber risk exposures in your **decision-making to prioritise investments** in mitigation (e.g. cyber resilience programmes, cyber insurance)

3. **Communicate to your stakeholders** (internal, 3rd party partners, customers, shareholders and regulators) that you understand and have appropriately assessed your Cyber Risk exposure in line with **changing regulations** and industry good practice

# Cyber risk is a stand-alone OpRisk but can also amplify other business OpRisks




* ICT Risk Assessment under Supervisory Review and Evaluation

** Basel OR Loss event categories taken as example for Level 1 Operational Risks

# Cyber risk exposure vs risk appetite: stand-alone and correlated

| | *Risk Appetite* | | | *OpRisk Exposure* | | | *Cyber-OpRisk Exposure* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Example Level 1 operational risk types* | *Qualitative* | *Quantitative* | | *OpRisk Scenarios Exposure* | *Risk and Control Self-Assessments Exposure* | *OpRisk Events/Incidence Exposure* | *Cyber Threat Ref#* | *Cyber Scenario Ref#* | *Likelihood* | *Financial Impact* | *Exposure* |
| | | *Cumulative loss Tolerance* | *Individual material loss threshold* | | | | | | | | |
| **Internal Fraud** | Low | £500k | £100k | £1m | Low | £50k | 12,13,16 | 1,2,3,4 | Medium | £1m | High |
| **External Fraud** | Low | £500k | £100k | £1m | Low | £20k | 12,15,17,20,21,22 | 5,6,7 | High | £1m | High |
| **Clients, Products and Business Practice** | Medium | £1m | £200k | £1m | Medium | £150k | 12,17,19 | 8,9 | Medium | £1m | Medium |
| **Business Disruption and Systems Failures** | Low | £500k | £100k | £5m | Low | £70k | 14,1,17,18 | 10,11,12,13 | High | £5m | High |
| **Execution, Delivery and Process Management** | Low | £500k | £100k | £5m | Low | £80k | 17,18,19 | 14,15,16 | High | £5m | High |
| **Damage to Physical Assets** | Medium | £1m | £200k | £1m | Medium | £130k | 18,21,35 | 17,18 | Low | £1m | Medium |
| **Employment Practices and Workplace Safety** | Low | £500k | £100k | £200k | Low | £60k | 25,27,47 | 19,20 | Low | £200k | Low |
| **Cyber** | Medium | £1m | £200k | See Cyber-OpRisk Exposure columns | Medium | £140k | All | 21,22,23,24 | High | £14.2m | High |

# Cyber risk is an operational risk and managed as part of ORMF

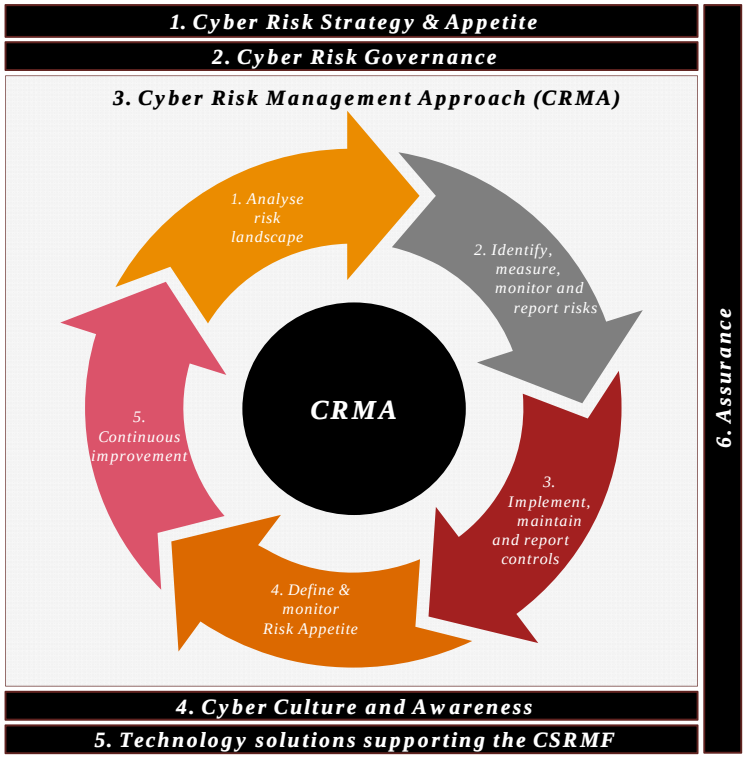

ICT Operational Risks (SREP EBA, May 2017)

- Cyber/ information security (i.e. 'Cyber Risk')
- Change
- Data Integrity
- Third Party / Outsourcing
- Availability and Continuity

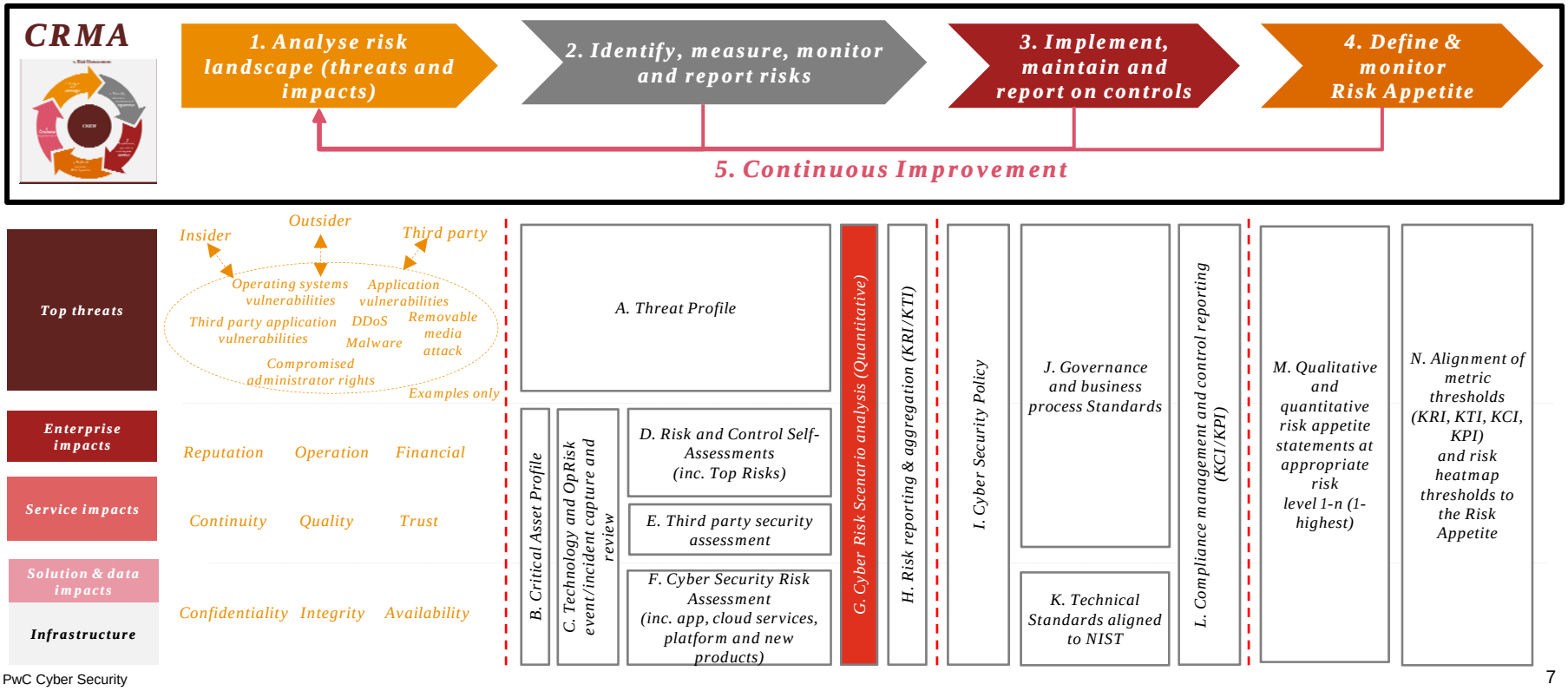
Other Business OpRisks (examples)

- Internal Fraud
- Conduct
- Compliance
- External Fraud
- Employment Practices and Workplace Safety
- Operational Failures

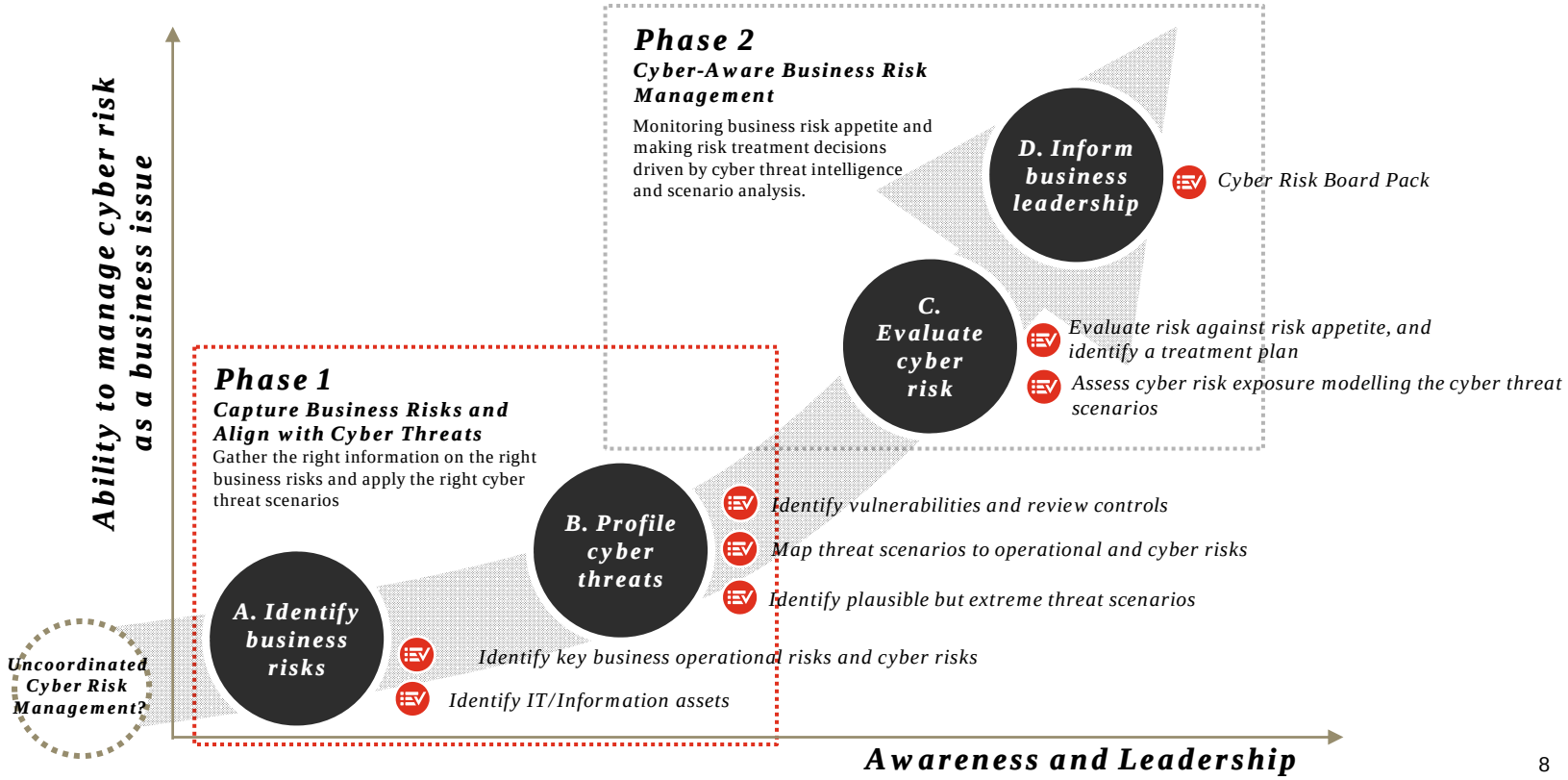
# Example Cyber Risk Management Framework (CRMF)



# Example Cyber Risk Management Approach (CRMA)



# Approach to establish the Cyber-OpRisk exposure to the business

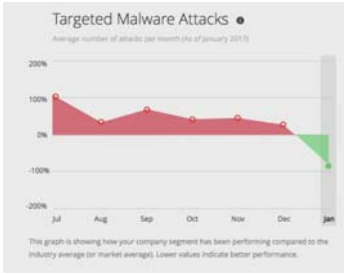


# Cyber Risk Quantification Tool powered by Symantec™

| Company Analytics |
| --- |
| Company Specific Business Information |
| Specific External Cyber Security Metrics |
| Aggregated Internal Security Metrics |
| Company Specific Cyber Security Scenarios |
| Deep Dive Questions to increase precision |

**1. Company Specific Assessment**


**2. Historic Cyber Security Metrics**




**3. List of Cyber Risk Scenarios**


| *Extensive company coverage* | Readily available quantitative data on companies | Insight to drive qualitative assessments and drive more business |
| --- | --- | --- |
| **200,000+**<br>Companies with enhanced underwriting data | **200+**<br>External Cyber Security Metrics | **430+**<br>Deep Dive Questions available in dynamic questionnaire |
| **7 Million**<br>Companies with standard underwriting data | **200+**<br>Internal Cyber Security Metrics | **23**<br>Cost Center Specific Sections |
| **130 Million**<br>Domains with basic IT and security data | **100**<br>Cyber security scenarios with sized financial impacts for your clients | **90%**<br>Faster Decision making, in some cases |