IBM Performance 2012
Smarter Analytics. Smarter Outcomes.

IBM

Chris Catteau - Enterprise Sales – OpenPages

Con Cotronis - Principal Solutions Professional - OpenPages

Using an enterprise Governance, Risk & Compliance (GRC) platform to improve risk and compliance initiatives

Risk awareness needs to be embedded in the culture of the organisation and the responsibility of all employees

The Japanese Nuclear Commission set this goal in **2003**:

"The mean value of acute fatality risk by radiation exposure resultant from an accident of a nuclear installation to individuals of the public, who live in the vicinity of the site boundary of the nuclear installation, should not exceed the probability of about $1x10^6$ per year (that is, at least **one per million years**)".

Sources: http://fooledbyrandomness.com/notebook.htm

Japanese Combined Earthquake/Tsunamis

195 recorded over 1,313 years

Average one every 6.73 years

| YEAR	LOCATION	CASUALTIES
684	Hakuho	
869	Sendai	1,000
1293	Kamakura	23,000
1361	Shōhei Nankai	660
1498	Meiō Nankai	40,000
1605	Keichō Nankaido	5,000
1707	Hōei	30,000
1771	Yaeyama Islands	12,000
1792	Mount Unzen	15,000
1854	Ansei	80,000
1855	Edo, Japan	10,000
1896	Meiji Sanriku	27,000
1923	Kanto	100,000
1933	Showa Sanriku	3,000
1946	Nankaidō	1,500
1983	Sea of Japan	103
1993	Okushiri, Hokkaido	200
2004	Asian Tsunami	230,000

Sources: www.citypictures.crg

The Costa Concordia capsized in January 2012 off the Tuscan coast of Giglio, when it struck the 80-ton rock that lay within a submerged reef.

Captain Francesco Schettino is accused of altering the course of the ship so that it sailed close to the picturesque coast in a bid to impress passengers and crew, as well as locals waiting on a nearby island.

The 114,000-tonne liner will be removed from its resting place in what has been described as an "unprecedented" procedure. It is expected to take up to a year and cost more than $300million. It will be towed to a dry dock where it is expected to be scrapped

GRC – Facilitating risk awareness
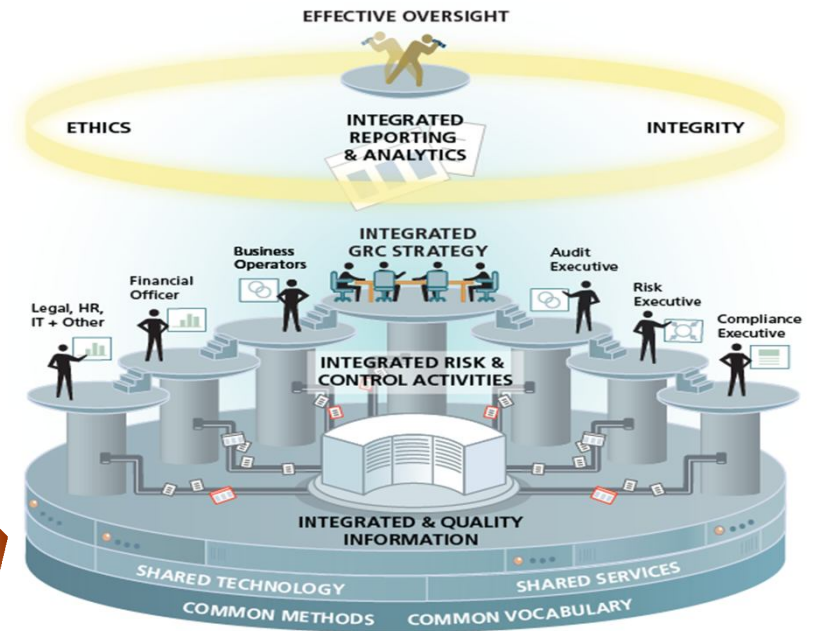
Source: *GRC Maturity: From Disorganized to Integrated Risk and Performance*, Corporate Integrity, 03/12

Session objectives

In today's session we will cover:

- IBM Risk Offerings - What and who is IBM OpenPages?
- Fragmentation of risk
- Changing regulatory environment
- Growing demand for greater transparency into risk exposure
- Challenges faced by risk and compliance managers
- Strategies for advancing GRC maturity
- Benefits of an integrated GRC platform

IBM OpenPages

- OpenPages forms part of the "Risk" Pillar of Business Analytics (BA) group within IBM Software Group

- Industry leader in enterprise governance, risk and compliance   **GRC**

- Global and local success

- 300+ GRC customers worldwide;

- Deep domain expertise

- Flexible product architecture

- Patent protected technology

RED HERRING 100 WINNER N. AMERICA

RISK TECH 100

OpRisk & Compliance

#1 Compliance Monitoring

Leadership Category

Gartner **FORRESTER** **Chartis**

9

Recognised Enterprise GRC Platform Market Leader

Gartner.

Magic Quadrant for EGRC Platforms
July 2011

IBM Tops RiskTech100

RiskTech100® Rankings 2011

Chartis

Rank 2011	Rank 2010	Company	HQ	Total Score	Functionality	Core Technology	Organizational Strength	Customer Satisfaction	Market Presence	Innovatic
1	7	IBM	US	69.8%	79%	73%	65%	63%	72%	67%
2	1	SunGard	US	66.8%	76%	63%	70%	60%	71%	61%
3	2	SAS	US	65.8%	77%	74%	63%	58%	62%	61%
4	9	Oracle	US	63.3%	70%	72%	61%	57%	60%	60%
5	6	Moody's Analytics	US	62.5%	61%	64%	64%	62%	62%	62%
6	8	Wolters Kluwer FS	US	62.0%	63%	56%	69%	61%	63%	60%
7	17	Misys	UK	61.7%	68%	59%	62%	59%	62%	60%
8	4	Fiserv	US	61.3%	62%	58%	69%	63%	61%	55%
9	5	MSCI	US	61.3%	59%	53%	69%	63%	63%	61%
10	12	NICE Actimize	US	60.3%	60%	59%	62%	58%	61%	62%
11	15	Murex	France	57.5%	58%	57%	61%	60%	57%	52%
12	16	SAP-Sybase	Germany	57.3%	57%	68%	59%	52%	58%	50%
13	10	Thomson Reuters	US	57.2%	55%	64%	54%	58%	58%	54%
14	11	Numerix	US	56.8%	48%	48%	56%	67%	60%	62%
15	27	OpenLink	US	56.3%	56%	56%	60%	59%	54%	53%
16	-	Detica Netreveal	UK	55.8%	56%	55%	56%	56%	56%	56%
17	19	Calypso	US	55.3%	50%	53%	60%	59%	56%	54%
18	30	MetricStream	US	54.8%	55%	59%	52%	55%	53%	55%
19	26	BWise	Netherlands	54.7%	54%	53%	55%	56%	57%	53%
20	22	QuIC-Markit	Canada	54.7%	58%	61%	49%	59%	43%	58%

11

Reference Sites - Proven by the World's Leading Companies

Financial Services

Insurance

Manufacturing

Energy and Power

Retail/Consumer

Australia

Health Services / Pharmaceuticals

Companies Struggle with Fragmentation of Risk and Compliance Information

CEO/CRO/CFO/CCO/CIO

Compliance Risk

Finance Risk

IT Risk

Credit Risk

Operational Risk

Market Risk

13
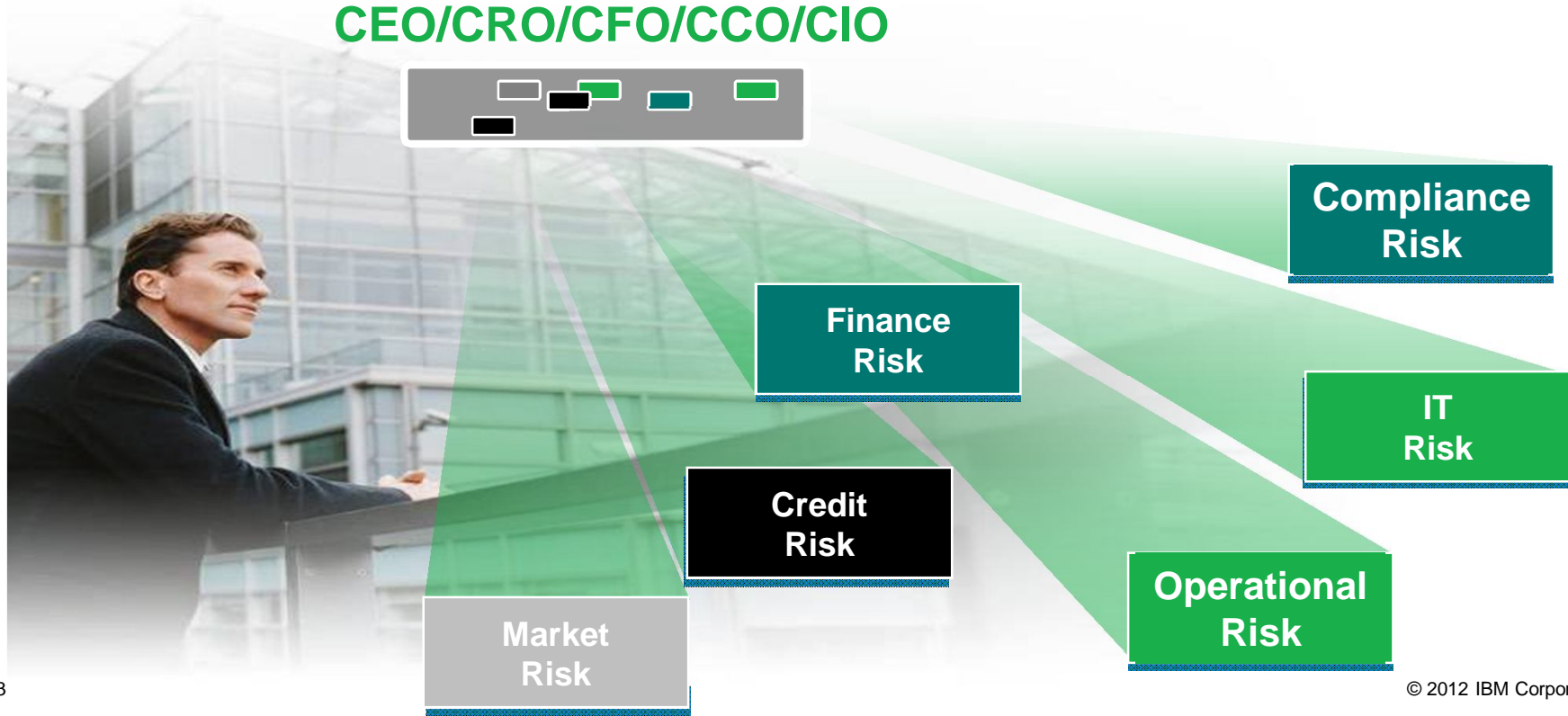
An integrated approach provides clear visibility at the top of the business

CRO/CFO/CIO/CCO

Cognos. software
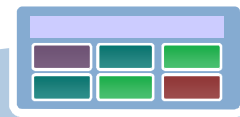
Financial Risk Management			Governance, Risk & Compliance (GRC)		
Algorithmics			OpenPages an IBM® Company		
Credit and Collateral Risk	Market and Liquidity Risk	Economic and Regulatory Capital	Operational Risk	IT Risk	Policy and Compliance
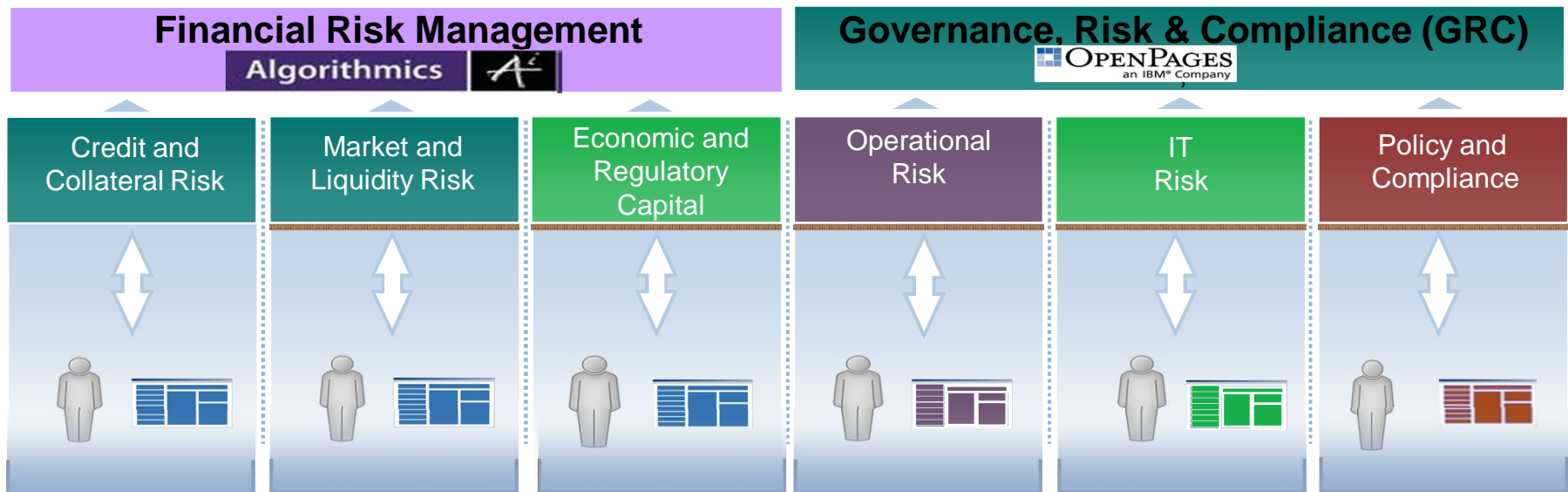
Industry risk profiles

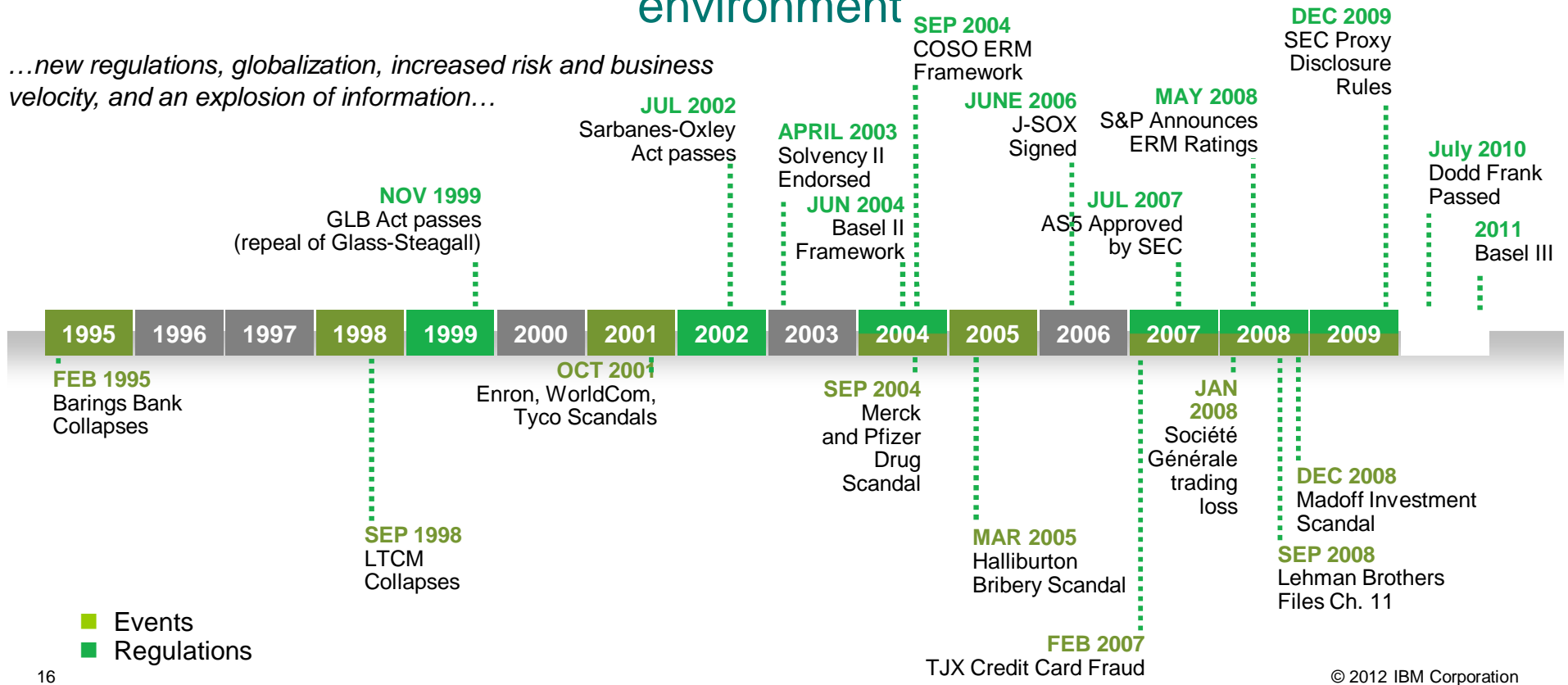Figure 27. Maturity of Risk Management and Risk Exposure Intensity Across Industries
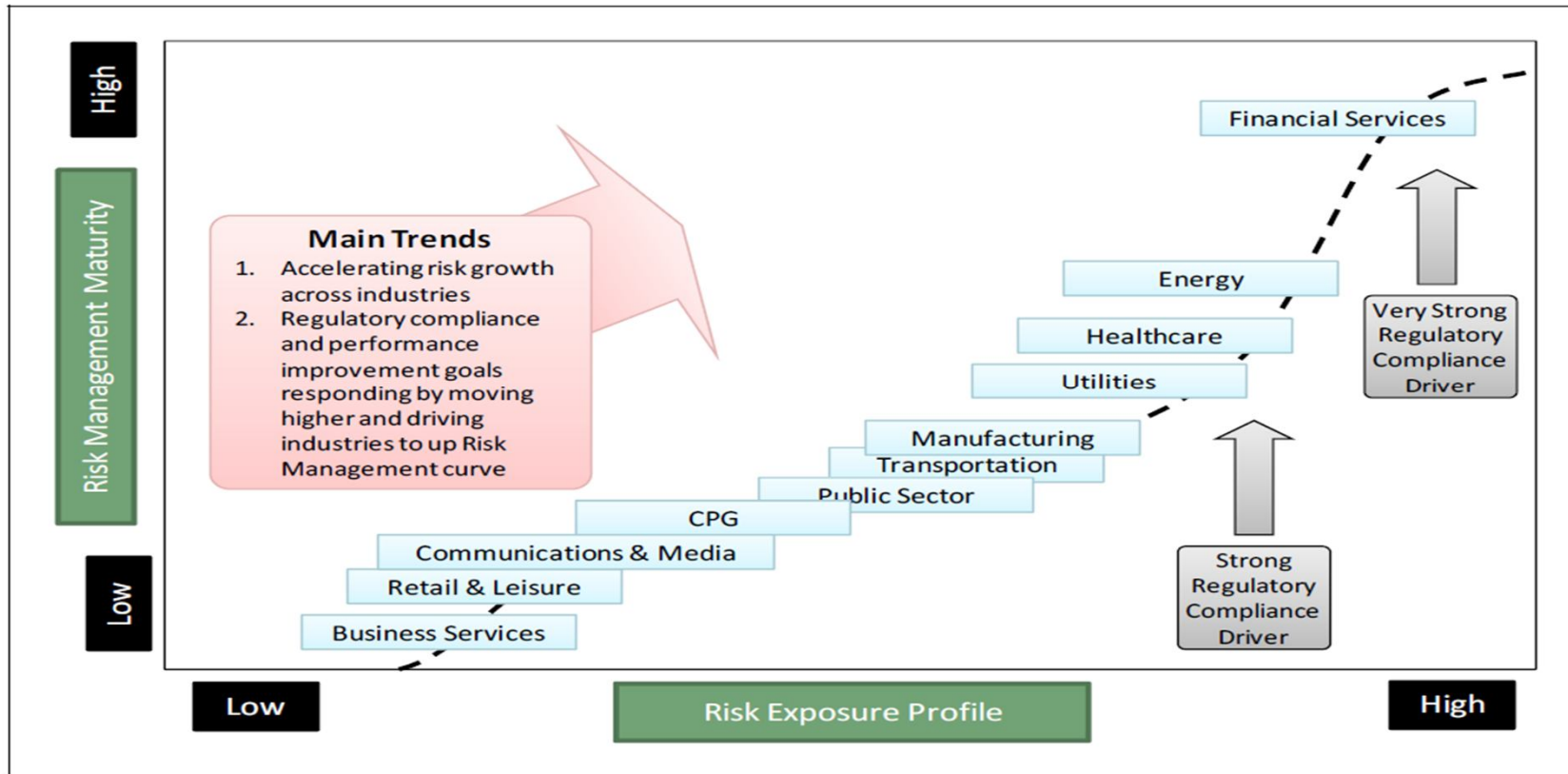
Source: *Global Consulting Marketplace 2010-2013*; Kennedy Consulting Research & Advisory

Risk has never been a bigger challenge than in today's business environment

…new regulations, globalization, increased risk and business velocity, and an explosion of information…

SEP 2004
COSO ERM
Framework

DEC 2009
SEC Proxy
Disclosure
Rules

JUL 2002
Sarbanes-Oxley
Act passes

JUNE 2006
J-SOX
Signed

MAY 2008
S&P Announces
ERM Ratings

APRIL 2003
Solvency II
Endorsed

July 2010
Dodd Frank
Passed

NOV 1999
GLB Act passes
(repeal of Glass-Steagall)

JUN 2004
Basel II
Framework

JUL 2007
AS5 Approved
by SEC

2011
Basel III

| 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |

FEB 1995
Barings Bank
Collapses

OCT 2001
Enron, WorldCom,
Tyco Scandals

SEP 2004
Merck
and Pfizer
Drug
Scandal

**JAN
2008**
Société
Générale
trading
loss

DEC 2008
Madoff Investment
Scandal

SEP 1998
LTCM
Collapses

MAR 2005
Halliburton
Bribery Scandal

SEP 2008
Lehman Brothers
Files Ch. 11

FEB 2007
TJX Credit Card Fraud

■ Events
■ Regulations

16

© 2012 IBM Corporation

CEOs believe that building better and more effective risk management is critically important for their enterprise

Importance of Risk Management

No	Limited focus	Significant Focus	
12%	12%	76%	Financial Services

Over the next five years, CEOs believe that risk management will be increasingly important

Many CEOs felt that risk management needs to be pervasive within the organizational culture and operating model of their financial institutions

Selected CEO quotes underscore the importance of risk management:

"For financial services, customer centricity and understanding risk are the key characteristics required to be successful."
                                        - CEO of major Thai Bank

"Before making decisions, we simulate both best and worst cases (benefits and risks) very quickly."
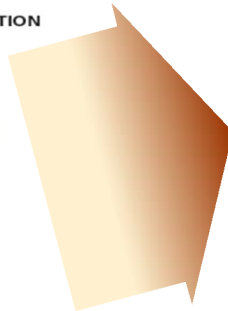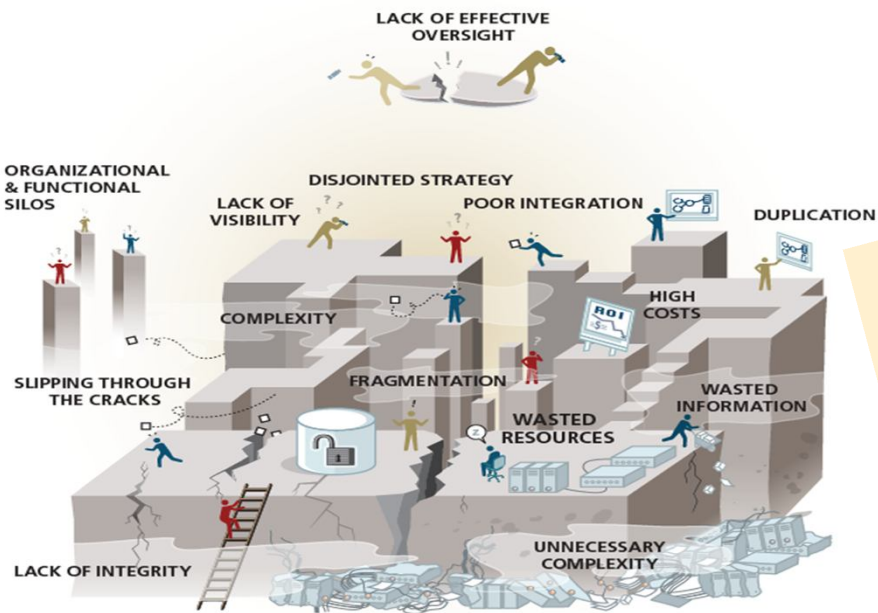   *- CEO of major Japanese Bank*

Source: IBM CEO Study, Capitalizing on Complexity, B&FM Industry Perspective, May 2010

Challenges

- Expensive
  - Costs of compliance is large and growing annually
- Cost of Non-compliance
  - Business disruption, fees, penalties, legal and settlement costs. Typically 3x the cost of compliance.
- SILO approach to management
  - Cost of duplicate efforts
  - Leaves significant risk of control weaknesses "falling through the cracks" resulting in reputational risk damage
- Difficult to respond to regulatory inquiries with accurate data
- New regulations doubling every six years
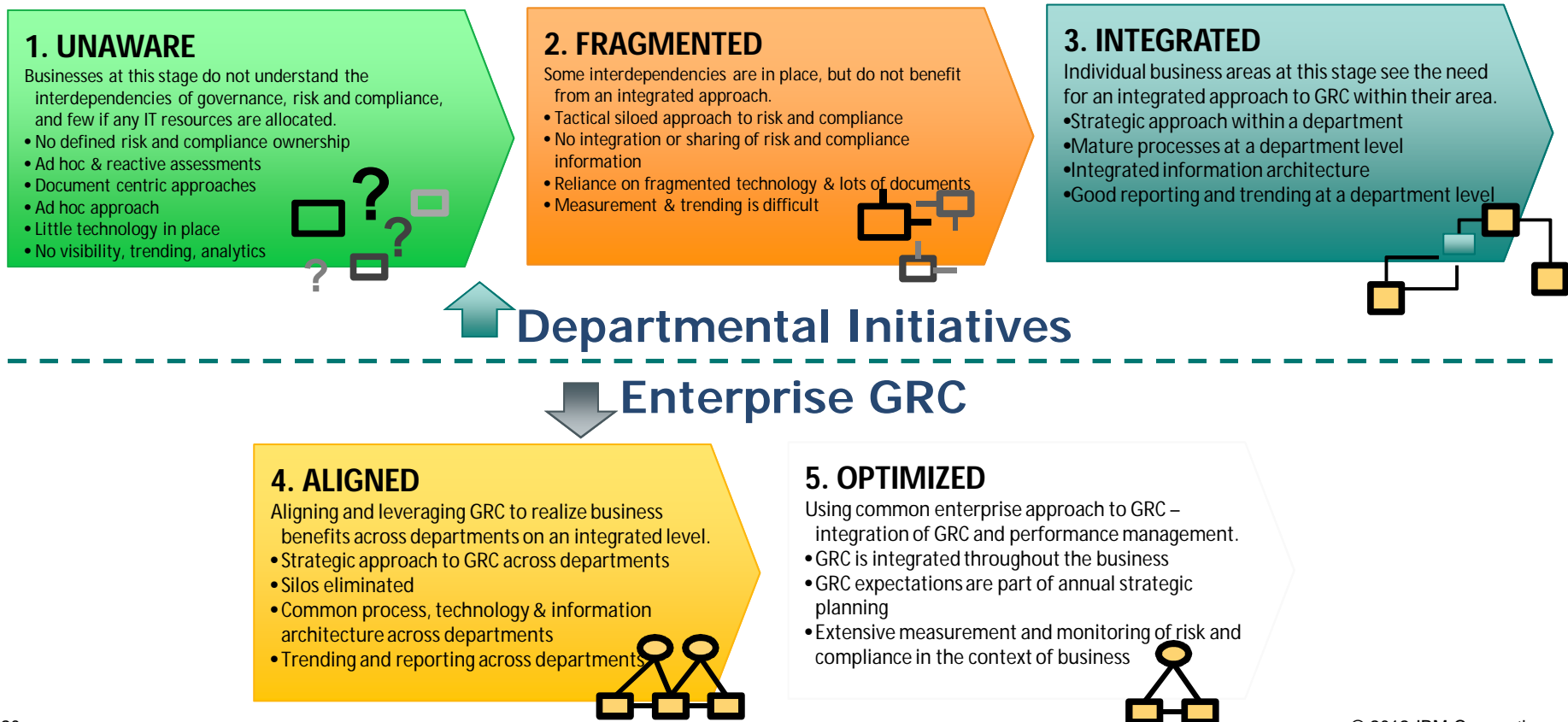- Reactionary response today – inefficient & contradictory

Current State: FRAGMENTED APPROACH   IBM

RISK & COMPLIANCE:

1.) is managed independently and in functional SILO's

Strategic Risk | Credit Risk | Market Risk | Liquidity Risk | Operational Risk | Compliance Risk | Internal Audit | Financial Reporting (SOX) | IT Governance | Business Continuity | IT Security Risk | Vendor Risk | Living Will

2.) is managed independently in LOB's

CONSUMER RETAIL | CAPITAL MARKETS | COMERCIAL LENDING | INVESTMENT BANKING | ASSET SERVICES | WEALTH MGMT

3.) is managed independently of operational systems

4.) is managed for geo specific regulatory compliance
  - Federal Reserve and OCC in US
  - FSA in UK
  - Bank of Canada

© 2010 IBM Corporation

GRC - A transformational opportunity
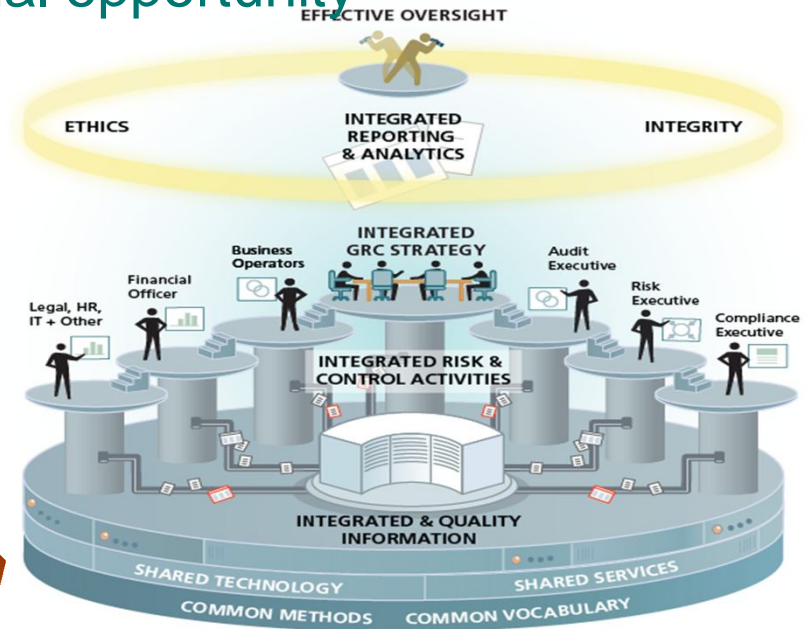
Source: *GRC Maturity: From Disorganized to Integrated Risk and Performance*, Corporate Integrity, 03/12

GRC Maturity Model – What Level is Your GRC Program?

1. UNAWARE
Businesses at this stage do not understand the interdependencies of governance, risk and compliance, and few if any IT resources are allocated.
• No defined risk and compliance ownership
• Ad hoc & reactive assessments
• Document centric approaches
• Ad hoc approach
• Little technology in place
• No visibility, trending, analytics

2. FRAGMENTED
Some interdependencies are in place, but do not benefit from an integrated approach.
• Tactical siloed approach to risk and compliance
• No integration or sharing of risk and compliance information
• Reliance on fragmented technology & lots of documents
• Measurement & trending is difficult

3. INTEGRATED
Individual business areas at this stage see the need for an integrated approach to GRC within their area.
• Strategic approach within a department
• Mature processes at a department level
• Integrated information architecture
• Good reporting and trending at a department level

Departmental Initiatives

Enterprise GRC

4. ALIGNED
Aligning and leveraging GRC to realize business benefits across departments on an integrated level.
• Strategic approach to GRC across departments
• Silos eliminated
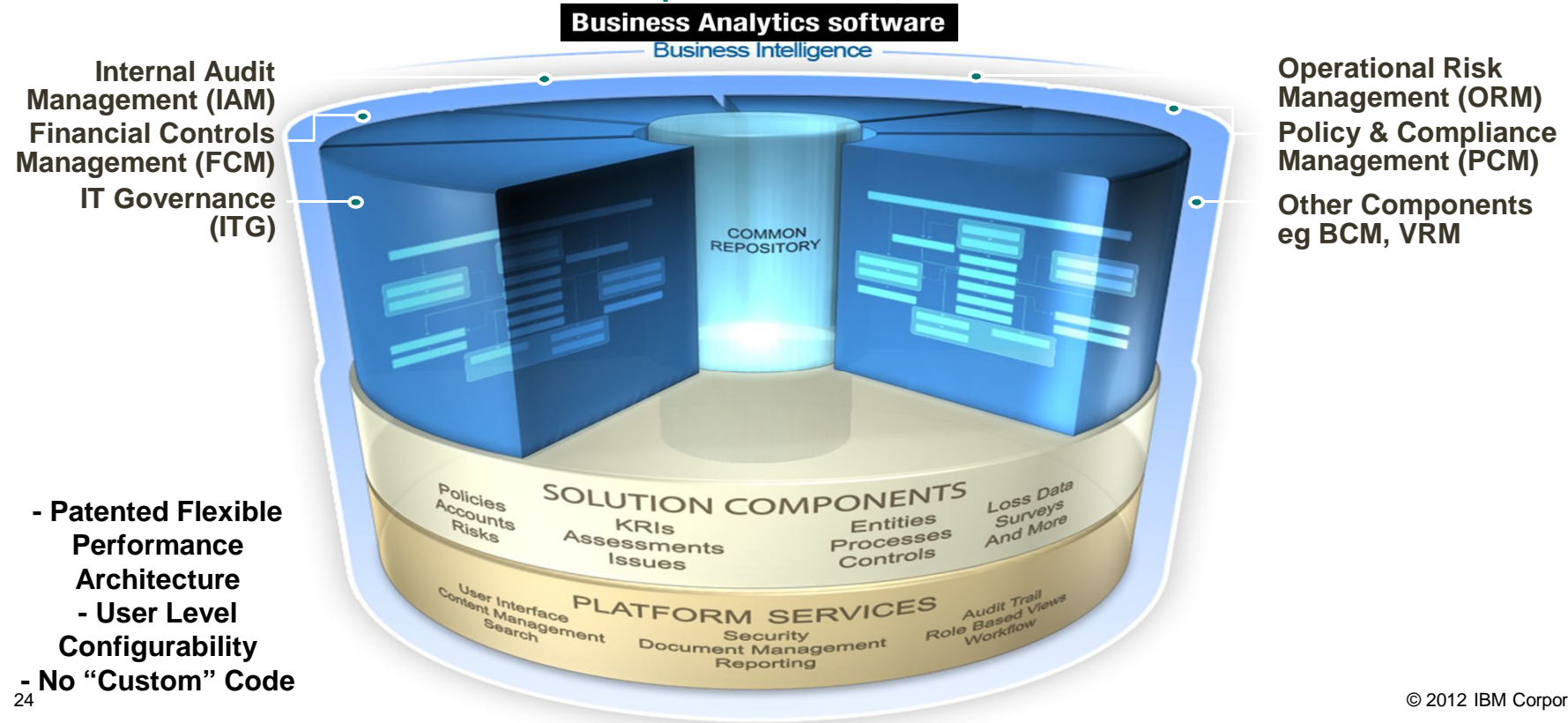• Common process, technology & information architecture across departments
• Trending and reporting across departments

5. OPTIMIZED
Using common enterprise approach to GRC – integration of GRC and performance management.
• GRC is integrated throughout the business
• GRC expectations are part of annual strategic planning
• Extensive measurement and monitoring of risk and compliance in the context of business

Source: *GRC Maturity: From Disorganized to Integrated Risk and Performance*, Corporate Integrity, 03/12

Considerations for moving from level 2 to level 3

Situation

- Tactical siloed approach to risk and compliance
- No integration or sharing of risk and compliance info.

Objective

- Move from "Fragmented" to "Integrated"
- Reduce manual data aggregation and improve visibility into risk exposure

2. FRAGMENTED　　**3. INTEGRATED**

What to Consider

- An integrated GRC platform where multiple risk and compliance initiatives can be combined and deliver:
    - Cross-module reporting, workflow, security
    - Executive dashboards and reporting
    - Common repository
    - Common processes associated with risk assessments, control testing, policy management, issues management, and reporting
    - One assessment serves multiple purposes
        Operational Risk Control Assessments, Regulatory Compliance Assessments, Sarbanes-Oxley, Group Audit
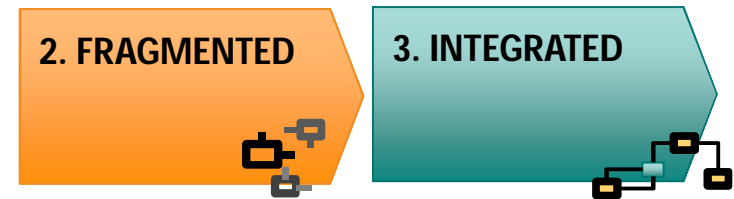
Considerations for moving from level 3 to level 4

Situation
- Strategic approach within a department
- Mature processes at a department level

3. INTEGRATED **4. ALIGNED**

Objective
- Move from "Integrated" to "Aligned"
- Make risk-informed decisions
- Leverage risk insights to improve investment, lending and planning decisions

What to Consider
- A common governance model across Line of Business, Functions and Geographies
- A common language, methodology and taxonomy for risk and compliance management
- Extensible and configurable product architecture
    - Supports any methodology, taxonomy
    - Easily extended to other solution areas
- Embedded business intelligence
    - To mine GRC data and enable risk-aware decision making
    - Allows business managers to explore risk data in an ad hoc way
- Ability to present relevant data to the user thru role-based security - resulting in the right data to the right person at the right time
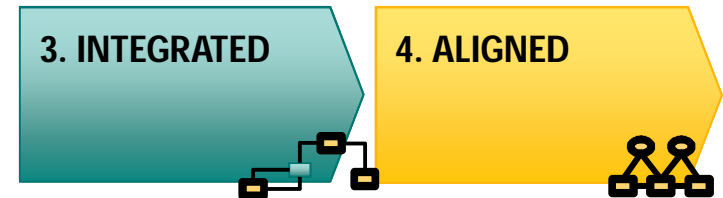
Considerations for moving from level 4 to level 5

Situation
- Strategic approach to GRC across departments
- Silos eliminated
- Common process, technology & information architecture across departments

Objective
- Move from "Aligned" to "Optimized"
- Align Risk and Performance

What to Consider
- Shared technological platforms for risk and compliance management, decision support and optimization
- Integrated risk and finance data to drive performance and maximize value creation
- Horizontal integration to eliminate "silos" and enable a comprehensive view of risks across firms
- Vertical integration to enable better decision-making, by taking into account risk and operational information – risk is a process.
- While a technology platform can encourage certain behaviors, in the end, oversight and monitoring is a critical component of creating a risk-aware organization

4. ALIGNED   **5. OPTIMIZED**

IBM OpenPages GRC Platform integrates key operational risk and compliance functions

Business Analytics software

Business Intelligence

Internal Audit Management (IAM)

Financial Controls Management (FCM)

IT Governance (ITG)

Operational Risk Management (ORM)

Policy & Compliance Management (PCM)

Other Components eg BCM, VRM

COMMON REPOSITORY

SOLUTION COMPONENTS

Policies
Accounts
Risks

KRIs
Assessments
Issues

Entities
Processes
Controls

Loss Data
Surveys
And More

- Patented Flexible Performance Architecture
- User Level Configurability
- No "Custom" Code

PLATFORM SERVICES

User Interface
Content Management
Search

Security
Document Management
Reporting

Audit Trail
Role Based Views
Workflow

24

Metadata-driven Application Platform

•Record Types
•Fields
•Record Relationships
•Field Dependencies

•Menu Layout
•Home Page Layout
•Hierarchy Views
•List Views
•Form Layout
•Activity Views

•Users
•Roles
•Delegated Administration

Security Model

User Interface Configuration

Data Model

•Job Types
•Tasks
•Business Rules

Workflow Configuration

Reporting Framework

•Reporting Views
•Reports
•Ad Hoc Query
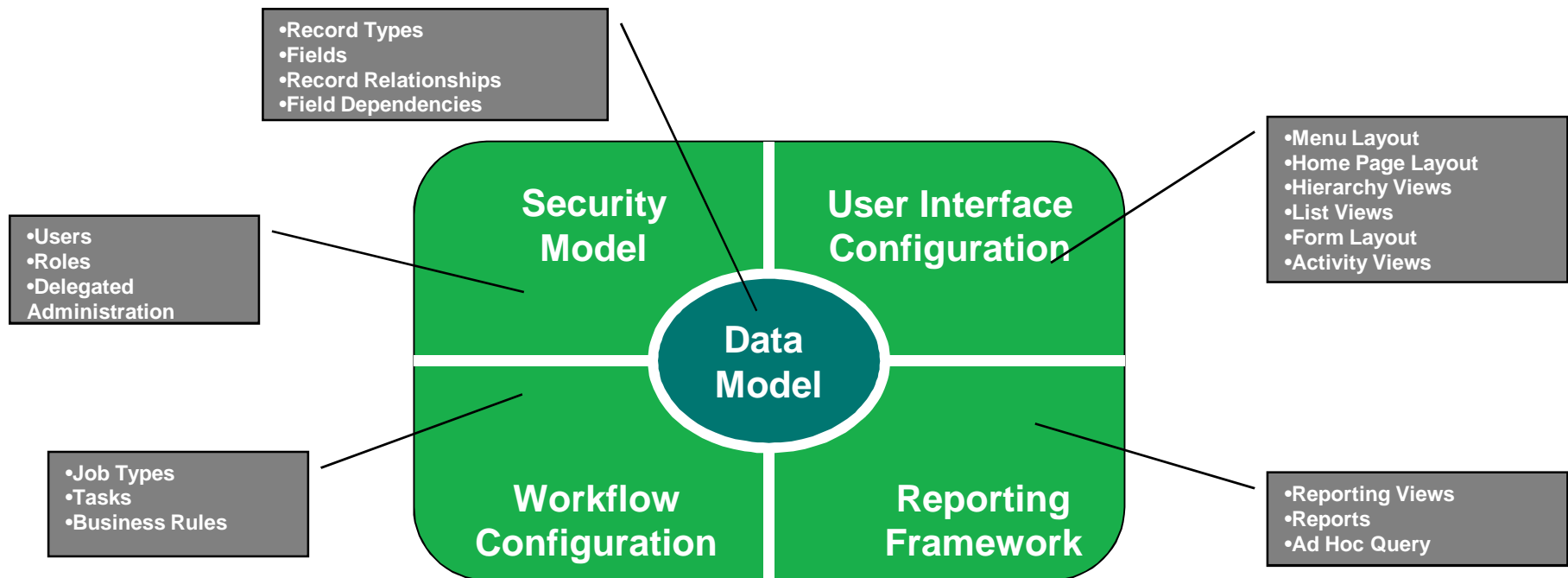
Support <u>your</u> methodology, <u>your</u> process
Lowers total cost of ownership and increases user adoption

IBM OpenPages ORM - Operational Risk Management

Key Capabilities

- Enterprise Operational Risk Management
  - Basel II AMA/Solvency II
  - Board reporting on key risks
  - Business line decision-making
- Fully-integrated Operational Risk capabilities:
  - Risk Control Self-Assessments
  - Loss event management
  - Scenario analysis
  - Key Risk Indicators (KRIs)
- Out-of-the-box KRI, loss event and risk assesment reporting; and
- OpenPages ORM dashboards deliver actionable reporting on current state of risk.

Business Benefits

- Understand and proactively manage the risks that can impact the business;
- Reduce loss and impact; and
- Reduce capital needed to fund operations.

OpenPages ORM dashboards deliver actionable reporting on current state of risk.
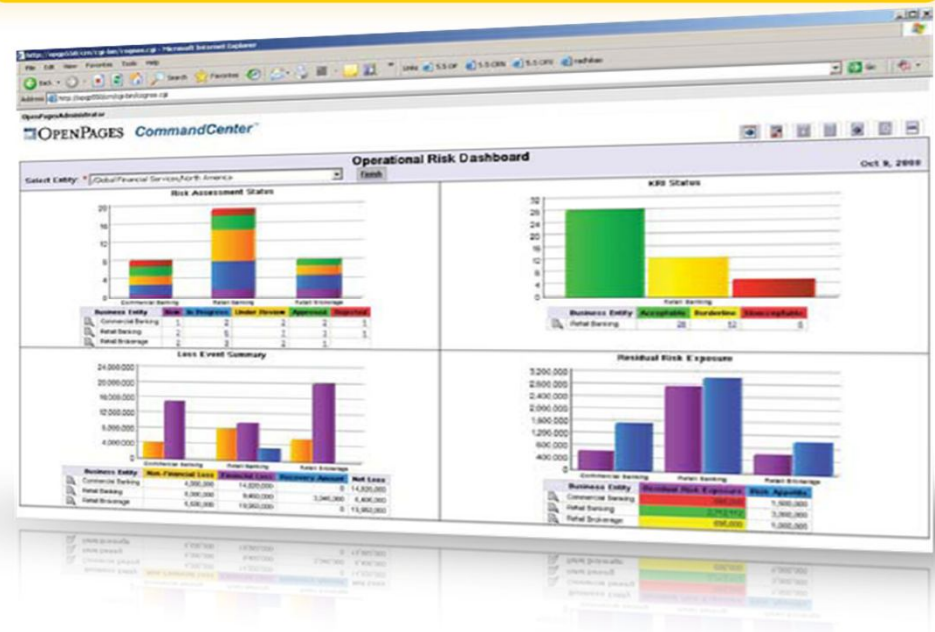
IBM OpenPages PCM - Policy and Compliance Management

Key Capabilities

- Integrated solution for managing regulatory and policy compliance;

- Assess enterprise compliance requirements at the business unit, process or local level;

- Policy and procedure management;

- Training and communication;

- Regulator interaction; and

- Regulatory change management.

Business Benefits

- Standardise compliance across regulations to reduce cost and deliver a holistic understanding of all compliance risk; and

- Provide confidence that compliance is achieved, risks are mitigated and corporate policies and procedures are enforced.

Sustain Compliance Across Multiple Policies and Regulations

Policy Mandate Map Detail

IBM OpenPages ITG - IT Governance

Key Capabilities

- OpenPages delivers a policy-driven, process-centric way to manage IT risk and compliance;
- Integrated solution for managing IT Risk and compliance
  - Assess IT risk in context of business impact.
  - Identify key risks, controls and/or gaps.
- Support for the regulatory certification and audit process;
- Risk control matrix;
- Track and manage common requirements across laws, regulations, standards and policies; and
- Integrated with the Unified Compliance Framework (UCF), the industry's most comprehensive IT compliance database

Business Benefits

- Manage internal IT controls and risk according to the business processes they support; and
- Unite multiple silos of IT risk and compliance to deliver improved visibility, better decision support, and enhanced corporate performance.

OpenPages ITG delivers a policy-driven, process-centric way to manage IT risk and compliance.
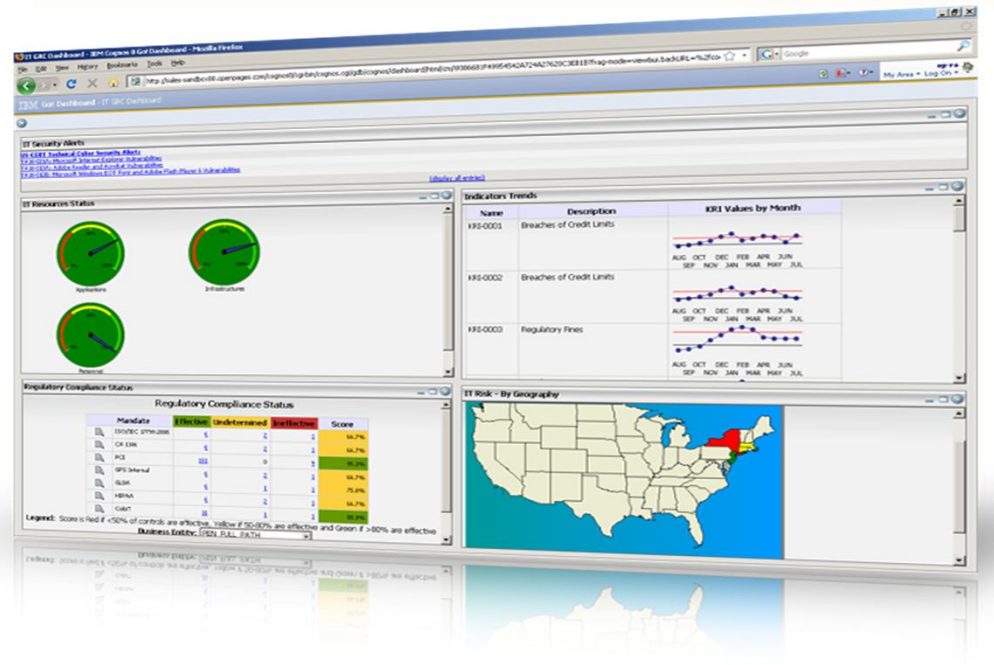
IBM OpenPages FCM - Financial Controls Management

Key Capabilities

- Automated SOX compliance lifecycle
  - Design and documentation through test, review, approval and certification
- Central repository
  - Document compliance policies and procedures, capturing full audit trails and approvals
- Issues management
  - Automate SOX control issues notification and remediation
  - Report against critical issues from dashboard
- OpenPages FCM dashboards, charts and reports deliver views on the state of financial reporting risk.

Business Benefits

- Secure and centralise financial reporting compliance data;
- Provide executive management with visibility into the state of process; and
- Ensure quick issue remediation.

OpenPages FCM dashboards, charts and reports deliver views on the state of financial reporting risk.
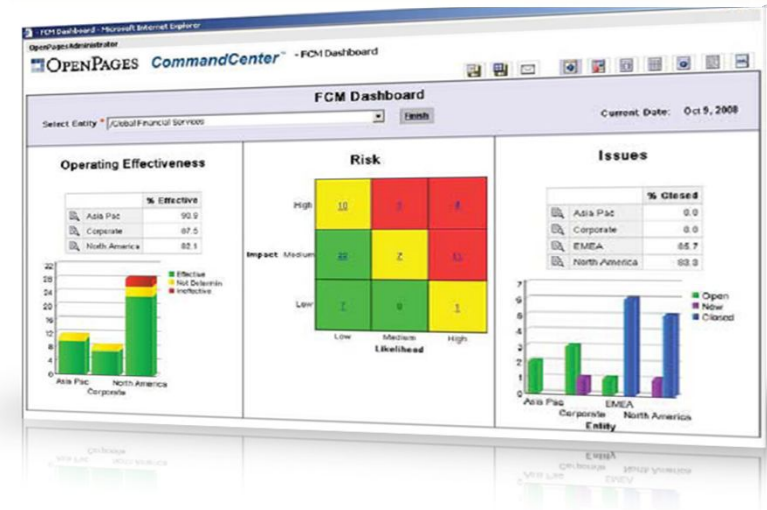
IBM OpenPages IAM - Internal Audit Management

Key Capabilities

- Integrated solution for audit management;
- Define, plan, execute and report on audits across the business
  - Track and manage audits, audit phases, workpapers and allocations
- Automate operations through fully configurable reporting and workflow; and
- Risk rank audit universe, configured according to the audit methodology.

OpenPages IAM enables organisations to plan, execute, report *and review their audit* processes.

Business Benefits

- Empowers internal audit departments to champion risk management, acting as a strategic partner to management;
- Delivers an integrated, closed loop approach to risk management, driving visibility and confidence in organisational risk posture;
- Standardise compliance across regulations to reduce cost and deliver a holistic understanding of all compliance risk;
- Provide confidence that compliance is achieved, risks are mitigated and corporate policies and procedures are enforced;
- Standardise compliance across regulations to reduce cost and deliver a holistic understanding of all compliance risk; and
- Provide confidence that compliance is achieved, risks are mitigated and corporate policies and procedures are enforced.

Other Components- IBM OpenPages BCM Business Continuity Management

Key Capabilities

- Covers the full life cycle of BCM Planning
  - Business Impact Analysis
  - Resource Requirements
  - Business Continuity Strategy
  - BCM Response
  - Testing and Exercising continuity plans
- Includes Functional and Activity-based Planning
  - Incident Management
  - Facility Management
  - IT Service Continuity Management
  - HR and Communications Management
  - External Service Providers Management
  - Business Unit/Activity Planning
- Comprehensive Business Continuity Plan reporting
  - Primary output is the Location Plan report
- Management information reports track progress and status of planning and testing
- Fully integrated with other OpenPages solution components
  - For example, activities in scope for BC planning are identified during RCSA process

Other Components - IBM OpenPages VRM Vendor Risk Management

Key Capabilities

- Easily configured to your methodology for risk management;

- Aggregation of risk assessments;

- Vendor risk rankings for follow-on assessment;

- Vendor risk assessment surveys;

- Issues and action items to facilitate remediation plans;

- Management reporting;

- Dynamic workflow for review and approval of assessments;

- Easy-to-use, profile-based user interface; and

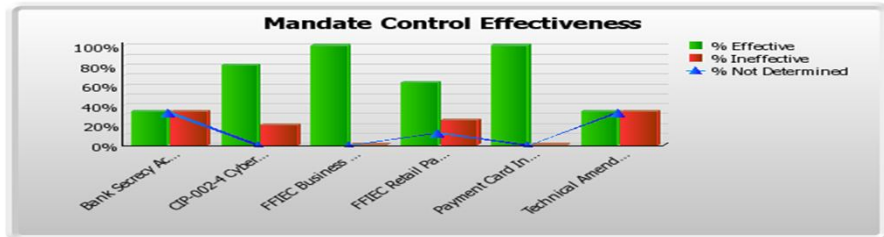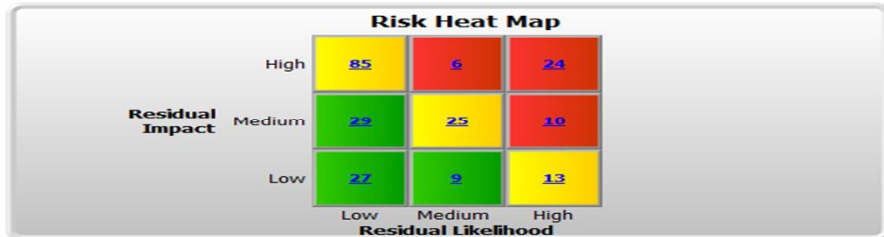- Configurable vendor record templates.

Other Components - IBM OpenPages PRM Privacy Risk Management

Key Capabilities

- **Lawyers**
  - Load and maintain a central library of Baseline requirements
  - Load and maintain a central library of Local Laws by Jurisdiction
  - Manage and automate changes to Privacy Requirements (Laws and Regulations)
  - Regulations split into a number of question sets
  - Questions split into Data Types
  - Data Streams (Business Processes)
  - Requirements mapped to data streams and therefore one or more sets of questions if you have that data stream
- **Business**
  - Access question sets by business process (data stream) and link back to Privacy requirement(s)
  - Provide flexible views of (groups of) questions
  - Enable Questions to be "sliced and diced", aggregated or presented in multiple ways for different groups of users
- **All Parties**
  - Ability to raise Exceptions
  - Set up Action Plans
  - Executives demanding pro-active and real-time view
  - Key Indicators
  - Link indicators to controls

Executive dashboards support senior management oversight

Key Risks

Name	Description	Residual Risk					Control Env	Open Critical Issues	Audit Rating
		10 Q1	10 Q2	10 Q3	10 Q4	Trend			
⚠ NA-CB-ERM-RSK-01	Failure to implement core client conversion (onboarding)	Medium	Medium	Medium	High	↘	Needs Improvement	> 5	Medium
⚠ NA-CB-ERM-RSK-02	Failure to deliver services that meet the low risk tolerance of clients	Medium	Medium	Low	Low	→	Satisfactory	> 5	Low
⚠ NA-CB-ERM-RSK-03	Failure to establish robust internal control and governance structure	Medium	Medium	Low	Low	↗	Satisfactory	> 5	Low
⚠ NA-CB-ERM-RSK-04	Failure to properly diversify product offerings and client base	Medium	Medium	Medium	High	↘	Needs Improvement	> 5	Medium
⚠ NA-CB-ERM-RSK-05	Failure to retain and develop talented employees	Low	Low	Medium	Medium	→	Satisfactory	> 5	Medium

Risk Heat Map

Residual Impact

	Low	Medium	High
High	85	6	24
Medium	29	25	10
Low	27	9	13

Residual Likelihood

2010 Internal Loss Amount & Count

Financial Loss (millions) — # Loss Events

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Mandate Control Effectiveness

- % Effective
- % Ineffective
- % Not Determined

Bank Secrecy Ac... CIP-002-4 Cyber... FFIEC Business ... FFIEC Retail Pa... Payment Card In... Technical Amend...

Issue Status

		High	Medium	Low	Not Determined
Asia Pac	Closed	0	1	2	1
	Open	0	2	0	0
Corporate	Closed	0	1	1	0
	Open	2	2	1	3
EMEA	Closed	3	5	3	1
	Open	0	0	0	2
North America	Closed	1	4	4	4
	Open	11	7	0	3

Allianz Case Study

Allianz (ill)

Business Challenge

- Allianz has 22 operating companies in 70 countries reporting directly into the risk function in Munich
- Need to prepare for compliance with Solvency II but also to look beyond this to best practice in the industry
- Need to satisfy regulatory requirements from multiple countries made it difficult to implement an operational risk framework
- Need to standardize methodology and processes to reduce complexity

Solution

- Allianz implemented a single, integrated solution for operational risk including scenario analysis, KRI's and capture evidence

Outcome

- Improved standardization of processes across the group
- Reduced the regulatory burden
- Better depth of information
- Audit trail and documentary evidence, less frequent audits
- Better and easier consolidation of information

Duke Energy Case Study

Duke Energy

Company Background

- One of the largest electric power companies in the United States.

- Headquartered in Charlotte, N.C.

- Approx. 35,000 megawatts of electric generating capacity in the Midwest and the Carolinas.

- Fortune 500 company traded on the New York Stock Exchange: symbol DUK. .

Business Challenge

- Merger between Synergy and Duke.
- Demands of a unique business model.
- Previous system: poor user experience.

Solution

- OpenPages FCM, PCM
- Flexible object model
- Notifications.
- Ease of use..

Results

- Proactive partnering of compliance function with the business.
- Risk-focused coverage and effective risk management.
- Recognise risk/return trade-offs.
- Efficiency: users notified of what they need to do and by when.
- Executive dashboard providing board-level compliance oversight.
- Reputation preservation.
- Sustainable solution.

Better business outcomes with GRC

- **Lower costs, reduce redundancy and improve efficiencies** by rationalizing your information architecture

- Deliver **consistent** and **accurate** information about the state of risk and compliance initiatives to assess exposure

- Improve **decision making** and **business performance** through increased insight and business intelligence

Communities

On-line communities, User Groups, Technical Forums, Blogs, Social networks, and more

- Find the community that interests you…

    Business Analytics ibm.com/software/products/us/en/category/SWQ00

    OpenPages Product Information ibm.com/software/analytics/openpages/

    Information Management ibm.com/software/data/community

    Enterprise Content Management ibm.com/software/data/content-management/usernet.html

IBM Champions

- Recognising individuals who have made the most outstanding contributions to Information Management, Business Analytics, and Enterprise Content Management communities **ibm.com**/champion

Next Breakout Sessions:

	TRACK 1: Business Intelligence	TRACK 2: Performance & Risk Management	TRACK 3: Customer & Predictive Analytics
11:00 - 11:45am	From Insight to Action - Introducing IBM Cognos Insight	IBM Cognos Solutions for Planning and Analytics Including Financial Disclosure	Optimising Decision Making at the Point of Contact
11:45 - 12:30pm	Integrated BI and Planning for Midsize Organisations	Innovation in Sales Performance Management with Varicent	Delivering Business Value with Social Media Analytics

Thank You

Trademarks and notes

IBM Corporation 2012

- IBM, the IBM logo, ibm.com, OpenPages, are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), these symbols indicate US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

- Other company, product, and service names may be trademarks or service marks of others.

- References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.