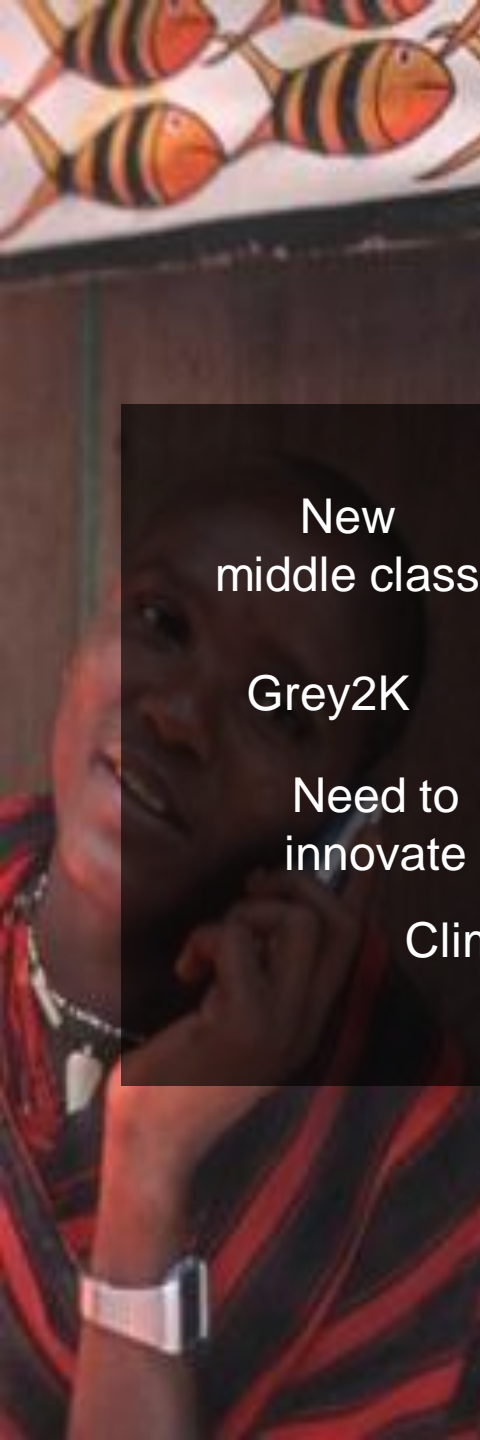


Managing Operational Risk for Sustainable Growth and Development

Dieter Haesslein, VP Environment, Health, and Safety Product Management
Jeremiah Stone, VP Sustainable Operations & Products Solution Management
September 12, 2012





New middle class

Grey2K

Need to innovate

Climate instability, pollution



Price volatility, margin risk

NEW RISKS AND OPPORTUNITIES

New work patterns

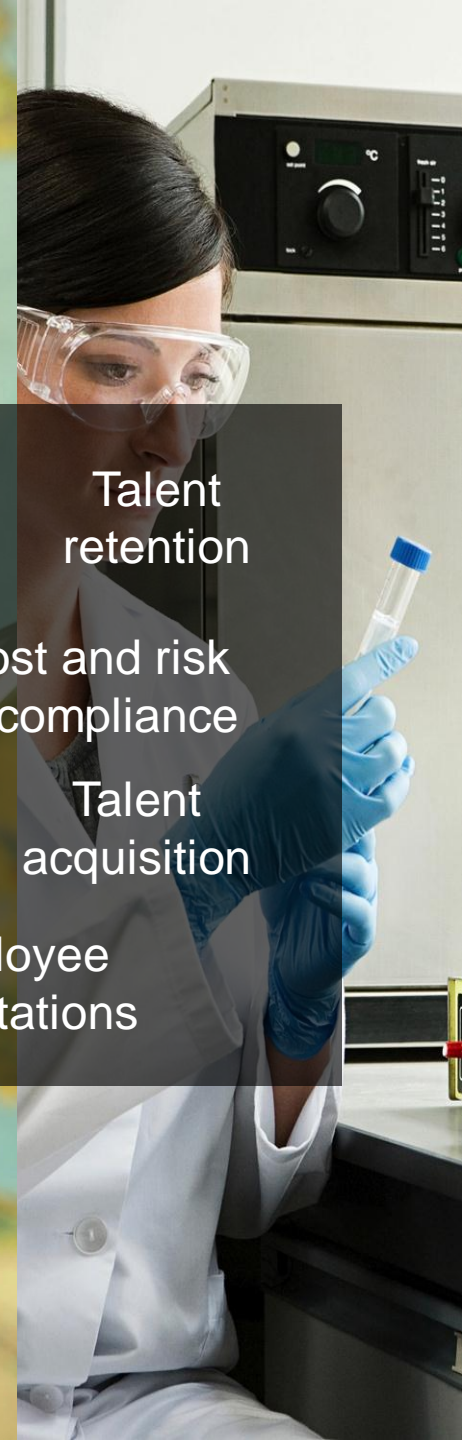


Growing public awareness

Supply at risk

Brand at risk

Employee expectations



Talent retention

Cost and risk of compliance

Talent acquisition

SAP co-innovates with the best

We put the best sustainability practices into our solutions

SAP ecosystem

2000 Customers. 800 Million People Protected. 24 Industries



- 7 development labs
- 15 research centers
- Collaboration platforms for open innovation
- Bring together customers, partners, SAP researchers and developers
- Real-world, hands-on settings
- Turning ideas into real solutions!



CARBON DISCLOSURE PROJECT



SAP's strategy for sustainability



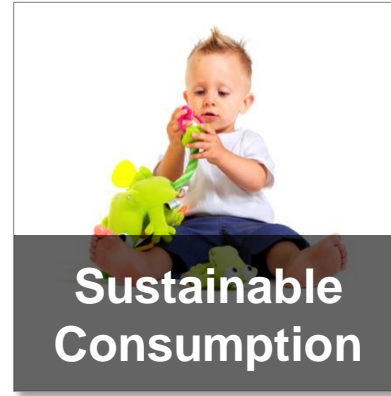
- Operational continuity
- Lower compliance cost
- Proactive risk control
- Boost productivity

► Operational Risk Mgmt



- Cost reduction through process efficiencies
- Supply chain collaboration

► Energy and Environmental Resource Mgmt



- Competitiveness
- New markets
- Brand value
- Customer Loyalty

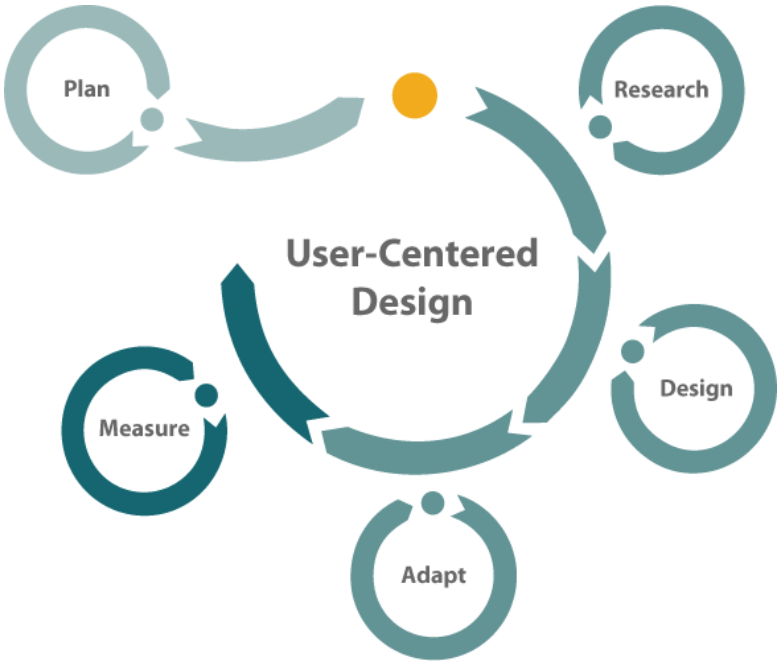
► Product Safety & Stewardship



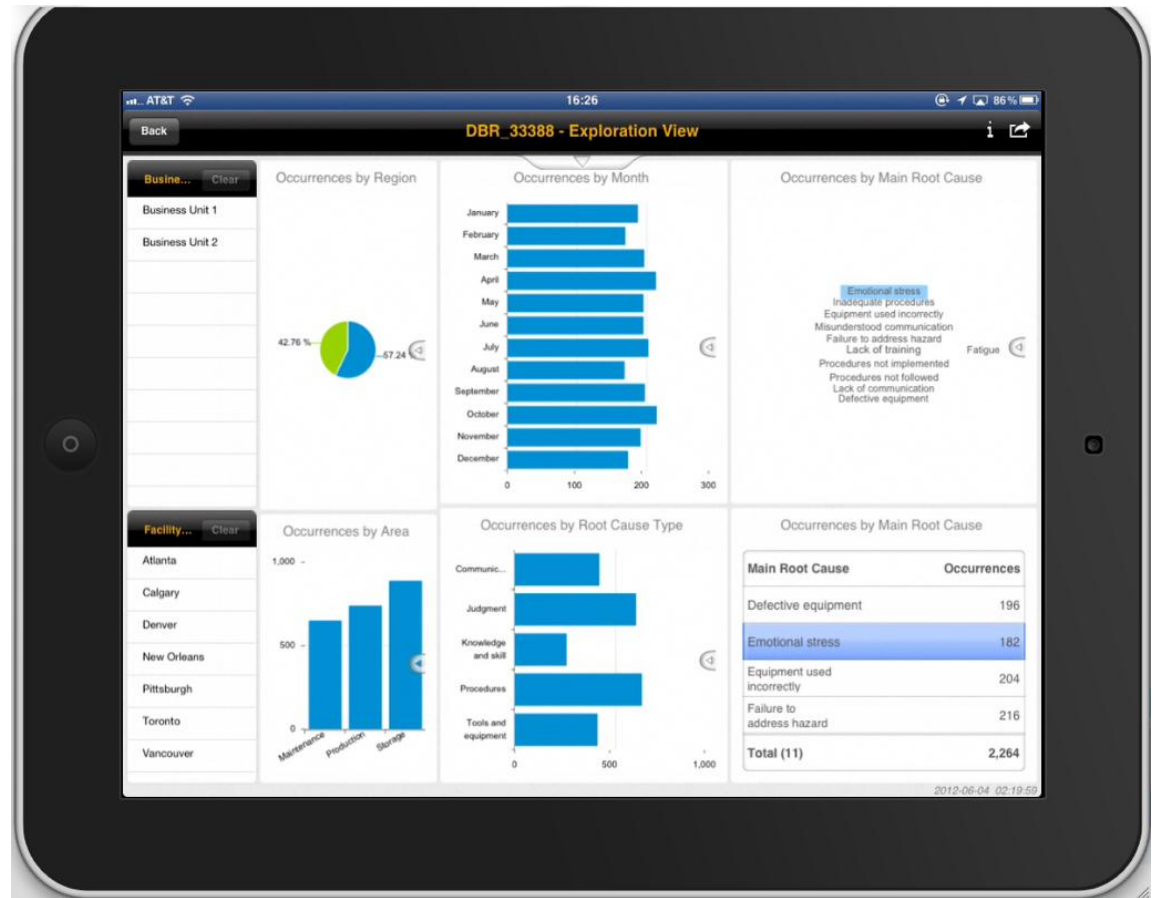
- Sustain the business model
- Employability
- Health & diversity
- Higher market cap

► Sustainability Reporting and Analytics

Simplicity



Demo – Safety Issue & Analytics Mobile Applications



Operational Risk Management

A close-up, profile view of a male worker wearing a grey hard hat and safety glasses. He is looking towards the right. In the background, there is a bright, intense light source, likely a welding or grinding process, which is creating a large spray of bright orange and yellow sparks that fill the upper right portion of the frame. The worker is wearing a grey long-sleeved shirt. The overall scene is industrial and focused on safety and operational risk.

Customer Request

Help me grow and innovate in operations with confidence by moving from a plant-level focus on compliance and EHS data management to proactive, holistic management of risk and safety based upon a foundation of operational excellence.

Operational Risk Management: The Challenge

Connecting the Shop Floor to the Top Floor

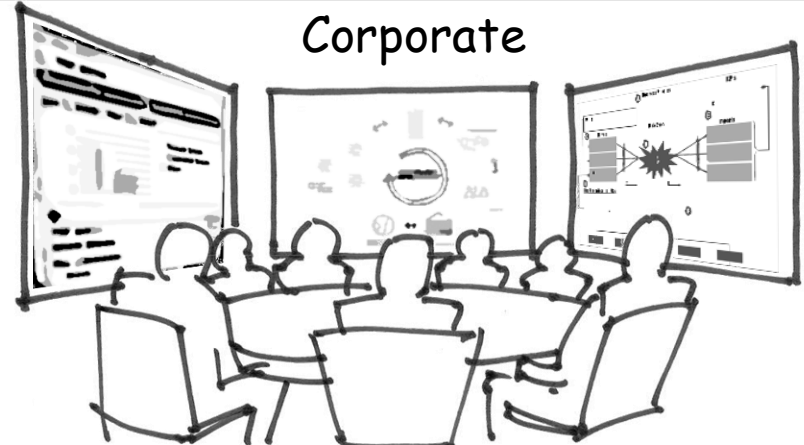
We committed to spending more on proactive risk reduction, but what are the highest priority projects?

Site Management



This reading is confusing.
What should I do?

Corporate



We are about to miss an important delivery date. Can we put in a bigger pump to increase production?

Individual





Focused Investments

Co-Innovation Driven Solutions for Safety

SAP delivers comprehensive end-to-end solutions for Sustainability

Sustainability

Operational Risk Management

- Incident Management
- EHS Risk Assessment
- EHS Program Management
- Management of Change
- Maintenance Worker Safety Management
- Audit Management

Product Safety & Stewardship

- Product Compliance
- REACH Compliance
- Substance Volume Tracking
- Hazardous Substance Mgmt
- Global Label Management
- Product Safety Comm.
- Dangerous Goods Mgmt
- Recycling Administration

Energy & Environment Management

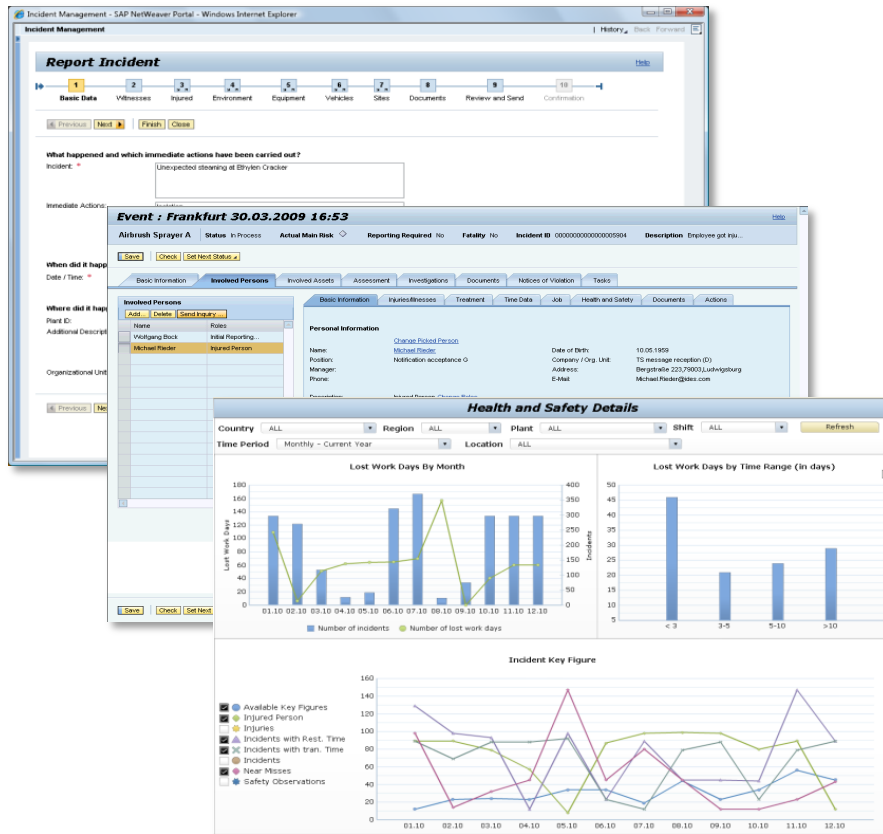
- Energy Analysis and Monitoring
- Environmental Compliance

Sustainability Reporting & Analytics

- Operations-Driving Strategic Initiatives
- Finance and Risk Mgmt – Monitor Performance

Incident Management Solution

Manage all unsafe acts and unsafe conditions to reduce incidents



- All incidents, near misses, observations in one system
- Simple, fast incident reporting by anyone, anywhere online and offline
- Standard guided processes for data collection, investigation, corrective/preventive actions & tasks, and monitoring
- Dashboards and analytics to see trends and exceptions for quick action

Risk Assessment Solution

Proactively reduce risks to prevent incidents

The screenshot displays the Risk Assessment Solution web interface. It features a top navigation bar with filters for Country, Region, Plant, and Location. Below this is a 'Risk Summary' table showing Risk Level, Status, and Percentage. A pie chart on the left shows 'Total Assess for Risk Assess' with values 44.4, 25, and 44.437%. The main content area shows a detailed view of a 'Risk Assessment: JHA Powered Industrial Trucks' with a table of risks and a 'Determine Inherent Risk' section with a 'Giggle Risk Matrix'.

Risk Assessment Type	Risk Level	Status	Number	Percentage	Initial Number	Percentage	Final Number	Percentage
High	High	Open	11	100.0%	11	100.0%	0	0.0%
Medium	Medium	Open	3	11.11%	3	26.9%	0	0.0%
Low	Low	Open	20	88.89%	20	173.1%	20	100.0%
Unacceptable	Unacceptable	Open	0	0.0%	0	0.0%	0	0.0%

Step No.	Job Step	Hazard Category	Hazard	Risk Type	Severity	Likelihood	Level Icon	Risk Level	Evaluation	Risk ID
1	Truck subject	Ergonomical	Advanced Postures	Initial Risk	Low	Rare	Low	Acceptable	426	426
2	Propped to operate	Ergonomical	Advanced Postures	Initial Risk	Low	Possible	Low	Acceptable	427	427
3	Shoes to slip to be	Ergonomical	Advanced Postures	Initial Risk	Major	Almost Certain	High	Unacceptable	428	428
4	Insert into with	Ergonomical	Advanced Postures	Initial Risk	Low	Possible	Low	Acceptable	429	429
5	Shoes to slip for	Ergonomical	Advanced Postures	Initial Risk	Major	Almost Certain	High	Unacceptable	430	430

- Comprehensive, multi-type, risk assessment capabilities to identify hazards, risks, and controls
- Configurable analysis methods with graphical risk matrix, comparison of measurements to regulatory limits, Job Hazard Analyses
- Conduct effectiveness evaluations on risk controls
- Comprehensive dashboards deliver decision-support information

Maintenance Worker Safety Solution

Embed Risk Information and Controls into Maintenance Process

Risk Assessment: Gas Pipeline San Bruno

Risk Assessment Type: Environment | Status: In Progress | Risk Assessment ID: 1340 | Created On/At: 14.06.2011 11:18

Buttons: Save | Close | Set Status | Create Follow-Up Assessment | You can...

Navigation: Basic Information | Risks | Documents | Tasks

You can enter information about risks:

- You can identify risks by choosing the Identify Risks function.
- For each assessment step of a risk, you can enter information, start processes, and perform tasks relevant to the step.

View: (Standard View) | Identify Risks | Remove | Reassign | Revisions

Location	Hazard Category	Hazard	Operational St.	Agent	Risk Type	S.	U.	L.	Risk L.	Evaluation	Risk ID
90 000P	Physical	Explosion	Normal Operation		Residual Risk	Crit.				Uncertain	9239

Assessment Steps

- Review/Ed Basic Information
- Determine Inherent Risk
- Review/Ed Existing Controls
- Determine Initial Risk
- Define New Controls
- Determine Residual Risk
- Review Summary

Determine Inherent Risk

Office Document | Exposure Analysis | Risk Matrix

Graphical Risk Matrix

Likelihood	Severity	Severity				
		Low	Minor	Moderate	Major	Critical
Infrequent	1	2	3	4	5	
Possible	2	4	6	8	10	
Likely	3	6	9	12	15	
Almost Certain	4	8	12	16	20	
	5	10	15	20	25	

Risk Matrix

Likelihood:

Description: Has happened in organization, or more than once in the industry

Comment on Likelihood:

Link Transition

Severity:

Description: National or International Effect

Comment on Severity:

Dec 2, 2010 Job Card POLEDNA Copy H Page 1

Order: 400942 | Order Type: PM01 | Maintenance order

Description: Repair broken cover

Start date: Dec 2, 2010 | End date: Dec 2, 2010

Priority Status: REL NMAAT PRC TTJL

Funct. location: 10037809 | Gas Tank

Equipment: Location: Room: 0001

Assembly: PM planner gpd | PM plant

Main work center: MECHANIK 0001 | Plant Maintenance Mechank | Maint. plan item

Maintenance plan: Revision number

Safety Plan

Relevant Risks

- Explosion
- Falling from Heights

Planned Safety Measures

General Safety Measures

- Welding Permit

Operations and Safety Measures

Check pressure and temperature

- Gas Detector G213-5
- Fire Extinguisher FE37-007
- Safety belt 4711

Remove cover

- Safety belt 4711

Check and repair cover

No safety-relevant information available

Install cover

- Fire Extinguisher FE37-007
- Safety belt 4711

- Risk management systems natively integrated into Enterprise Asset Management
- Automatic determination of relevant risks and safety measures in work order enables efficient maintenance planning
- Support of various safety measures including PPE, work permits, documentation, and procedures
- Standard safety icons on job card to clearly communicate job hazards to the worker

Management of Change Solution

Manage operational changes without increasing risk

Change Request Customer Demo (please make no changes): 10000736 - Compressor ELS ex...

Save | Cancel | Edit | Ask an Expert

Object Information and Dates

Object	Change Request Status
Type: Equipment	Status: In Process 26.10.2011
Object: 10000006	Entered By: Teresa Stoll 25.10.2011
Plant: 0001	Werk 0001
Country: DE	Germany
Reported By: 102 Teresa Stoll / D-69190 Waldorf 25.10.2011	

Existing Change Requests (14)

Urgency

Emergency: No
 Yes

Proposed Dates

Duration/Reve... Permanent
Approval: 01.11.2011
Execution Start: 07.11.2011
Operational St... 02.12.2011

Change Definition

Activities

Description	Status	Responsible	All	Due Date	Type	Number
Pre-Approval	Approved	Robert Carter			Customer Demo - Approval	10024905
Evaluation	In Process	Tim Miller			Customer Demo - Task	10024906
Set technological requirements	In Process	Maria Callow			Customer Demo - Task	10024929
Review technical soundness	In Process				Customer Demo - Task	10024930
Approve technical changes	Notified	Curt Walter			Customer Demo - Approval	10024931
Obtain Permit	Blocked	Michael Burnt			Customer Demo - Task	10024939
Risk Assessment	Declined	Martin Miller			Customer Demo - Task	10024940
Review operations impact	Created				Customer Demo - Task	10024941
Cost Impact	Created				Customer Demo - Task	10024942
Implementation	Created				Customer Demo - Task	10024907
Pre-Start Up	Created	Martin Miller			Customer Demo - Task	10024908

References

Justification

Impacted Area

Risk Management

- Management of equipment, process, and chemical changes
- User-friendly change request and approval process to ensure proper risk assessment before changes are made
- Ability to create checks and balances specific to the type of change, risk level, resources, and assets involved
- Involvement of stakeholders and activity owners, according to predefined responsibilities



How to Eat This Elephant?

Example: Operational Risk Management Adoption Approach

How leading customers are approaching deployment of
SAP Sustainability Solutions

Build a Stable Foundation

Empower Employees & Deliver Executive Insight

Corporate



1

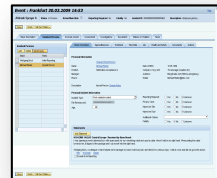
Mobile SAP Explorer



1



Incident Management



Site Management



Individual



Layer In Proactive Capabilities

Measure & Continuously Improve Safety Performance

Corporate



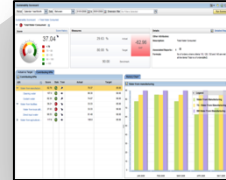
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Mobile SAP Explorer



2

SAP Sustainability Performance Management



1



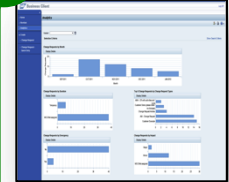
Incident Management

2



Risk Assessment

2

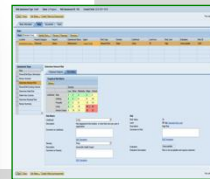
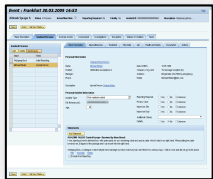


Management of Change

Site Management



Individual



Item	Category	Priority	Status	Responsible	Due Date
1	High	Critical	Open	John Doe	2012-12-31
2	Medium	High	In Progress	Jane Smith	2013-01-15
3	Low	Medium	Completed	Mike Johnson	2012-11-30

Deliver the Final Mile of Safety

Implement Effective Control of Work

Corporate



1 Mobile SAP Explorer

2 SAP Sustainability Performance Management

Site Management



1 Incident Management

2 Risk Assessment

3 Maintenance Worker Safety Management

2 Management of Change

Individual



Integrated Tools to Face the Challenge

Connecting the Shop Floor to the Top Floor Holistically

One SAP Integrated System

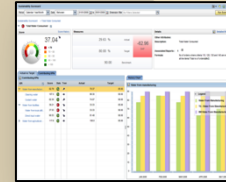
Corporate



Mobile SAP Explorer



SAP Sustainability Performance Management



SAP BOBJ Dashboards and Analytical Reporting

Site Management

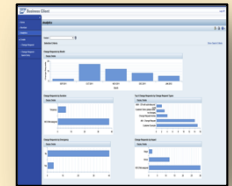
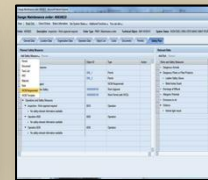


Incident Management



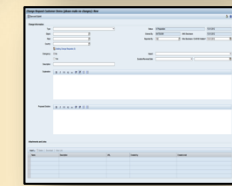
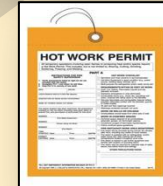
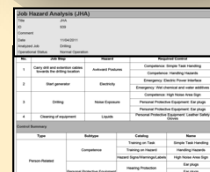
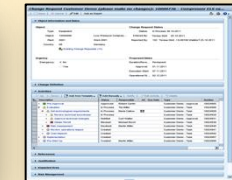
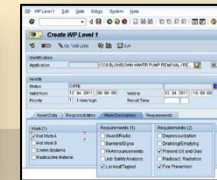
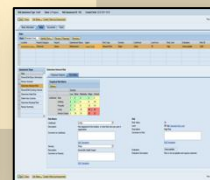
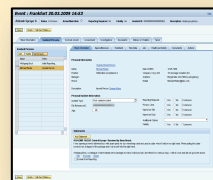
Risk Assessment

Maintenance Worker Safety Management



Management of Change

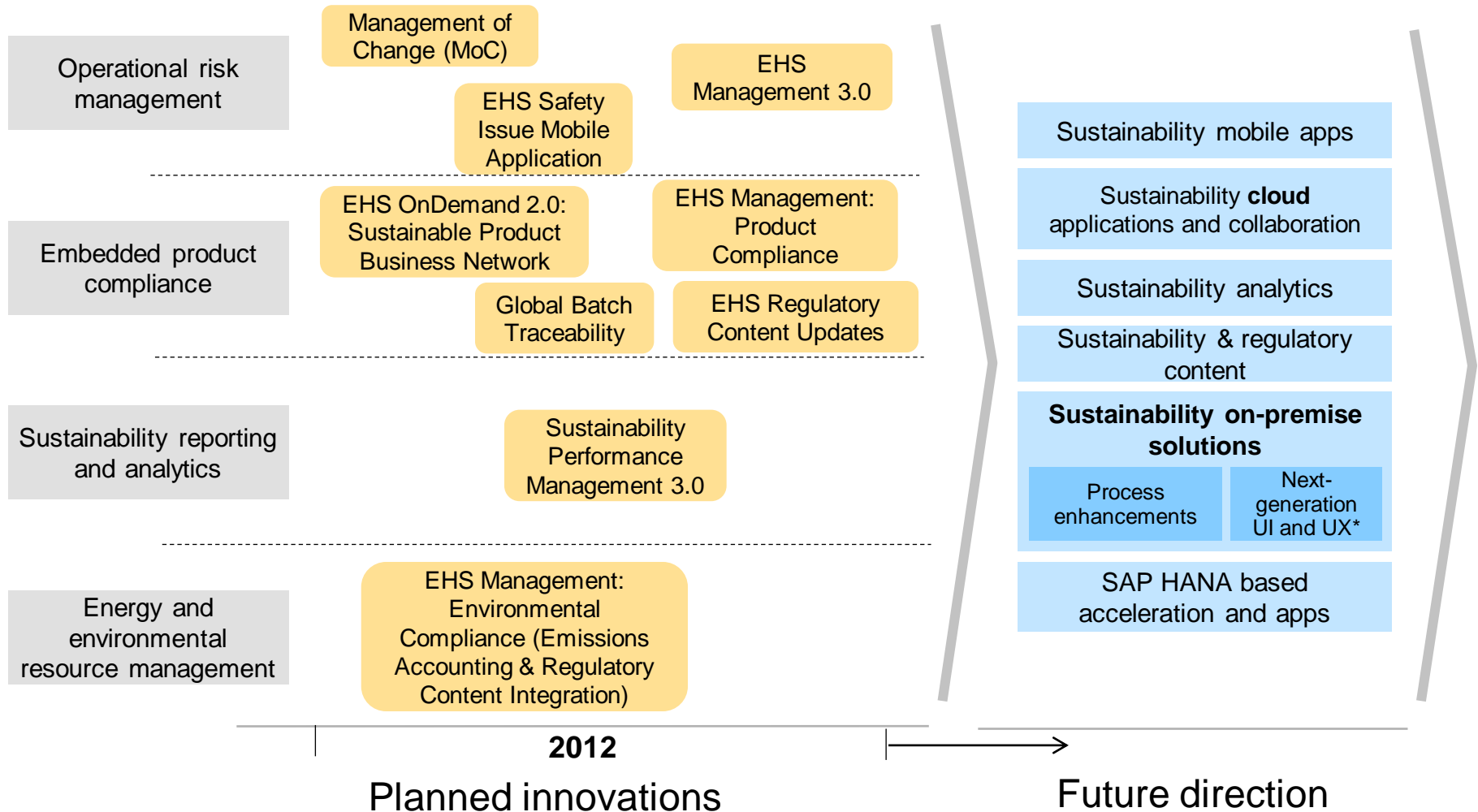
Individual





The Road Ahead

SAP Sustainability Solution Roadmap



*User experience

Key Takeaways

1

SAP's operational risk management capabilities **improve practitioner effectiveness** through superior comparability, accuracy & completeness by building on a real-time platform.

2

Operational risk management *solutions are **strategic for SAP***. SAP is delivering a best in class system today, and a continuous investment plan for the future.

3

Together with SAP, **YOU can drive a strategic, transformational change** in operational safety, preventing loss of life, damage to the Environment, and unintended downtime.



Thank you

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