

PROGRAM RISK ID

Radical Risk Identification for Product and Service Development

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Program Overruns (and performance problems too)

In March 2014, the GAO reported that the **72 major defense programs** they reviewed that have reached the systems development stage were averaging **23 months delay** in delivering initial capabilities. ¹

MADRID, Jan 1 (Reuters) - Work on the massive **Panama Canal extension** project may be suspended after a clash between the builders and the Panamanian authorities about **\$1.6 billion in cost overruns**, according to a statement from the building consortium on Wednesday. The cost overruns on the \$3.2 billion canal extension, one of the world's largest construction contracts.... ²

'Management errors in **Airbus' A400M** cargo plane program allowed huge cost overruns' ³ It was **delayed a total of four years** and has gone **6.2 billion euros (US\$8.3bn) over budget** - a 30 percent overrun. ⁴

¹ <http://www.archstoneconsulting.com/industries/manufacturing/white-papers/delays-roadmap-for-improving-performance.jsp> 2014

² Reuters | January 1, 2014

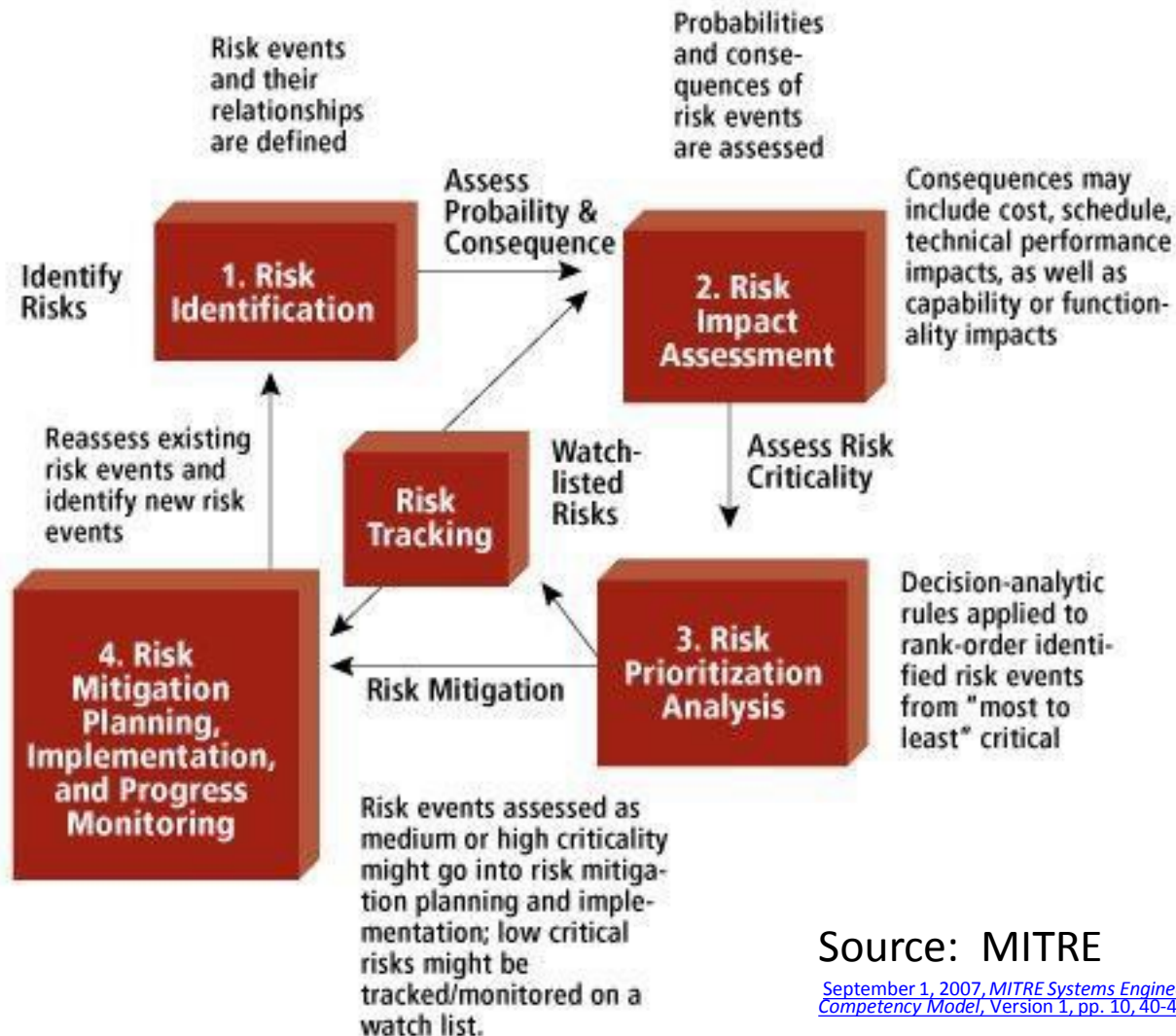
³ <http://blog.seattletpi.com/aerospace/2010/01/20/audit-finds-eads-can-pay-for-a400m-cost-overruns/> January 2010

⁴ <http://rt.com/business/airbus-a400m-france-delays-561/> September 30, 2013

No One Wants to Get Bitten



A typical risk management process



Source: MITRE

[September 1, 2007, MITRE Systems Engineering \(SE\) Competency Model, Version 1, pp. 10, 40-41.](#)

Why Do Risk Management?

- A. My management requires it**
- B. Customer or regulatory requirement**
- C. We always do it**
- D. To save money and time**
- E. Other**

Why Do Risk Management?

Because the customer requires it (89%) or

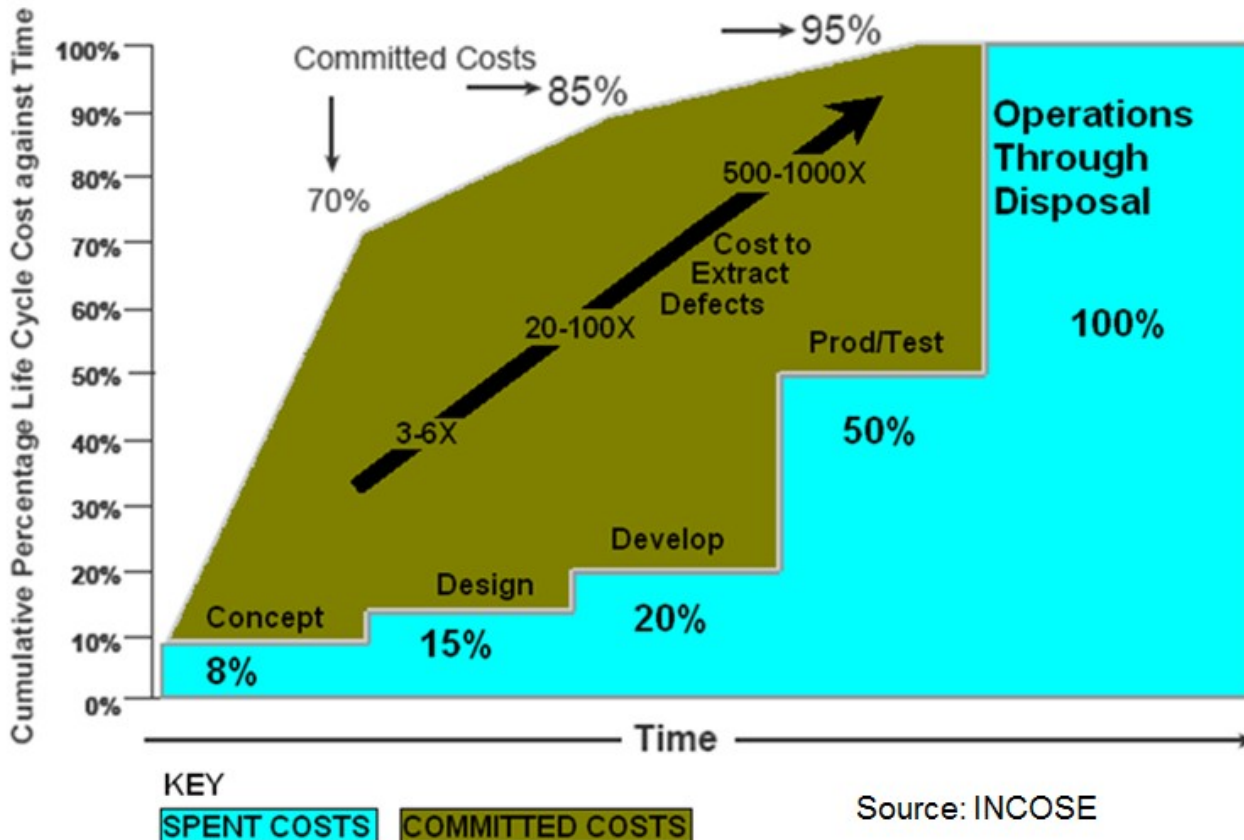
To comply with existing regulations (65%)

Per our survey

Why Is RM Required by Customer/Regulation?

Problems found late in development cost 500-1000% more to address

Effectiveness Costs



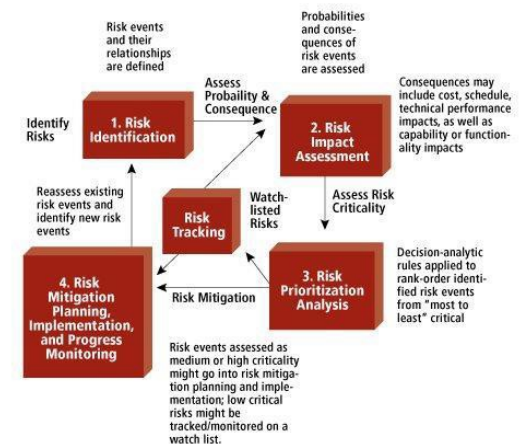
Why Isn't the Risk Management Process More Effective?

The Piecemeal Approach to Risk Management

- the Gulf Oil Spill

The Subjectivity of Risk Management

Denial, Fear and Embarrassment About Risk



Let's focus on risk *identification*



We've been doing it the same way for 50+ years



Current RI methods are ad hoc

Personal experience/lessons learned	83.3%
Consult SMEs/Program Personnel	71.4%
Brainstorming	66.6%
Failure Analyses	54.7%
Consult Stakeholders	50.0%
PRA	40.5%

Current RI methods are non-comprehensive

Doesn't cover all program areas

Not much RI help is available

A Sysenex/George Mason University study revealed 50+ commercially available risk tools – none of which identify risk

The Downside of Undiscovered Risks

- **Will occur at the worst possible time and in the worst possible way**
 - Cost and schedule overruns
 - Performance impacts
- **Loss of reputation – yours, your company**

“It takes 20 years to build a reputation and 5 minutes to ruin it”

Warren Buffett

- **Potential program failure**
- **Job losses – yours, others**

Current Risk ID methods need improvement!

Our Risk Identification Analysis

- **Over 500 programs, their risks and outcomes were analyzed**
- **The same risks kept coming up, over and over**
- **Although risk specifics vary by program, the *underlying causes are the same***
- **218 common risks identified**
- **Risk weighting based on risk frequency, severity**

Other Analysis Conclusions

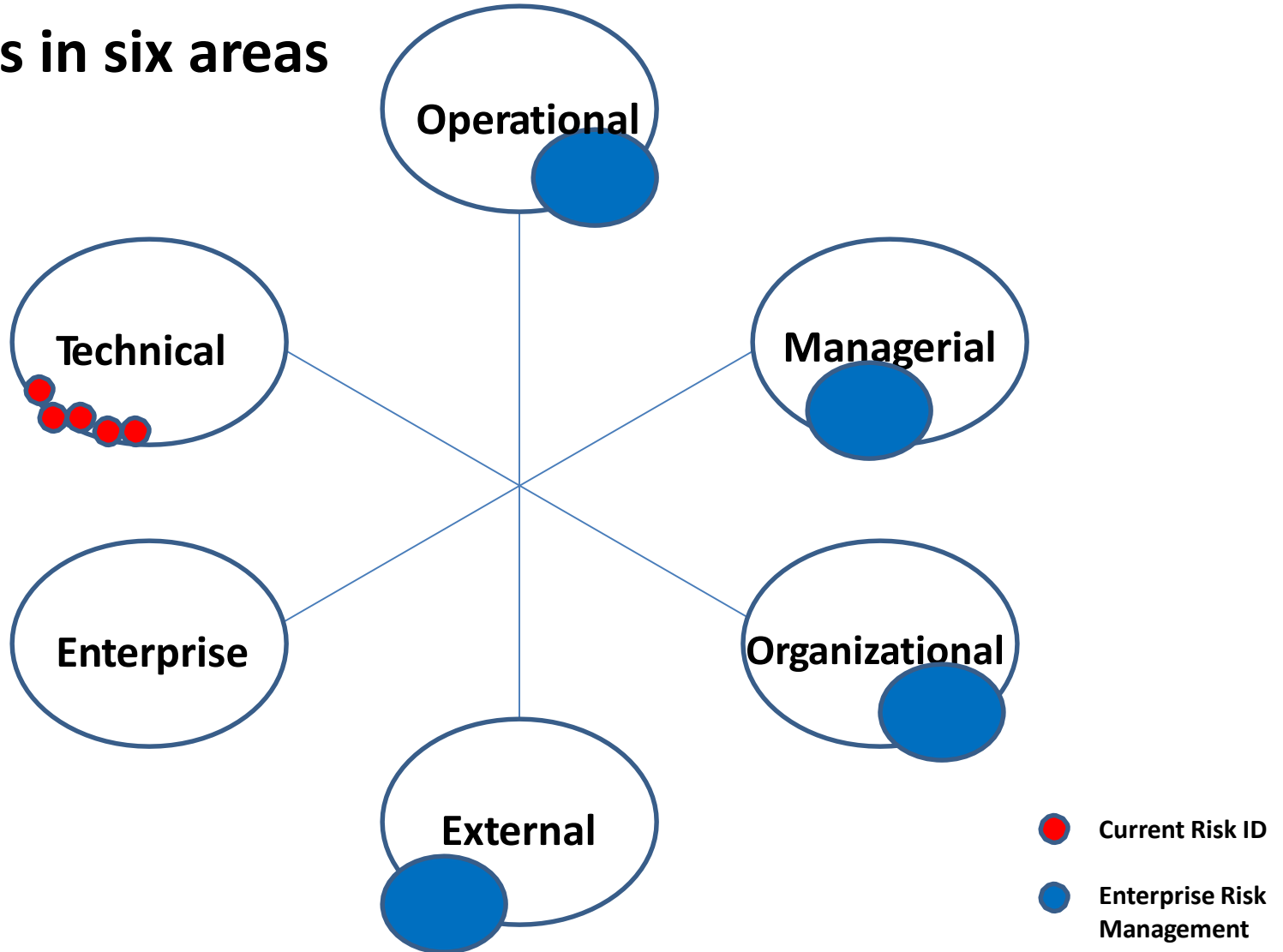
Program complexity and program risk relationship

- Program factors that affected risk relationships
- Program cost, schedule, # of personnel, # of technologies, influencing factors
- Simple, average, moderate, intermediate and high

Two parts to a complete evaluation for each risk

- The risk line item
- Program status of the risk *at this time*
 - Objective criteria developed for each risk

218 Risks in six areas



Risk Area Breakouts - Selected Risks

Technical

- Requirements Definition
- Interface Definition and Control
- Common Mode/Cascading Failures
- Quality
- Safety
- Logistics Supportability
- Technology Maturity
- Failure Analysis
- Models and Simulations
- Data Quality
- Software Module Maturity
- Software Integration Maturity
- Experience Required to Implement HW Module
- HS Methodology and Process Maturity
- Change Management Process
- Producibility
- Testing Planning
- COTS/GOTS/Reuse Experience

Organizational

- Organizational Interest in Personnel Motivation
- Organizational Management Processes
- Organizational Culture
- Organizational Experience
- Organizational Business/Mission Benefit

Operational

- System Operational Problems
- Obsolescence Management Process
- Personnel Training and Experience
- Human Error
- Near Miss Consideration
- User Acceptance
- User Satisfaction
- System Availability
- System Failure Contingencies

Enterprise

- Enterprise Experience
- Enterprise Reputation
- Enterprise Management Processes
- Enterprise Security Processes
- Enterprise Contingency Planning

Management

- Management Experience
- Resources and Commitment
- Overall Program Staffing
- Personnel Experience
- Turnover Rate
- Personnel Morale
- Subcontractor Management
- Supplier Management

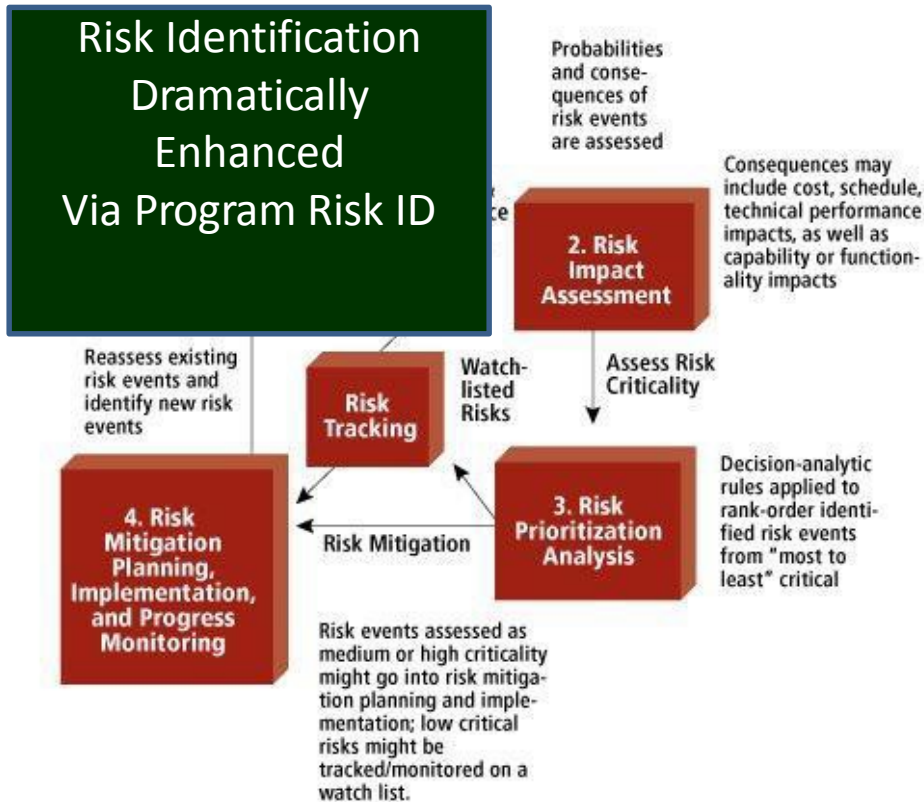
External

- Funding
- Regulatory
- Legal
- Labor Market
- Customer Experience
- Customer Interaction

Risk Example

Risk Title	Risk Levels	Application Notes
Current Total Personnel Turnover Rate	5 – The current total personnel turnover rate is 48% or more per year.	<ul style="list-style-type: none"> • Consider the age distribution in your workforce--a narrow age distribution creates a risk. • Program staff turnover, versus historical norms, versus the program staff turnover plan >10% difference per year is a red flag. • Excessive staff turnover significantly lowers productivity below planned, and causes schedule slippage.
	4 - The current total personnel turnover rate is between 24% and 47% per year.	
	3 - The current total personnel turnover rate is between 12% and 23% per year.	
	2 - The current total personnel turnover rate is between 6% and 11% per year.	
	1 - The current total personnel turnover rate is 5% or less per year.	
	N/A	

Program Risk ID



A web-based software tool

For One Program – trending through time

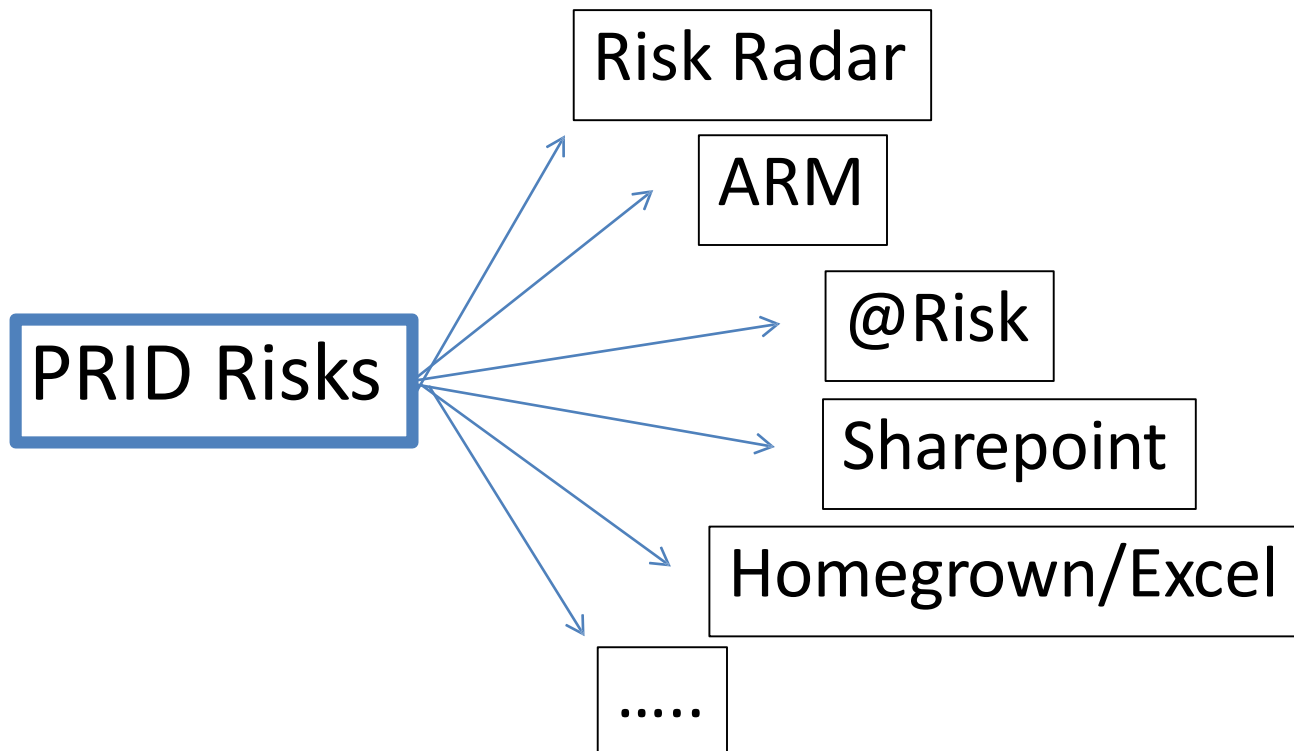
Across Many Programs - compare risk levels across programs

Program Risk ID Tool Demonstration

Now that you have these risks, what's next?

PRID tool reports become the input for other risk tools

- commercial, homegrown



Don't Get Bitten



www.programriskid.com



Talk to us about a demo