

PROGRAM RISK ID

Radical Risk Identification for Meeting Program Objectives

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What is the Problem?

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

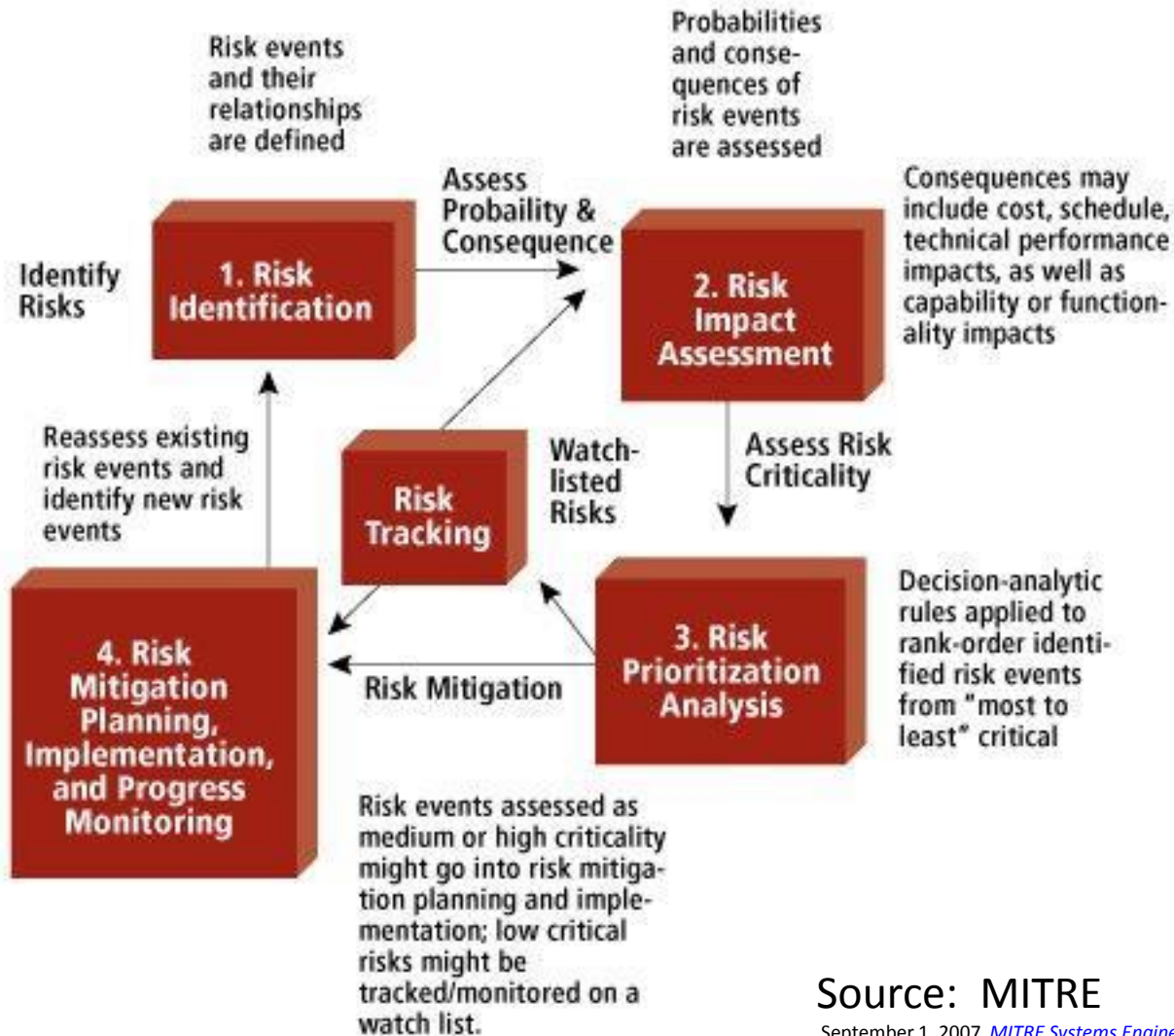


What is the Problem?

As highly experienced professionals, let's talk about your experiences and observations of projects (or seeing projects) that failed, were seriously delayed, or had major cost over runs.

- What were the issues that arose that caused these things to happen?
- In theory, could these issues been predicted early?
- If so, how would this have changed things for your clients and your firm?

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. Standard Process**
- D. To save money and time**
- E. To kill bad ideas**
- F. To cover yourself**
- G. Other**

**Because the customer requires it
(89%) or**

**To comply with existing regulations
(65%)**

Per our survey

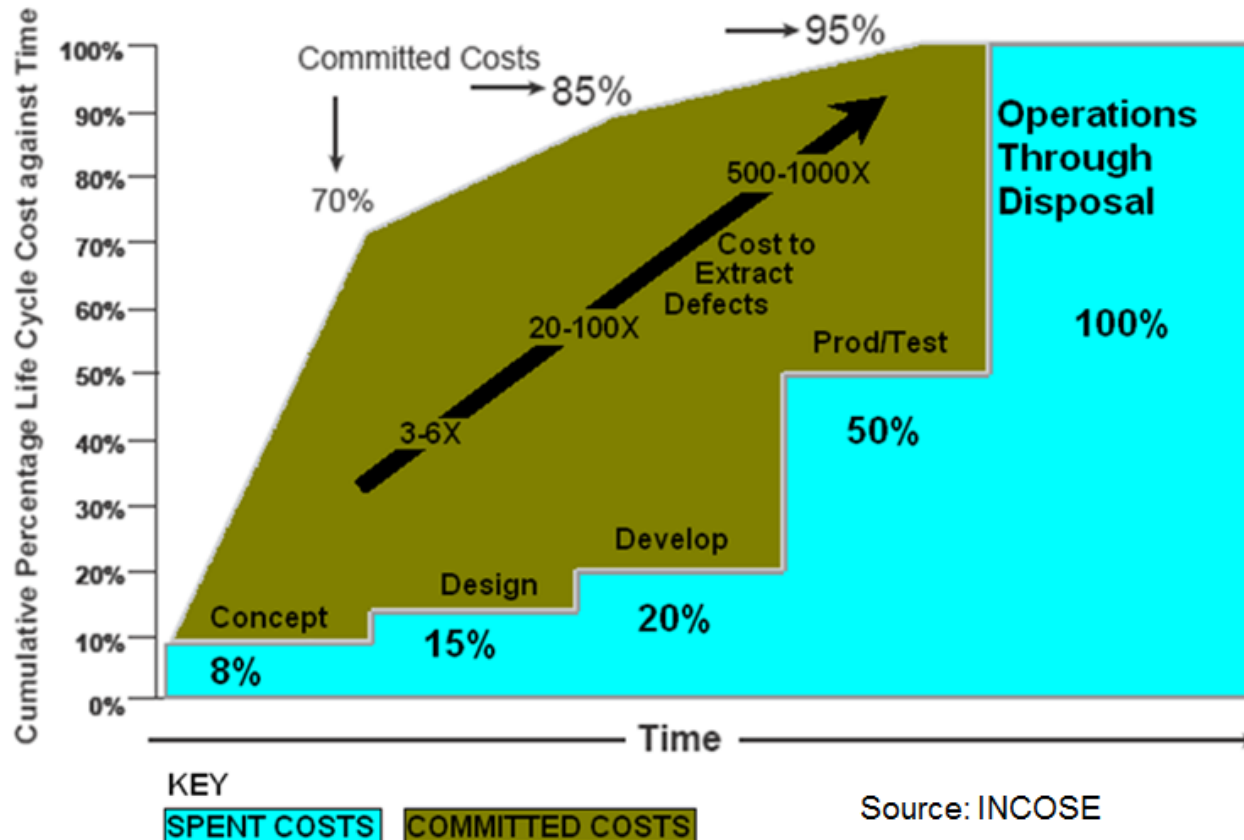
Why Is RM Required by Customer/Regulation?

RM = Risk Management

Risk Management Today

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

Effectiveness Costs



75% of companies surveyed have a RM process and use it

51% of them have suffered risk related loss or failure

Per our survey

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*



Risk Identification Today

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

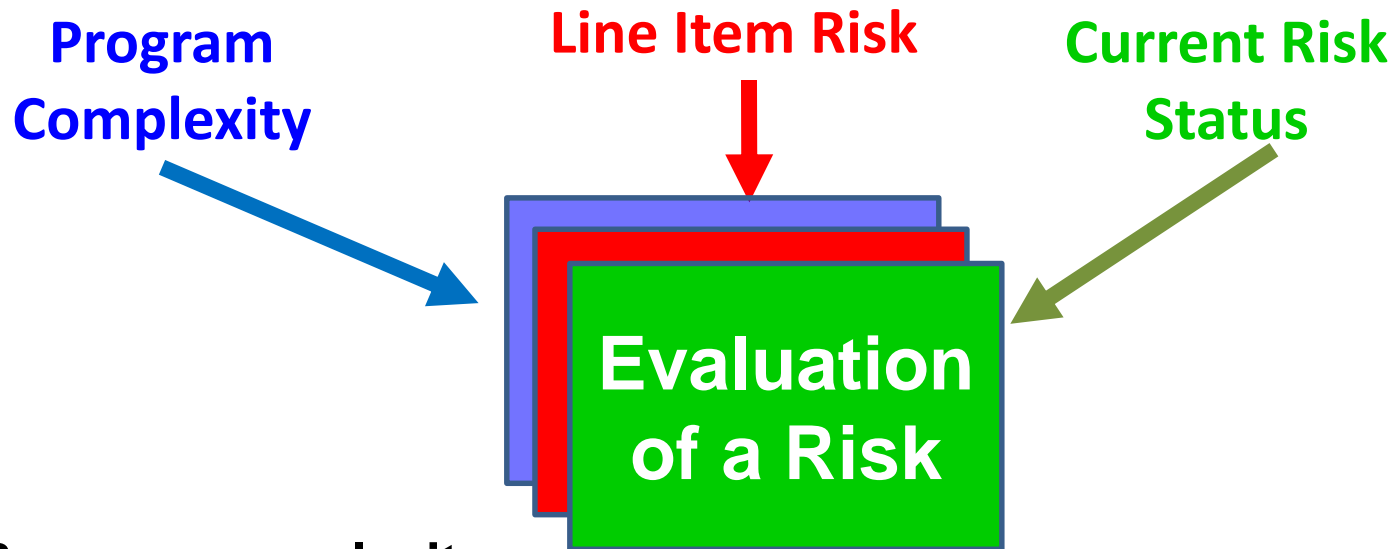
The Downside of Undiscovered Risks

- **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**

- **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**

Components of a Thorough Risk Evaluation



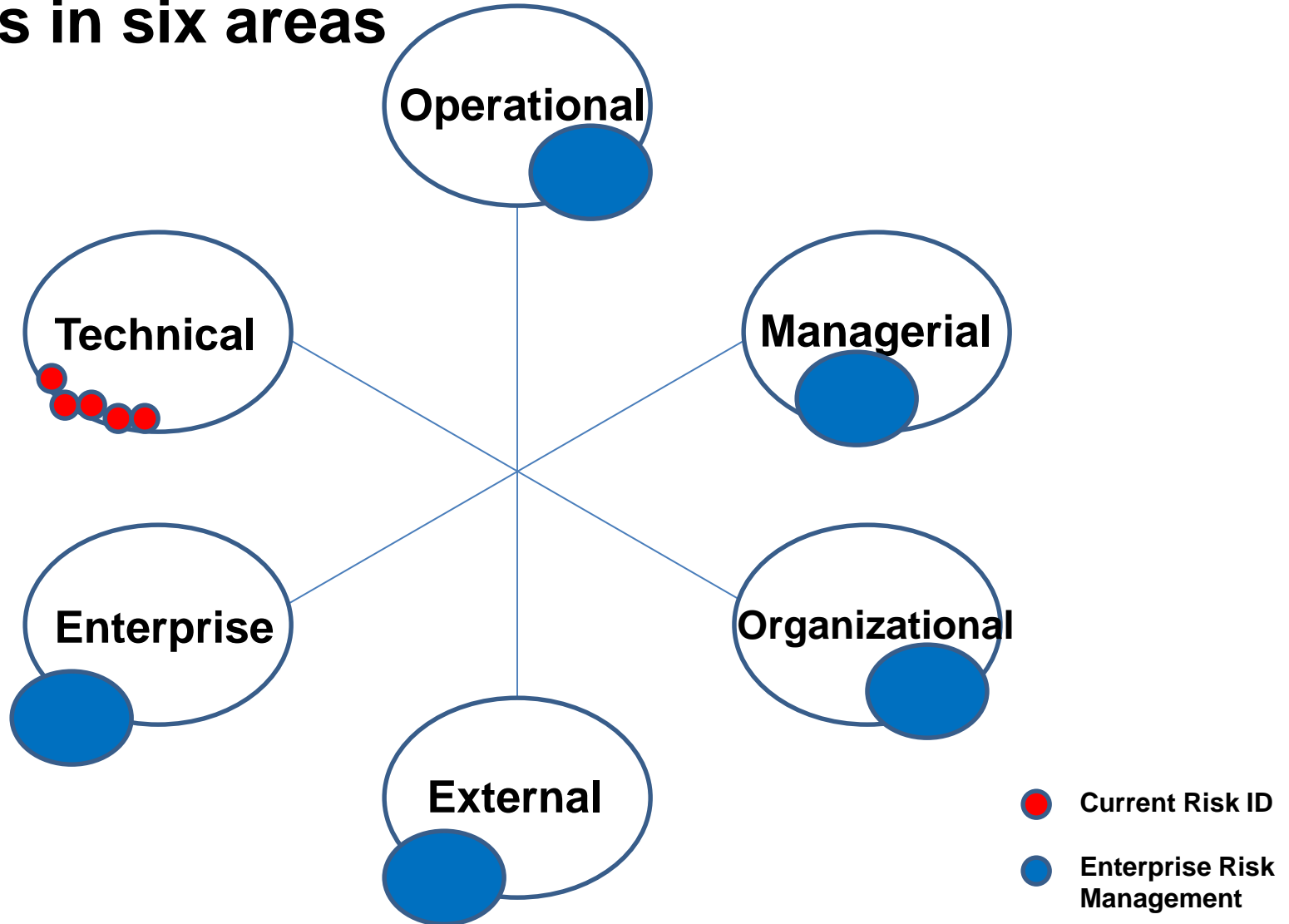
Program complexity

- Greater complexity = greater risk
- Simple, average, moderate, intermediate and high

Objective risk evaluation – two parts

- The risk line item
- Program status of the risk *at this time*

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 Management Processes
- Organizational Interest in Personnel Motivation
- 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 Reputation
- Enterprise Experience
- 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

Program Risk ID (PRID)



Changes the RM Paradigm

A web-based software tool

For One Program – trending through time

Across Many Programs - compare risk levels across programs

EXR6 - Funding

Select the risk level that most accurately describes your program.

Risk Levels

- 1.** Funding is completed for the program life cycle. There is no known threat to funding.
- 2.** Required funding is committed for the program. Allocations are completed for next year.
- 3.** Funding is allocated for out-years. There is some threat to continued funding at the required levels.
- 4.** There is no funding allocated for the out-years. There is a high threat to continued funding.
- 5.** Required funding is not committed for the program, and there is an extreme threat to present funding.
- N/A.** This risk is not applicable to the program

User Notes (Optional)

Enter any relevant comments to explain the choice that you selected above.

TR1 - Requirements Definition

Select the risk level that most accurately describes your program.

Risk Levels

- 1. System and user requirements are fully defined and formally agreed to by all stakeholders.
- 2. System and user requirements are partially defined; the remainder are to be defined in the short term and formally agreed to by all stakeholders.
- 3. System and user requirements are not defined, forcing the developer to make assumptions. Assumptions are informally agreed to by the stakeholders or users. Potential for definition of requirements in the short term exists.
- 4. System and user requirements are not defined, forcing the developer to make assumptions. Assumptions are informally agreed to by the stakeholders or users. There is no potential for definition of requirements for the long term.
- 5. System and user requirements are not defined, forcing the developer to make assumptions. There is no potential for definition of requirements for the long term.
- N/A.** This risk is not applicable to the program

MR11 - Management Experience

Select the risk level that most accurately describes your program.

Risk Levels

- 1. Similar work has been successfully completed more than once, and most of the senior management experience is still available.
- 2. Similar work has been successfully completed more than once, and some of the senior management experience is still available.
- 3. Similar programs have been successfully completed once, and some of the senior management experience is still available.
- 4. Similar programs have been successfully completed once, but most senior management experience is no longer available.
- 5. No similar programs have been successfully completed under existing senior management.
- N/A.** This risk is not applicable to the program

PRID Risk Organization

PRID Risk Hierarchy:



PRID Example:



Program RiskID

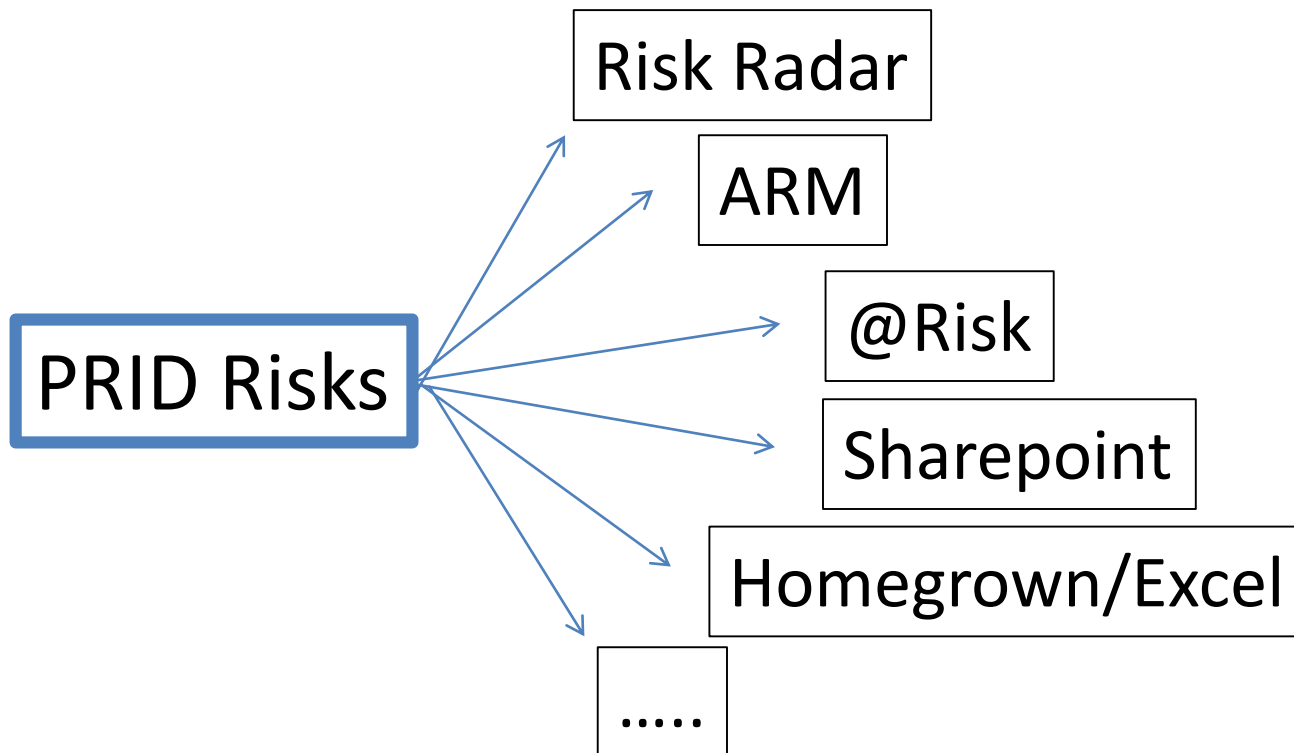
Demonstration and Reporting

- Trending allows measurement of risk mitigation efforts through subsequent analyses
 - changes in risk level = changes in scores
 - Portfolio Management
 - using a common standard makes common problems visible
 - which programs are in the most trouble?
- Enables better resource allocation

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

PRID tool reports become the input for other risk tools

- commercial, homegrown



Program Risk ID



www.programriskid.com



Who should we talk to in your organization? Referrals?