

# Risk Management Techniques for Complex Projects

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# Key Takeaways

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- Event-based Risk Methodology
- Six Steps to Success
- Recognizing Risks vs. Issues
- Risk mitigation and work scope
- Reaching out is a strength

# Introduction

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General Dynamics Canada has achieved a worldwide reputation for excellence.

Produces leading-edge, highly complex, technology-based, integrated solutions for land, airborne and maritime applications.

Customizes solutions to meet the most demanding requirements.



# Background

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- Effective management of medium to large, complex procurement and integration projects is difficult.
- Project staff tend to be overloaded and actively involved in a number of simultaneous and critical tasks.
- Project plans are not always read or followed.
- Key or emergent issues and risks within the project may be overlooked.



# The Challenge

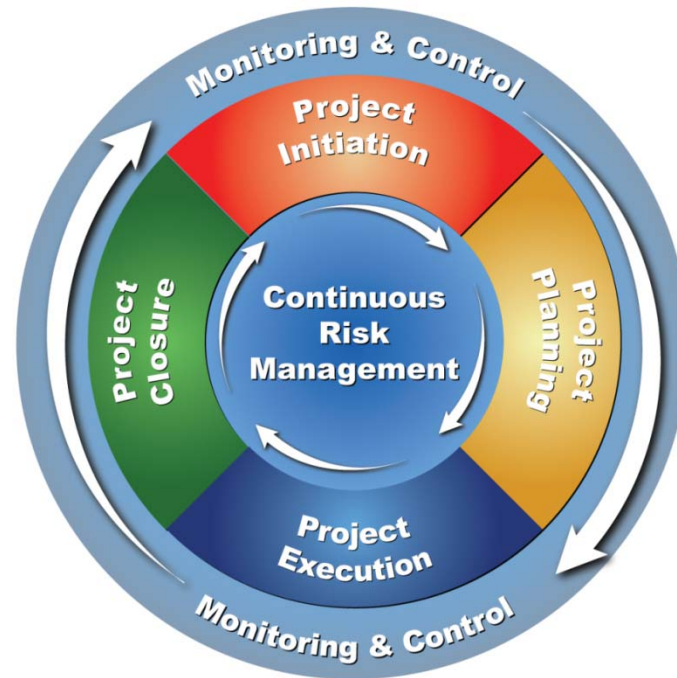
- To execute a project/program efficiently while focusing on goals and milestones to ensure the following:

- Schedule adherence
- Cost control
- Enhanced communication
- Satisfied stakeholders
- Overall acceptable risk



- Organizations and projects must focus on *what is important to control* vs. *what is easy to control*.

# Risk Management *is* Project Management



**Effective risk management is vital to project success**

# Event Based Risk Management

## Top-down Approach

- “Bottom-up” tendency may miss Big Picture

## Event-centric

- Focuses on key events/deliverables
- Avoids low-hanging fruit

## Inherent Schedule Analysis

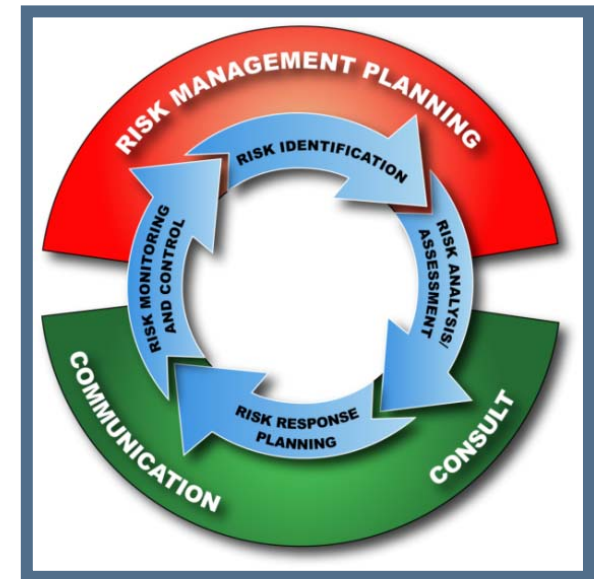
- Increases probability of success

## Consultative

- Leverages input from others with similar experiences

## Communications

- Increases visibility to stakeholders
- Improves Executive engagement



# The Circle of Life

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# Six Steps to Success

## Step 1: Develop an Executive Project Summary

- High-level view of the project with key activities, milestones, etc.

## Step 2: Develop a Critical Event Tree

- PM is concerned with top 20-25 events
- If these items are in good shape, the project is in good shape
- Forms basis of the risk work ahead

## Step 3: Schedule Risk Analysis

- Ensure above events have undergone Schedule Risk Analysis (SRA)

## Step 4: Develop Risk Tree and Risk Action Plans

- Create action plans for each critical event
- Ensure “meat on the bone” with quality actions and due dates
- Enter data in Risk Register
- Monitor risk actions by due date – Ensure all effort is captured in the work plan!

## Step 5: Hold Frequent Consultative Sessions

- Reviews leverage the skills and experience of the right people
- Reaching out is a strength not a weakness

## Step 6: Brief project and external audiences as required

- Transparency is key!

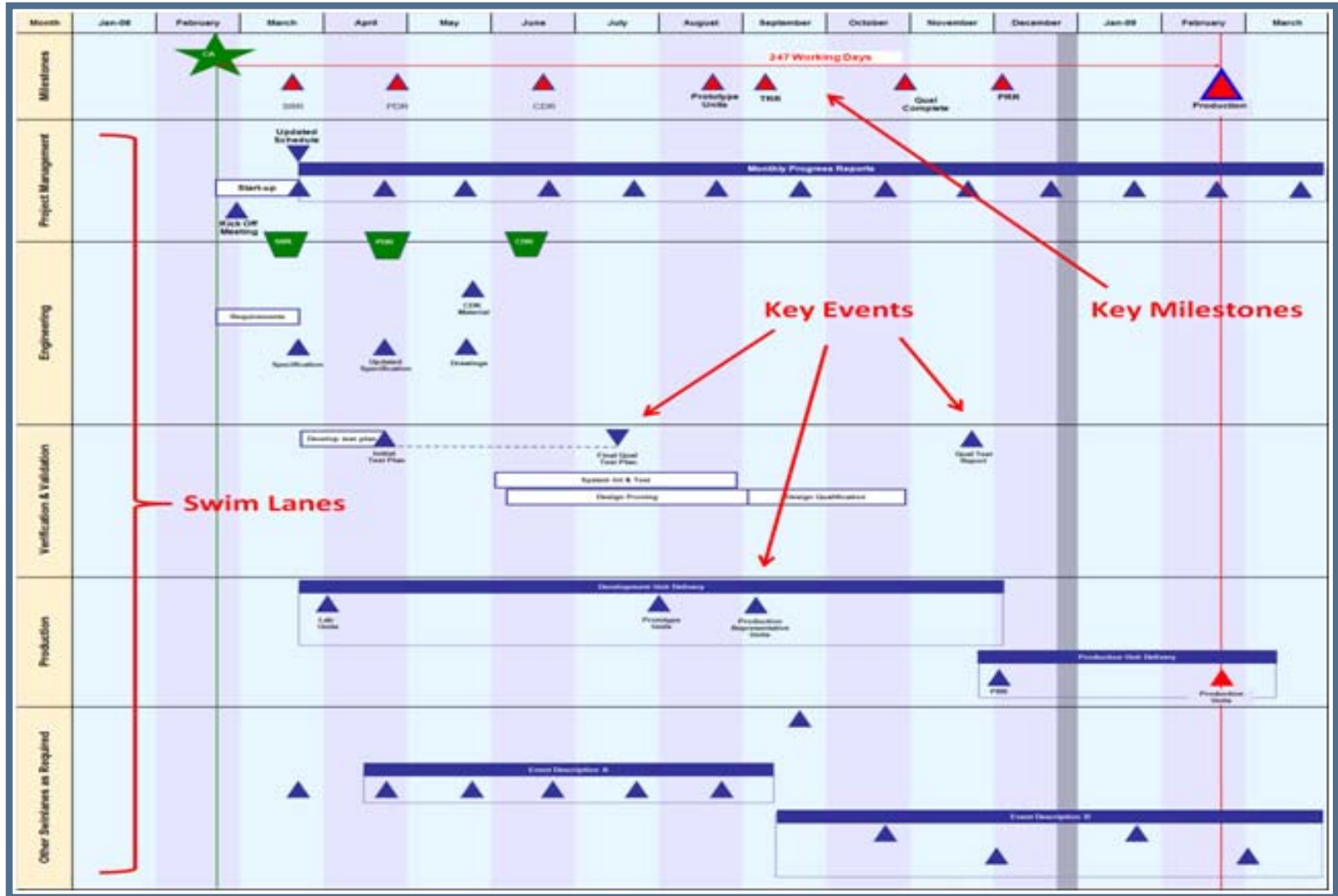
# Step 1: Executive Project Summary



High-level  
Single-page view  
Swim Lanes  
Milestones  
Key activities  
Business-oriented

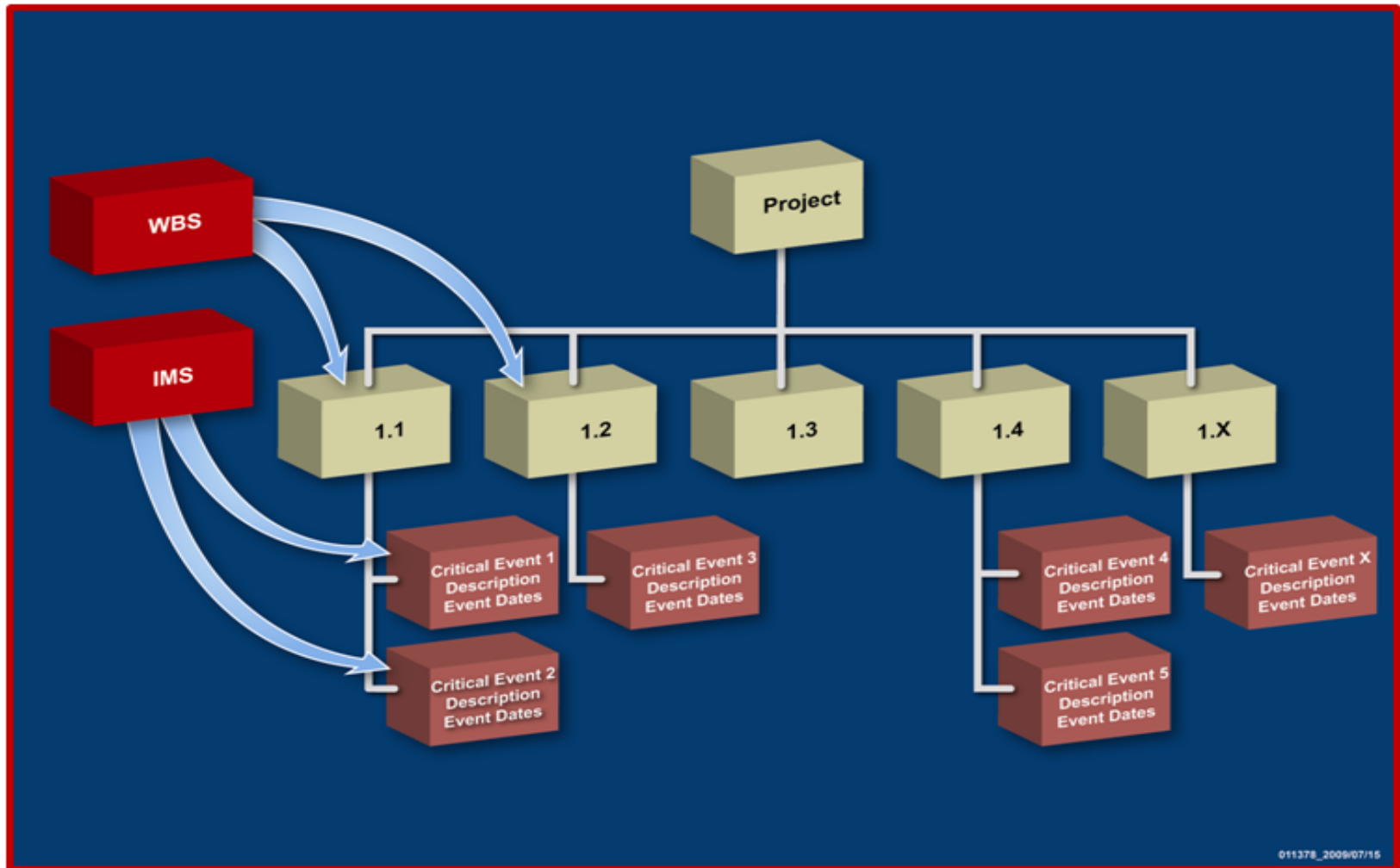
Clearly shows  
end dates and  
time remaining

# Executive Project Summary – A Closer Look





# WBS/IMS Link

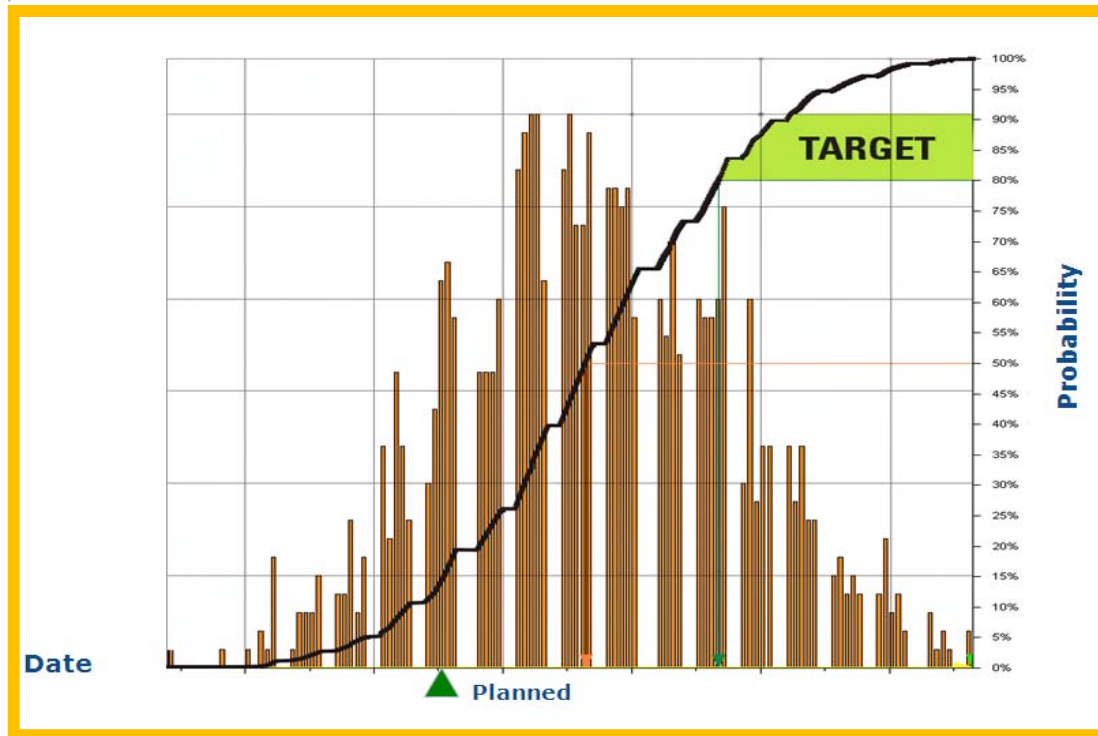


# Step 3: Schedule Risk Analysis

- Complete for each event on the Critical Event Tree
- Method to better address the question:  
"What chance do I have of finishing the event on time and within budget?"
- Outputs
  - Identification of issues in project or schedule structure
  - Confidence factors for meeting event dates as planned
  - Identification of near-critical paths that might not be apparent
- SRA is an iterative process
  - Outputs are fed back into development of the plan to acceptable level of event confidence



# Schedule Risk Analysis



Output is a distribution of the projected finish dates against the probability of meeting those dates

**SRA is an iterative process. In almost all cases, SRA projected finish dates occur later than planned and need to be reworked to be brought into the target range.**



## Step 4: Risk Tree and Risk Action Plans

- Treat each critical event with a risk of it **not occurring**
- Break the Cult of Optimism
- Develop action plans for each event
- Ensure “meat on the bone” with quality actions and due dates
- Requires work
- Risk = \$\$\$
- Enter data in Risk Register/Database
- Monitor risk actions by due date
- Ensure risk mitigation effort is in work plan



# Risk Tree



# Risk Action Plans and Impact on Work Scope

**Risk ID: 3**      **Risk Title**  
**There is a risk that <let what the risk is>**

**Cost Rank: X**  
**Sched Rank: Y**

**Due to <let the reasons the risk could be realized>**

**Resulting in <insert the consequence(s) of the risk, if realized>**

**Probability**       **Consequence** **Cost**  **\$K**

**Related Risks**       **Schedule**  **Months**

**Risk Owner**       **Max Risk**

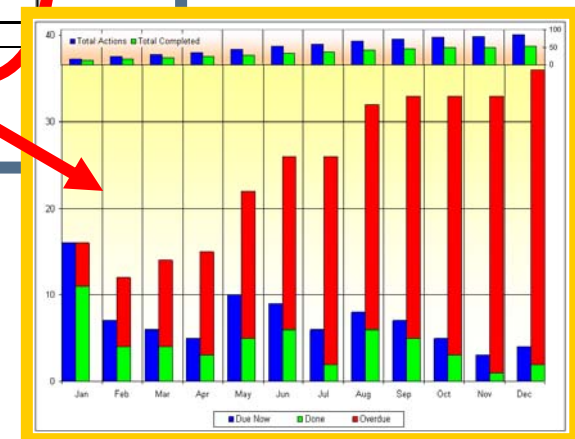
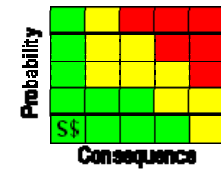
| Action | Actionee | Due |
|--------|----------|-----|
|        |          |     |
|        |          |     |
|        |          |     |
|        |          |     |
|        |          |     |
|        |          |     |

**Weighted Consequence**

**Cost (\$K)**

**Schedule (m)**

**Last Updated:**



# Risk versus Issue

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- Project Managers frequently confuse an issue with a risk
  - This can be a costly error and must be avoided
- A risk is in the future and you are planning to either avoid it or mitigate its effects
- An issue is a risk which has materialized and must be dealt with now
  - The effort associated with addressing the issue must be traceable to your work plan
- Significant issues are entered on the Risk Tree in the form of an event

# Step 5: Consultative Reviews

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- There is a very good chance that someone has experienced the risk or issue you are trying to address
  - You are not the first, you are not alone (although it might feel like it ...)
- Expert advice may be available in other areas of the organization or associations
  - Lessons Learned
- Reviews leverage skills and experience of the right people
- PMOs can assist in finding the required expertise

**Reaching out for advice or help is both a *strength* and a sign of PM maturity.**

# Step 6: Communications

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- Communication is key to EBRM success
  - Use of the Executive Project Summary, Critical Event Tree and Risk Tree as core elements of any project communication is beneficial.
- Communication tools provide:
  - Complete project overview on one slide
  - Spatial relationships of activities with focus on milestones and completion targets
  - Focus on key events and status
  - Stakeholder alignment
- Emphasize project goals and key events  
*frequently*

# Recap: Six Steps to Success

## Step 1: Develop an Executive Project Summary

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# Benefits

## Project Overview is formulated first

- Tool availability tends to force a deep dive too early.

## Key events are identified and agreed upon

- No Surprises

## Improved Risk Closure Criteria

- Risk is closed as soon as the critical event is completed and provides a convenient opportunity to review the lessons learned associated with an event.

## Scalable

- Equally applicable at proposal, execution, or complex stages.

## Scope Management

- Success through understanding.

## Communications

- Stakeholder harmonization.



# Review of Key Takeaways

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- ✓ Event-based Risk Methodology
- ✓ Six Steps to Success
- ✓ Recognizing Risks vs. Issues
- ✓ Risk Mitigation and Work Scope
- ✓ Reaching out is a Strength

# Summary

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Organizations and projects must focus on:

**What is important to control**

VS.

**What is easy to control**

EBRM is an invaluable management technique

EBRM is effective in keeping teams

- Aligned
- Focused on the right things

**Reaching out for advice or help is a strength**

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# Questions ?

# Contact Information

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