



CAPABILITY-BASED RISK-ASSESSMENT TOOL

PROFILED COMPANY



Estimated Annual Revenue: US\$32.0 Billion
Estimated Annual Spend: US\$18.0 Billion

Headquarters: Bethesda, MD

Lockheed Martin Corporation is the world's largest defense contractor. Its business segments are as follows: Aeronautics, which includes the F-16, F/A-22, and upcoming F-35 Joint Strike Fighter (JSF); Electronic Systems, which includes missiles, homeland security systems, and postal automation systems; Space Systems, which includes satellite design and construction, strategic missiles, and airborne defense systems; Integrated Systems & Solutions, which makes command, control, and communication systems and reconnaissance/surveillance systems; and Information & Technology Services.

Practice in Context

Given the increasing reliance of most companies on key suppliers, supplier risk management is of critical importance. Beyond solvency and liability-related supplier financial and business risk, effective risk management must consider supplier performance and technical risks that impact suppliers' ability to meet demand and scale their operations. Such risks are prevalent in a supply-constrained market, and few companies monitor such risks with any degree of regularity.

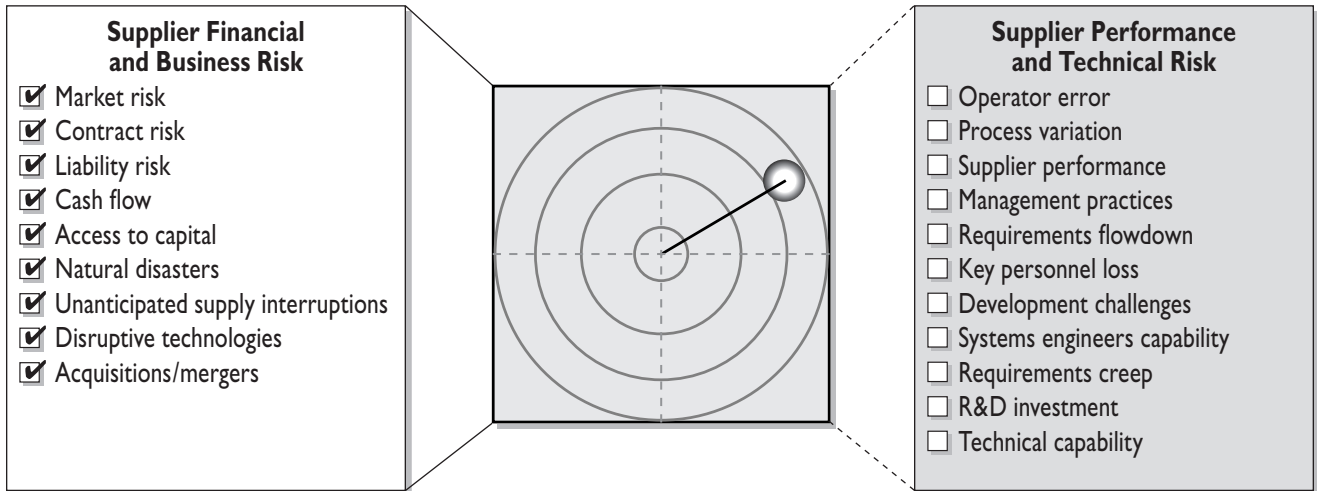
Lockheed Martin recognizes the potential dangers of an incomplete view of supplier risk and develops a three-step approach that addresses the challenges of successful supplier risk management:

- *Supplier Performance-Risk Catalog*: Overcomes the limited, financially oriented view of risk with a comprehensive index including performance and technical risks
- *Supplier Capability Audits*: Generates a well-informed assessment of suppliers' ability to perform under different or adverse circumstances using a consistent set of standards
- *Business Risk Monitor*: Provides easily accessible risk information, equipping supply managers to serve as effective risk advisors to different programs or business units

NEW TARGETS ACQUIRED

Noting that traditional supplier risk management overlooks potentially severe operational risks...

Expanded Supplier Risk Focus
Lockheed Martin, 2004



...Procurement builds a risk-assessment system to improve business supplier management performance

Practice Overview

Challenge #1
Fail to uncover significant supplier exposures due to limited view on risk

Challenge #2
Unable to properly assess supplier capabilities to enable effective risk mitigation

Challenge #3
Lack data access and clear accountability for ongoing risk monitoring

**Component #1
Supplier Performance-Risk Catalog**



Index of 17 critical supplier process areas for capability-based risk assessment

**Component #2
Supplier Capability Audits**



Objective reviews of supplier capabilities based on well-defined criteria and required evidence

**Component #3
Business Risk Monitor**



Easily accessible information and clear accountability for ongoing risk management

Component #1: Supplier Performance-Risk Catalog

Managing the full spectrum of supplier operational risks requires companies to look beyond their direct supplier relationships to understand the risks inherent to suppliers' own supply chains.

Lockheed Martin evaluates a wide variety of supplier capabilities that move beyond financial solvency and then weights them according to potential impact on the relationship to gain a richer understanding of suppliers' potential sources of performance failure.

Lockheed Martin's Risk-Based Supplier-Assessment Tool covers 17 critical and industry-neutral supplier operational processes, such as requirements management and project planning. In addition, the risk assessment considers suppliers' own supplier and risk management capabilities. The company examines each of these areas to get a complete view of operational risk and determine whether the supplier can deliver on its promises.

The system scores each risk area on a scale from 0 to 20 (lower performance means a lower score). Individual risk areas receive different weights (that sum to 100%) based on importance to the particular business unit or for a specific commodity category. The risk scores fall into one of four categories:

- Deal-breaker
- Fix before proceeding
- Acceptable, but alert the business unit for ongoing management
- Currently mitigated

Lockheed Martin does not use this process with every supplier; it limits usage to situations in which the supplier is unfamiliar and the purchase is critical.

Component #1: Supplier Performance-Risk Catalog



COVERING ALL THE BASES

Lockheed Martin's Risk Index Sharpens Focus and Preparedness Across a Broad Set of Supplier Performance Risks

Risk-Based Supplier Assessment Categories

Area	Score (0-20)	Weighting	Weighted Score
1. Requirements Management	18	8%	1.44
2. Project Planning	15	12%	1.80
3. Project Monitor and Control	11	11%	1.21
4. Supplier Agreement Management	19	2%	0.38
5. Measurement and Analysis	10	2%	0.20
6. Process and Product Quality Assurance	13	10%	1.30
7. Configuration Management	20	5%	1.00
8. Requirements Development	9	4%	0.36
9. Technical Solution	14	6%	0.84
10. Product Integration	18	10%	1.80
11. Verification	16	2%	0.32
12. Validation	11	2%	0.22
13. Process Management	19	6%	1.14
14. Organizational Training	8	3%	0.24
15. Integrated Project Management	17	8%	1.36
16. Risk Management	12	5%	0.60
17. Decision Analysis and Resolution	16	4%	0.64
Total		100%	14.85

Based on the score, risks are categorized into four different levels:
 0-5: Deal-Breaker
 6-10: Fix Before Proceeding
 11-15: Acceptable, but Alert Business Unit for Ongoing Management
 16-20: Currently Mitigated

Includes assessments of suppliers' own risk management capabilities

Weighted based on business unit's top priorities

Catalog Design Guidelines

1. Include business unit and functional customers in the catalog design process
2. Balance catalog depth with assessment practicality
3. Update on a regular basis to minimize gaps in coverage

Application Decision Rules

Use When...

- ✓ Low familiarity with supplier or product line
- ✓ New or complex technology introduced
- ✓ Large spend on component or with supplier overall
- ✓ Product is critical input

Component #2: Supplier Capability Audits

To capture the full benefit of risk-assessment tools, they must be user-friendly and integrate seamlessly into staff workflow.

Lockheed Martin reduces the subjectivity of the assessment process and simplifies deployment by providing supply management staff with clear guidelines for supplier evaluation and a template containing specific questions to answer. The screenshot on the facing page provides some examples of specific questions that staff ask and offers guidance on what to listen for in a correct answer and objective evidence that demonstrates an adequate response.

Assessment questions examine the following information:

- Descriptions of supplier processes
- Compliance and control mechanisms in use
- Extent of involvement by different business units or functional partners
- Specific supplier management tools

By giving users a consistent set of questions and guidelines, Lockheed Martin can objectively evaluate how suppliers are likely to perform under changing circumstances, gain a comprehensive supply base perspective, and focus on deploying strategies to mitigate the identified risks.

Component #2: Supplier Capability Audits



FACT-BASED RISK DISCOVERY

Clear Guidelines on Risk Criteria and Required Evidence Ensure Objective and Accurate Supplier Assessments

Risk-Based Supplier-Assessment Tool

Risk Area 1: Requirements Management

< Main >
Show Hints

Description:

The Purpose of **Requirements Management (REQM)** is to manage the requirements of the project's products and product components by:

1. **Developing an understanding of the requirements** from the provider.
2. **Obtaining commitment** from project participants.
3. **Managing changes** to requirements as they evolve.
4. **Maintaining traceability** between requirements and plans and work products

•	Question	Listen For	Objective Evidence	Auditor Notes	Result
1.0	How do you manage requirements on your projects?	Change control, meeting with "customer" to understand intent	1. Meeting minutes from working group or technical exchange meetings 2. Requirements Management Policy Tools, Process/Methodology, Reports		
1.1	How do you achieve commitment to the requirements within the project(s)?	Internal reviews with affected groups—Systems Engineering, Software, Quality Assurance, Configuration Management, etc.	Signoff sheets from meeting with list of "organizations represented" – not just names (would need an Org. chart to trace)		
1.2	How do you ensure that a project's plans and work products are kept consistent with the project's requirements?	Meetings with topics including documents and other work products	1. Checklists that include documents to be reviewed for changes from requirement changes 2. Group reviews/minutes		
1.3	Describe your change control process.	A process or procedure A "formal" review Placing under Configuration Management Control Existence of a Change Control Board	1. Procedure or documented process 2. Signoff sheet form (request for change) 3. Change Control Board minutes and reports		
1.4	What tools are utilized to support the requirements management activities during the engineering development life-cycle?	Tools like DOORS, RTM, MS Access, Excel	Tool Application Reports		

Individual process area assessments define criteria and evidence to ensure objective risk scoring.

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Topic Score	
Topic Penetration	0
Max Possible Penetration	0

Introduction
Assessment Summary
Risk Area 1
Risk Area 2
Risk Area 3
Risk Area 4

PROCESS OVERVIEW

Current

- Part of on-site supplier audit (1 to 3 days)
- In-person interviews and facility inspections
- Information housed with relevant programs

Future

- Online supplier questionnaire and remote interviews
- Statistical analysis of company performance
- Information housed in easily accessible central data warehouse

**GENERAL QUESTIONS
FOR EACH RISK ATTRIBUTE**

1. Process descriptions
2. Process control mechanisms
3. Business units/functions engaged
4. Tools deployed

Source: Lockheed Martin Corporation; Procurement Strategy Council research.

Component #3: Business Risk Monitor

Once a company assesses its suppliers and identifies specific risks, it needs a comprehensive plan for mitigating and monitoring risk, assigning clear accountability and providing access to necessary information.

Lockheed Martin's risk-monitoring process consists of three steps:

1. *Risk Triage*: The assessment tool classifies risks into appropriate categories for different levels of management.
2. *Risk Monitoring*: An owner within the business unit tracks identified risks using support tools, including an internal supplier management database (provides links to risk management information), and delivers periodic risk briefings (focusing on the performance and exposure of each top supplier).
3. *Risk Mitigation*: A business unit risk register details tracking activities, and a closure report documents mitigation steps.

Lockheed Martin eases adoption and overcomes change management issues by casting the tool as a system enhancement rather than an additional new system that users must learn.

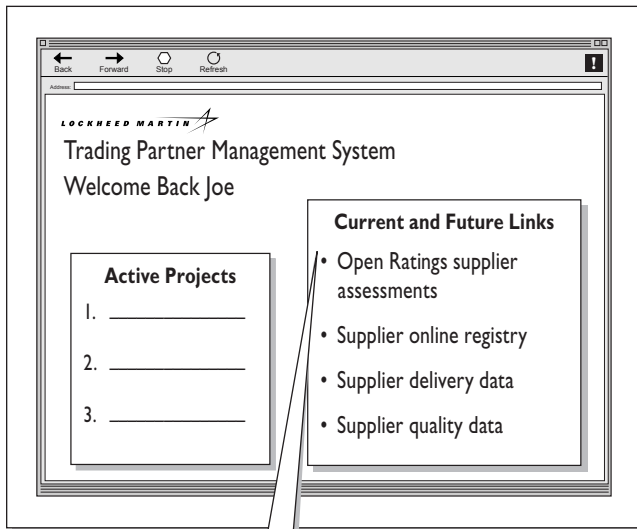
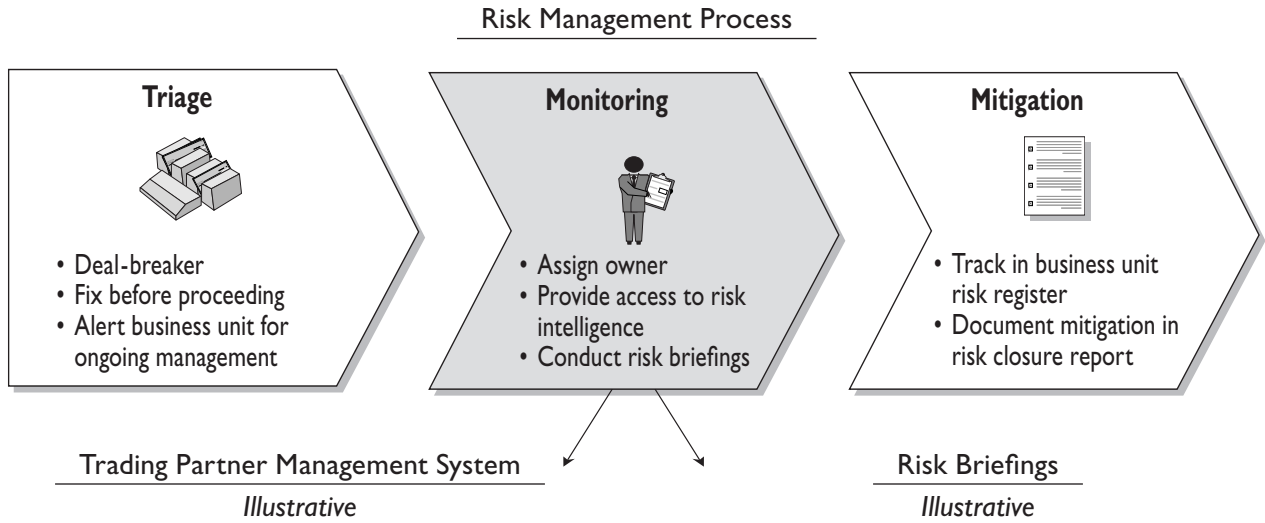
For further risk management-support tools, see the toolkit appendix pages 124–129.

Component #3: Business Risk Monitor

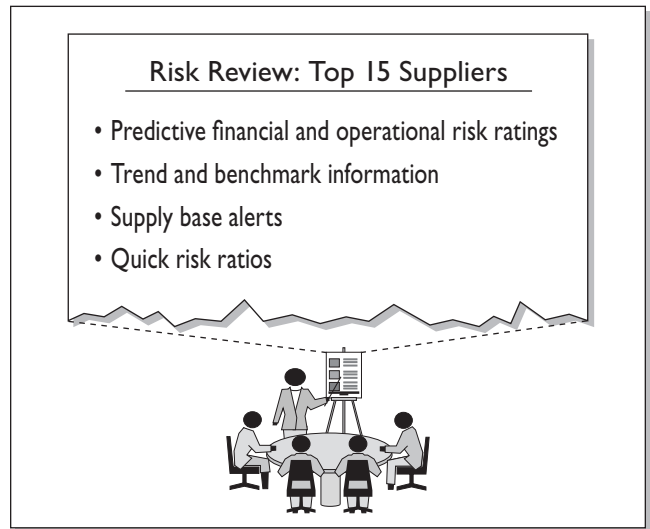


AT YOUR FINGERTIPS

**Clear Accountability and Easily Accessible Information
Ensure Smooth Handoff and Continued Risk Monitoring**



Predictive financial and operational indicators are linked to buyers' desktops enabling ongoing, efficient line support.



EMBEDDING IN WORKFLOW

“The last thing that they want to hear out in the field is, ‘Here is another spot where you can go to look up information.’ We were basically able to go to people and say, ‘We didn’t add a new system—we added a new feature.’ This was how we avoided major issues in rolling it out.”

Director, Supplier Management
Lockheed Martin Corporation

Cases in Point

The ultimate measure of a risk management process is the ability to mitigate the consequences of adverse events—avoiding problems before they occur based on specific decisions.

The comprehensiveness of Lockheed Martin's approach allows it to appropriately mitigate supplier solvency and operating capability risks. In one case, illustrated on the left side of the facing page, risk monitoring enables the company to get early warning and successfully extricate itself from a relationship with a supplier potentially facing bankruptcy.

In another instance, on the right side of the page, Lockheed Martin looks for a supplier to manufacture an enhanced, next-generation version of a current component. Lockheed Martin initially expects to use the current supplier based on the current integration of operations between the two companies and supplier assurances that it can perform to specification on the new component.

The procurement group performs a capability-based risk assessment and finds that, in reality, the supplier lacks the engineering development capability to bring the new component to the production stage. Ultimately, Lockheed Martin chooses an alternative supplier and, based on the strict progress payments and performance incentives in the contract, avoids project overruns estimated to potentially cost 30% of the profit to be earned on the program.

DODGING BULLETS

Lockheed Martin's Supplier Risk-Assessment System Results in Successful Mitigation of Considerable Supply Base Threats

Financial Risk Illustrative

Situation

Risk monitoring uncovers financial viability concern at key project supplier with whom Lockheed Martin has jointly developed intellectual property

Action

Project team "scrambles" legal support to avert potential loss of critical product due to inclusion in the impending bankruptcy

Result

Lockheed Martin is successful in extricating product prior to supplier bankruptcy proceedings, avoiding significant rework

Performance Risk Illustrative

Situation

Current component supplier bids on job to manufacture enhanced version of component

Action

Supplier operational capability assessment uncovers insufficient development capabilities at current supplier and secures an alternative capable of developing component enhancement to specifications on tight delivery time frame

Result

Net Margin

10% 7% Loss Avoided

Project overruns avoided, eliminating a potential 30-percentage point reduction in project profit margin