Lesson Introduction

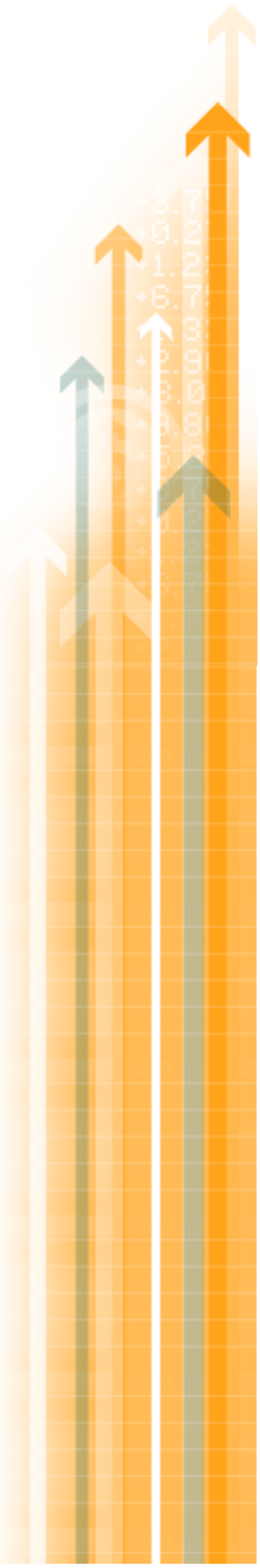
Enterprise Analysis

How are projects formed? Where do your organization's managers get their ideas for projects? How can you make sure that your project has a chance of being successful? It all begins with enterprise analysis.

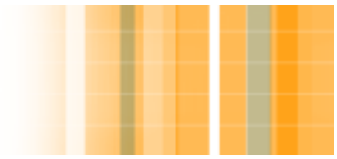
Enterprise analysis is a key knowledge area in the IIBA® Business Analysis Body of Knowledge (BABOK®) and serves as a spawning ground for new projects. When a company's officers decide to seek new business opportunities, re-evaluate the business architecture, or expand the company's foundational infrastructure, they turn to enterprise analysis as a means of capturing the organizational vision of the future and bringing it down to Earth in the form of tangible goals and objectives. It is through enterprise analysis that ***business requirements*** are identified and documented.

Enterprise analysis provides a context in which the organization can:

- Identify and document specific business needs, problems or opportunities
- Assess the organization capabilities required to meet these needs
- Gather and analyze information related to those objectives to determine which ones are more likely to succeed
- Determine which objectives (and potential related projects) are more likely to help the organization achieve its vision and mission



Check out this video on the different types of analyses that organizations do to find business opportunities.

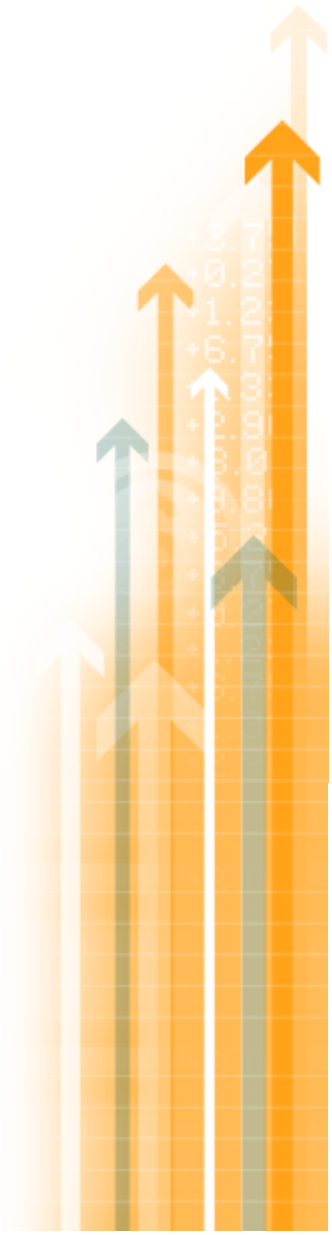


What's a Project, Anyway?

A word about projects... Most of us have a reasonably good idea of what a project is. Just to make sure, we'll develop a short working definition here so we all have the same concept in mind as we begin to explore the business analyst's role in a project.

A project is a unique set of tasks or activities that lead to a desired outcome. It's that simple! Well, actually it's not, but for now we can rely on this definition to get started. One important idea to remember is that ***projects are done only once!*** That is, they have a well-defined starting point and a well-defined ending point. Any work that is ongoing and repeatable is just plain work - it's not a project! ***Designing*** a new automobile is a project. ***Manufacturing*** an automobile is not!

Lesson Objectives



This lesson focuses on the initial steps that lead to the formulation of a *project*. We'll look at the details of planning and carrying out the business analysis activities for a project in the next lessons; for now, we're interested in what goes on leading up to the moment when someone says, "We have a project!"

By definition, "a ***solution*** meets a business need by resolving a problem or allowing an organization to take advantage of an opportunity" (BABOK®).

The scope of a solution will then serve as the basis for the scope of the project that implements this solution. In general, a solution could spawn a single project or consist of multiple projects.

Upon completing this lesson, you should be able to:

- Define the concept of a solution and of a project
- Learn how a business analyst defines the business need for an organization in response to a business problem or to take advantage of a business opportunity
- Determine the most feasible business solution approach to meet this need
- Define the scope of a proposed solution
- Define the business case of a proposed solution, including conducting the preliminary risk assessment in order to determine if the project carries more risk than the organization is willing to bear
- Prepare a business case for a simple project

Business Goals and Objectives

At the highest levels of leadership in an organization, executive management defines the future of the organization by establishing a vision, a mission, and a collection of strategic goals designed to achieve the vision. These strategic goals consist of well- organized activities that are both actionable and measurable, and designed to achieve specific results. The goals and related activities are captured in a formal plan that outlines specific details yet allows the flexibility to deal with unexpected opportunities or challenges.

Many strategic goals have themes such as reducing staffing costs by using information technology more effectively, improving customer service to retain existing customers and attract new ones, or centralizing call center activities to achieve a greater economy of scale. These strategic goals have a number of dimensions to consider:

- Financial focus (such as increasing revenue or reducing expenses)
- Customer focus (such as providing better service or increasing the number of repeat customers)
- Internal focus (such as improving operational efficiency)
- Innovation focus (such as developing new products or enhancing employees' skills)

Once management identifies a set of strategic goals, decision makers need to narrow their scope and focus specifically on the goals that are most closely in alignment with the organizational vision and most likely to contribute successfully to achieving that vision.

These business goals and objectives, along with stated requirements from key stakeholders allow for the definition of the business need for the organization.

This is where business analysts enter the scene.

What's a business need?

The Business Analyst Role

Senior-level business analysts often perform research activities (such as conducting competitive analyses) and provide the results directly to upper management. In addition, business analysts often help organize and moderate strategic planning and goal-setting sessions allowing managers to focus on developing new ideas rather than on the process of eliciting those ideas. Once management has identified a set of strategic goals and formulated strategies for achieving them, business analysts can begin translating those strategies into proposed business solutions.

Key aspects of the business analyst role include:

- Assisting key stakeholders (people who are affected by a particular proposed business strategy) and subject matter experts in defining business requirements
- Providing management with the information needed to make decisions about strategies and projects
- Identifying and evaluating possible solutions that will meet the business needs of the organization

Business Analyst Activities

Typical enterprise analysis activities include:

- Defining the business needs of an organization
- Assessing capability gaps
- Determining the solution approach
- Defining the solution scope
- Defining the business case

We'll explore each of these activities in more detail later in this lesson.

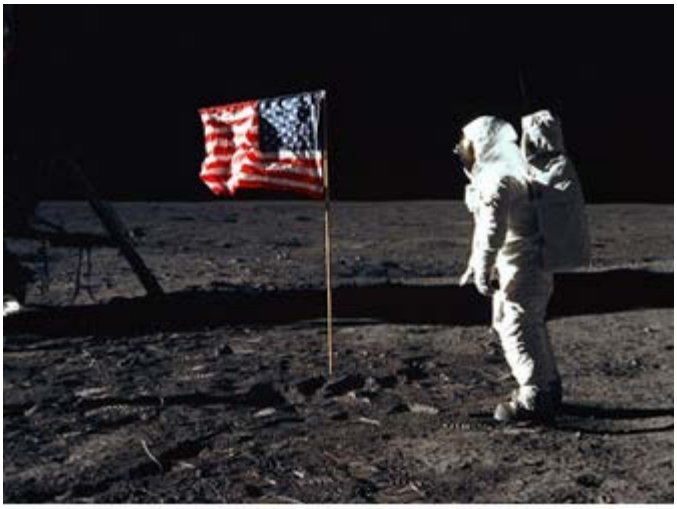
Rigor of Analysis

Before looking at the individual enterprise analysis activities, let's take a look at how a business analyst determines the amount of effort she should put into a particular analysis.

Obviously, a very expensive, highly visible project needs an exceptionally thorough and well-documented analysis. However, smaller projects that pose little risk to an organization if they fail don't merit the same level of attention (or expense). The fundamental objective is to provide decision makers with just the right amount of information needed to draw a conclusion, not too much and not too little. The factors that determine how rigorous the analysis needs to include:

- Degree of risk
- Length of project
- Complexity of project
- Size (or potential impact) of project
- Amount of change a project will introduce
- Dependencies on other projects or operations

Examples of Analysis



NASA/courtesy of nasaimages.org

Before looking at the individual enterprise analysis activities, let's practice determining the amount of rigor needed by looking at a couple of examples.

Putting a man on the moon, for instance, was very risky, had a long time line, involved many new and hitherto unproven technologies, involved thousands of people, and introduced new technologies into the marketplace that over time spawned new industries and consumer buying preferences.

On the other hand, a project such as **painting your bedroom** has minimal risk (other than having to sleep in the living room an extra night if your spouse doesn't like the color you chose and you have to paint the room a second time), can be completed in an afternoon, involves simple concepts and relatively simple skills, is quite small in scope, changes little about how the room is used, and is generally independent of other projects.

Obviously, a project as large as a manned mission to the moon warrants an extremely thorough analysis while the bedroom painting project demands little more analysis than deciding the color of the paint.

Granted, this pair of examples doesn't require much analysis to decide which project needs the most analysis! When you need to evaluate two very similar projects, however, things get trickier. The stakeholders need to decide which aspects of the projects are most important and then base the analysis on those aspects.

Self Check

1. Which of the following is not a typical enterprise analysis activity?

a. ○ Developing a diagram showing how different departments within the company communicate with each other.

b. ○ Identifying new products that your company can offer based on an analysis of local market demand.

c. ○ Creating an advertising campaign for your company's products.

Define Business Need

As we mentioned earlier, the ***business need*** defines the problem that the business analyst is trying to find a solution for. A business need describes a problem that the organization is or is likely to face, or an opportunity that it has not taken, and the desired outcome. The business need will guide the identification and definition of possible solutions.

Why define business need? Because we need to *identify* and *define* why a change to the organizational systems is required. The way the business need is defined determines which alternative solutions will be considered, which stakeholders will be consulted, and which solution approaches will be evaluated.

Defining business need is a critical step during enterprise analysis since all other business analysis efforts rely on it for their activities. Can you think of an example when the business need was not clearly identified and defined? What happened to your project then?

Where Do Business Needs Come From?

Business needs can be generated at several levels of an organization, as shown in the graphic below.

It is also important for the business analyst to be inquisitive about the problem statement in order to ensure that the correct problem is being solved and all possible solution options are being considered. Furthermore, as the business analyst elicits business requirements, he needs to make sure that stakeholders are stating their needs as opposed to describing possible solutions. This way, the business analyst can correctly define the business need and thus determine the possible solution approach to meet this need.

Assess Capability Gaps

After the business need is accurately identified, the organization needs to assess whether its current capabilities are adequate to meet that need. It also needs to identify whether any gaps exist that would prevent it from achieving its desired outcome.

The business analyst will research the current capabilities of the organization and assess them against the desired objectives to determine if the organization currently has the capability to meet the business need. If a gap exists, the organization can launch a project to acquire the necessary capability. Can you think of a project that required a hardware or software upgrade before it could be started? That's the idea behind assessing capability gaps!

Effects of Assessing Capability Gaps

Here are some components of the enterprise that may need to change as a result of assessing capability gaps:

- Business processes
- Functions
- Lines of business
- Organization structures
- Staff competencies
- Knowledge and skills
- Training
- Facilities
- Desktop tools
- Organization locations
- Data and information
- Application systems and/or technology infrastructure

Can you think of other components? What about your organization? What changes have you observed in response to capability gaps?

Determine Solution Approach

After the business need is identified and an assessment of the current capabilities is generated, the business analyst is ready to look at determining the most viable solution approach to meet the business need.

Some possible approaches include:

- Utilizing additional capabilities that are already available within the organization (is there an unused portion of a solution you don't use?)
- Purchasing or leasing a commercial off-the-shelf (COTS) application
- Designing and developing custom software
- Adding resources to the business or making organizational changes
- Changing a business procedure or process
- Partnering with other organizations (including a customer or supplier)
- Outsourcing the work

Feasibility Analysis

A *technique* that is used in determining the solution approach is to conduct *feasibility analysis*, also called feasibility studies. The business analyst conducting the feasibility study takes information from the enterprise analysis document and works with various stakeholders to identify potential solution options. (As you recall, the enterprise analysis document includes organizational charts, data flow diagrams, business process diagrams, and other documents that describe the organization's mission, vision, and goals.)

During their work sessions, analysts and stakeholders may engage in brainstorming, creating work breakdown structures (lists of steps for developing a solution), reviewing existing business processes, and so forth - all with the goal of creating a list of reasonable solutions.

Next, the business analyst evaluates the feasibility of each proposed solution using information gleaned from such sources as:

- Market surveys (to determine public acceptance of a solution)
- Technology availability assessments (to determine if the technology to implement a solution does, in fact, exist)
- Risk identification (to identify what can go wrong during implementation and also what could happen by not pursuing a solution)
- Competitive analyses (to explore whether other organizations in the same line of business are using the proposed solution)
- Environmental impact evaluations (to determine how severely a proposed solution might harm the environment and subject the project to regulatory oversight)
- Cost-benefit analyses (to see if the benefits of implementing the project outweigh the costs in intangible as well as financial terms)

Conducting Feasibility Analysis

A feasibility analysis determines how likely it is that a proposed solution will be successful in satisfying a particular business need or objective. The study should examine financial, functional, and technical aspects and ultimately lead to the creation of a formal business case that will provide the information upper management needs to make a go/no-go decision. All three aspects are essential because any one of them might prevent the project from being completed successfully.

Decision makers must weigh the benefits to be gained by implementing the project against the risk of expending effort and time with little to show at the end.

Example of Feasibility Analysis

Let's consider a company that imports hardware such as door knobs, hinges, locks, and security systems from various manufacturers in China. This company wishes to become a supplier to Wal-Mart, which requires its major suppliers to use Radio Frequency Identification Device (RFID) technology to track pallets through the supply chain.

Is it feasible for the company to begin doing this? First, the company needs to estimate the increase in sales it would experience if it became a Wal-Mart supplier. Next it needs to evaluate the cost of implementing an RFID tracking system that meets Wal-Mart's requirements (which are well-defined, incidentally) in terms of the total cost of coming into compliance and the impact to ongoing business during the RFID implementation phase

Example of Feasibility Analysis

Business analysts are often called upon to carry out feasibility analysis, or to work closely with the process owners who are conducting feasibility analysis. The business analyst must be familiar with:

- Financial analysis techniques
- The organization's mission, vision, and goals
- The organization's policies and procedures
- The organization's technology infrastructure (this often means IT, specifically)

Of course, many common business skills are needed including:

- Research and information analysis skills
- The ability to plan and coordinate the required activities
- The ability to organize information reliably and efficiently
- Leadership skills and the ability to motivate and organize a staff of employees
- The ability to manage change

In most situations, business analysts will have to perform feasibility studies of several options for one business need. As you can imagine, superior organizational skills are quite essential!

Man On the Moon Example

As an example of a feasibility analysis, let's take another look at the 1960's project of "putting a man on the moon." The complete sentence from President Kennedy's well-known speech to Congress, given on May 25, 1961, is:

"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth."

Watch President Kennedy give his famous speech to Congress.

This sentence spelled out just about all the requirements anyone needed. The goal was clearly defined and the deadline for achieving it was equally clear. (For now, let's ignore the money aspect of the triple constraint!) What kinds of questions did NASA need to ask when doing the first feasibility analysis?

Examining NASA's Charge

NASA/courtesy of nasaimages.org

First, NASA had to evaluate their existing technologies and capabilities, and then start identifying where new technologies and capabilities were needed. For example, nobody had sent manned spacecraft beyond Earth's orbit so the technologies needed to guide spacecraft with great precision over relatively long distances and to sustain astronauts (food and air) for what would be a long period of time needed to be developed. However, individual components of those technologies already existed - they simply had not been assembled in quite the way needed for a manned mission to the moon. In addition, the U.S. (and the Soviets, for that matter), had access to former German scientists who had been working on rocket technologies for the Nazis during World War II. These scientists were to prove instrumental in accelerating the development of rocket science for their adopted countries.

Next, NASA had to assess the proposed timeline and determine if it could assemble sufficient resources (in terms of hardware and people-power) to be successful within the time constraint. In addition to the German scientists and engineers mentioned above, numerous U.S. aerospace corporations had the ability to develop new rockets and related technologies because of their experience building aircraft for World War II and the Korean War.

The Glory Days of Large Budgets

The final matter to consider was cost. Since the U.S. government was fully supporting the lunar landing effort and considered it to be pivotal for national prestige as well as defense, NASA knew that they could count on a steady supply of money to pay for their efforts.

So, with these three areas - technology, resources, and funding - accounted for, NASA decided that it was indeed feasible to move forward with the project.

Self Check

1. **Which of the following questions are appropriate for a preliminary feasibility study?**
   a. ○ Does the technology exist to build the new product?
   b. ○ What are the organizational structures of other companies that already manufacture the same product?
   c. ○ How can we write the company's vision statement so it covers the solution we want to implement?

Defining Solution Scope

After determining that a particular proposed solution is feasible, the project team needs to focus on building a business case and conducting an initial risk analysis. As we'll see later, the business case provides management with all the information they need to make a decision about whether to proceed with the project. The first step in building the business case is determining just how large or extensive the project will be. This is what the BABOK® refers to as the "***solution scope***."

The solution scope includes

- The scope of analysis
- The capabilities supported
- The capabilities that will be supported by future iterations
- The enabling capabilities that are required in order for the organization to develop the capabilities required to meet the business need

It is akin to developing a detailed project plan but without including too many details. It contains estimates that are sufficiently detailed and accurate to build a business case and begin evaluating risks but not necessarily detailed enough to begin carrying out the project itself.

Steps to Defining Solution Scope

Business analysts working on the solution scope need to be able to define and describe the new capabilities that the project will deliver with enough detail for all stakeholders to understand them. The business analyst takes into account the business need, required capabilities, and the solution approach as inputs when defining the solution scope. In addition, the business analyst needs to consider any known or implied assumptions or constraints (for example, limits of a particular technology or regulatory constraints) when defining the solution scope.

The business analyst uses specific techniques for determining the project scope. These include creating a work breakdown structure or product breakdown structure, analyzing system interfaces, creating a context diagram, or constructing user stories.

Let's examine some general techniques used in defining solution scope in more detail:

Solution Scope Deliverables

Solution scope deliverables include the following items in addition to the scope statement:

Self Check

1. **Which of the following are deliverables for the determination of the solution scope? *(Choose all that are correct.)***

   a. ☐ High-level work breakdown structure.

   b. ☐ Advertising copy for a new product.

   c. ☐ A list of the support and infrastructure capabilities that the analyst assumed would be in place to support project implementation.

   d. ☐ A detailed implementation plan so work on the project can begin soon after the scope is approved.

Self Check

2. ***Complete this sentence:*** **The solution scope document should exclude time and cost estimates...**

   a. ○ ...if they cannot be determined accurately, as this would render the scope indeterminate.

   b. ○ ...unless they can be supported by sufficiently detailed documentation that their certainty is virtually assured.

   c. ○ ...under no circumstances because they are essential to evaluating the degree of effort that will be needed to carry out the project.

Defining Business Case

The business case must convince management (or other stakeholders) to proceed with the project. (We'll lump all the stakeholders into the term "management" for ease of discussion.) So, it's a good idea to look at the business case from management's perspective.

First of all, the project must help management achieve something they want to achieve. The project must be in alignment with management's goals, which in turn should be in alignment with the organization's goals. Therefore, the business analyst must be very familiar with both sets of goals when crafting the business case.

Usually, companies (and managers) are interested in projects that produce a financial benefit in terms of cost reductions or revenue increases that lead to greater profitability. So, if your business case points in this direction, it is more likely to be approved.

Of course, projects that have non-financial goals certainly exist. (The man-on-the- moon project comes to mind.) The business case must reflect those goals and demonstrate that the project has a good chance of achieving them.

As you can tell, even though a business case contains preliminary estimates, it should be sufficiently detailed and well-documented to give management the confidence needed to make a decision. In many circumstances, it's better to "over-document" than "under-document" (using attachments and appendices, of course). **Your goal as a business analyst is to shorten the distance to a management decision as much as possible**. You'll learn more about business cases in later courses including Requirements Gathering, Analysis, and Documentation and Communicating Technical Requirements.

Now let's look at a few specifics about business cases, as discussed in the IIBA® BABOK®.

Business Case Example

As we've seen, business cases are designed to show management how proposed projects can benefit a company or organization. They justify the expense of proceeding with the project. Let's consider a business case designed to support the development of a new product.

The business case should provide information about the potential market for that product in terms of general market trends, the availability of similar products, the expected market penetration, the estimated length of time needed to break even, profit expectations, and other factors including the effect that the new product might have on the sale of existing products. A holistic perspective is crucial.

Business analysts developing business cases need to:

- Use their knowledge of general accounting
- Express project efforts and benefits in financial terms
- Make financial performance forecasts

To develop the main thrust of the case, business analysts might turn to an analysis of strengths, weaknesses, opportunities, and threats (SWOT) or focus on various financial valuation dimensions including discounted cash flow, net present value, internal rate of return, average rate of return, and pay-back period. These lead into a cost-benefit analysis, which in turn leads to the main argument of the business case: the benefits of undertaking the project.

Forms of Risk

Risk comes in many forms and the astute project manager or business analyst is ready to address all of them: financial, market-related, process-related, technical, etc. A threat to any one of these elements could derail an entire project. Project managers or business analysts conduct the initial risk assessment early in the project development process. The goal is to identify the major potential sources of events or conditions that can prevent the project from succeeding.

For example, let's return for a moment to our man-on-the-moon example. A sudden and catastrophic collapse in the U.S. economy would likely have stopped funding for the lunar program and, of course, delayed or ended it entirely. Similarly, the discovery of some previously undetected form of solar radiation that was harmful to humans and required thick (and heavy) shielding might have turned a manned mission into a robot-guided mission. (Or, it might have required more powerful rocket technology to lift the heavily shielded capsule aloft.)

All these risks need to be identified and evaluated in terms of probability so that decision makers can accurately view the overall likelihood of project success. Once the risks associated with a particular project have been identified, project leaders need to develop contingency plans to mitigate project threats should they materialize. Management then needs to assess their organization's readiness to handle those threats and evaluate this response capability in financial terms.

There is one more source of risk - *the risk of doing nothing* - that also must enter the calculation. The risk of doing nothing seems odd at first, but when you consider the possibility of losing ground in the market because you fail to introduce a new product, it begins to sound more reasonable.

Business Case Document

The final product, the business case document, usually has the following contents:

Self Check

1. Which of the following would you include in a business case?

a. ○ A marketing plan and sample print media layouts.

b. ○ A proposal for a general training program to bring staff members up to speed on new business practices.

c. ○ Financial projections showing potential revenue resulting from the project's implementation.

d. ○ A detailed historical analysis of the company's financial performance during the preceding seven years.

Self Check

2. In your business case, you have a special section focusing on risk analysis, both in terms of the benefits a project could bring as well as the potential downsides of being out of the market. Based on what you have been reading, how should you document the risk calculations?

a. ○ Include them in an appendix and refer to that appendix from within the main document.

b. ○ Keep the calculations in a separate file in a secure location; make the file available only if a high-level stakeholder asks to see it.

c. ○ Most stakeholders are not interested in details as long as you state that you followed generally accepted statistical procedures for determining the degree of risk.

d. ○ Because risk analysis is so important, you must provide the detailed calculations and computer simulation printouts in the main body of the business case document where they can make a greater impression on stakeholders as to the validity of your conclusions.

Lesson Summary

- **This lesson presented a key knowledge area of the IIBA® Business Analysis Body of Knowledge: Enterprise Analysis**. When a company's leadership wishes to expand the organization's business activities or explore new opportunities, or if there is a need to solve a particular problem that impacts business effectiveness, it's time to carry out enterprise analysis.
- **Upper management or other stakeholders (e.g. shareholders) usually define long-term business objectives and create a vision for the future**. Achieving this vision requires action, which materializes in the form of projects. While often it is the organization's leaders who specify short-term goals that ultimately will lead to achieving their vision, business analysts often identify ***business needs*** based on their observations and knowledge of the organization, and step forward with viable ***solution approaches*** in order to meet these needs. Regardless of who proposes or initiates a project, business analysts play a key role in ensuring that it is carried out successfully.
- **Business analysts also use their analytical skills** in assessing the current capabilities of the organization and identify any ***gaps*** that might prevent it from meeting the business need. Moreover, the ***scope*** of the solution is identified in terms of the new capabilities that the project effort will deliver.
- **Business analysts define the business case** to determine if the resources and technical capabilities exist at a reasonable cost and then help define how extensive the project needs to be to achieve its goals. Finally, in preparing a business case, the business analyst presents information to higher management to support in making a final go/no-go decision. Sometimes the business sponsor plays the largest role in this step, but often the business analyst takes the lead. (Business analysts play a critical role regardless of who takes the lead!)