Project Scope Management

Complied by Heng Sovannarith
What is Project Scope Management?

• **Scope** refers to *all* the work involved in creating the products of the project and the processes used to create them.

• A **deliverable** is a product produced as part of a project, such as hardware or software, planning documents, or meeting minutes.

• **Project scope management** includes the processes involved in defining and controlling what is or is not included in a project.
Project Scope Management Processes

- **Scope planning**: deciding how the scope will be defined, verified, and controlled
- **Scope definition**: reviewing the project charter and preliminary scope statement and adding more information as requirements are developed and change requests are approved
- **Creating the WBS**: subdividing the major project deliverables into smaller, more manageable components
- **Scope verification**: formalizing acceptance of the project scope by key project stakeholders
- **Scope control**: controlling changes to project scope which impact project cost and time goals
Project Scope Management Summary

Planning
Process: **Scope planning**
Output: Project scope management plan

Process: **Scope definition**
Output: Project scope statement, requested changes to the project, updates to the project scope management plan

Process: **Create WBS**
Output: WBS, WBS dictionary, scope baseline, requested changes to the project, updates to the project scope statement and project scope management plan

Monitoring and Controlling
Process: **Scope verification**
Outputs: Accepted deliverables, requested changes, recommended corrective actions

Process: **Scope control**
Outputs: Requested changes, recommended corrective actions, updates to the project scope statement, WBS and WBS dictionary, scope baseline, project management plan, and organizational process assets

Project Start  

Project Finish
Scope Planning and the Scope Management Plan

- The **scope management plan** is a document that includes descriptions of how the team will prepare the project scope statement, create the WBS, verify completion of the project deliverables, and control requests for changes to the project scope.

- Key inputs include the project charter, preliminary scope statement, and project management plan.

- It should be reviewed with the project sponsor to make sure the approach meets expectations.
What Went Right?

• Many financial service companies use customer relationship management (CRM) systems to improve their understanding of and responsiveness to customers

• A senior management team at the Canadian money management company Dynamic Mutual Funds (DMF) launched an enterprise-wide, national program to build and manage its customer relationships

• They needed a faster and more organized, highly participative approach, so they proposed a new seven-step concept called project scope design

• DMF won an eCustomer World Golden Award for world-class innovation
What Went Right?

The Seven Steps

1. Analyze the project atmosphere, stakeholders and centers of influence
2. Align the project scope with the organization’s strategic objectives and business challenges
3. Determine where to add value to the business
4. Study the process flow between the business units
5. Develop an efficient communication strategy
6. Develop the project approach
7. Coordinate the new project with the other initiatives already under way
SECTION IV: PROJECT APPROACH

- Prime contractor will maintain all project documents and schedule.
- Prime contractor will perform work with contractor’s own employees who are bonded and hold the appropriate trade licenses and credentials. In the event that the prime contractor subcontracts work, all subcontractor’s employees will be verified by prime contractor to be bonded and will hold the appropriate trade licenses and credentials.
- Prime contractor agrees to pay a 10% single quarter penalty for any project worker found on the project site without proof of proper trade license and credentials.
- Prime contractor will be responsible for all subcontract oversight, deliverables and management.
- Prime contractor has agreed to the terms of the fixed-price contract and schedule.
- During planned project execution, prime contractor will provide periodic progress reports to buyer (biweekly, monthly).
- Following any schedule delay, prime contractor agrees to provide progress reports on a weekly basis until schedule has been “caught up.”
Sample Scope Management Plan

Project Name: Information Technology (IT) Upgrade Project

Introduction
The purpose of this document is to provide suggestions and guidance for preparing several important scope management documents related to this project.

Preparing the Scope Statement
The preliminary scope statement will provide the basis for preparing more detailed scope statements. The scope statement needs to be reviewed with key stakeholders, especially the project sponsor, potential suppliers, and users of the project deliverables. Follow corporate templates when available, and be sure to have expert input in defining the scope. Since the scope statement becomes more detailed and therefore longer as the project progresses, limit the length and complexity of the scope statement by placing details in attachments, such as product descriptions, specifications, corporate standards, etc. Each version of the scope statement must be clearly labeled and dated to ensure that everyone uses the most recent version. Changes and additions will be highlighted and communicated to the appropriate personnel. The scope statement will be available on the password-protected project Web site.

Creating the Work Breakdown Structure (WBS)
The project team will work together to create the WBS. The project sponsor and steering committee will review the WBS to ensure that all of the work required to complete the project is included in the WBS. The project team will review WBSs of similar projects, review the company’s corporate guidelines for creating WBSs, and focus on determining all of the deliverables required for the project. The project team will determine the tasks required to complete each deliverable, which will be reviewed and agreed to by the project manager, sponsor, and steering committee. These tasks should include product- and process-related tasks. A general guideline to follow for determining the level of detail is that the lowest level of the WBS should normally take no longer than two weeks to complete. The WBS can be revised as needed, and the sponsor and steering committee must approve these revisions.

Verifying Completion of Project Deliverables
The project manager will work with the sponsor and steering committee to develop a process for verifying successful completion of project deliverables. In general, the project sponsor will be responsible for verifying the completion of major deliverables. The contract administrator will also be involved in verifying successful completion of deliverables received from outside sources. Contracts will include clauses describing the scope verification process.

Managing Requests for Changes to Project Scope
All requests for changes to project scope that may have a significant effect on meetings and project requirements must follow the formal change control procedures specified in Attachment 1. A change request form will be completed and reviewed by the designated group. It is crucial to follow these procedures to prevent scope creep.
Sample Project Charter

**Project Title:** Information Technology (IT) Upgrade Project

**Project Start Date:** March 4, 2008  **Projected Finish Date:** December 4, 2008

**Project Manager:** Kim Nguyen, 691-2784, knnguyen@course.com

**Project Objectives:** Upgrade hardware and software for all employees (approximately 2,000) within nine months based on new corporate standards. See attached sheet describing the new standards. Upgrades may affect servers, as well as associated network hardware and software. Budgeted $1,000,000 for hardware and software costs and $500,000 for labor costs.

**Approach:**
- Update the information technology inventory database to determine upgrade needs
- Develop detailed cost estimate for project and report to CIO
- Issue a request for quote to obtain hardware and software
- Use internal staff as much as possible for planning, analysis, and installation

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walter Schmidt</td>
<td>CEO</td>
<td>Project sponsor, monitor project</td>
</tr>
<tr>
<td>Mike Zwack</td>
<td>CIO</td>
<td>Monitor project, provide staff</td>
</tr>
<tr>
<td>Kim Nguyen</td>
<td>Project Manager</td>
<td>Plan and execute project</td>
</tr>
<tr>
<td>Jeff Johnson</td>
<td>Director of Information Technology Operations</td>
<td>Mentor Kim</td>
</tr>
<tr>
<td>Nancy Reynolds</td>
<td>VP, Human Resources</td>
<td>Provide staff, issue memo to all employees about project</td>
</tr>
<tr>
<td>Steve McCann</td>
<td>Director of Purchasing</td>
<td>Assist in purchasing hardware and software</td>
</tr>
</tbody>
</table>

**Sign-off:** (Signatures of all the above stakeholders)

Walter Schmidt  
Mike Zwack  
Kim Nguyen  

**Comments:** (Handwritten or typed comments from above stakeholders, if applicable)

“**This project must be done within ten months at the absolute latest.**” Mike Zwack, CIO

“**We are assuming that adequate staff will be available and committed to supporting this project. Some work must be done after hours to avoid work disruptions, and overtime will be provided.**” Jeff Johnson and Kim Nguyen, Information Technology Department
Scope Definition and the Project Scope Statement

• The project team develops a preliminary scope statement in initiating a project as part of the project integration management knowledge area.

• The preliminary scope statement, project charter, organizational process assets, and approved change requests provide a basis for creating the more specific **project scope statement**.
Scope Definition and the Project Scope Statement

• Project scope statements should contain at a minimum:
  – Description of the project – overall objectives, justification
  – Detailed descriptions of all project deliverables
  – Characteristics and requirements of products and services produced as part of the project

• Other helpful information:
  – Project success criteria
  – Project boundaries
  – Product acceptance criteria
  – Schedule milestones
  – Order of magnitude costs estimates...
Further Defining Project Scope

Project Charter:
Upgrades may affect servers...

Preliminary Scope Statement:
Servers: If additional servers are required to support this project, they must be compatible with existing servers. If it is more economical to enhance existing servers, a detailed description of enhancements must be submitted to the CIO for approval. See current server specifications provided in Attachment 6. The CEO must approve a detailed plan describing the servers and their location at least two weeks before installation.

Project Scope Statement, Version 1:
Servers: This project will require purchasing 10 new servers to support Web, network, database, application, and printing functions. Two of each type of server will be purchased and dedicated to this project. Detailed descriptions of the servers are provided in a product brochure in Appendix 8 along with a plan describing where they will be located.
Work Breakdown Structure (WBS)

• **A WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project

• WBS is a foundation document that provides the basis for planning and managing project schedules, costs, resources, and changes

• **Decomposition** is subdividing project deliverables into smaller pieces
  
  – A **work package** is a task at the lowest level of the WBS
  
  – Tasks on a WBS represent work that needs to be done to complete the project, not specifications (e.g., type of server)
Work Breakdown Structure (WBS)

• The project scope statement and project management plan are the primary inputs for creating a WBS

• The outputs include the WBS itself, the WBS dictionary, a scope baseline and updates to the project scope statement and scope management plan

• The WBS is often depicted as a task-oriented family tree of activities
  – The WBS can be organized around project products, project phases or using the project management process groups
<table>
<thead>
<tr>
<th>WBS #</th>
<th>WBS Task</th>
<th>Deliverable</th>
<th>Owner</th>
<th>Duration</th>
<th>Budget</th>
<th>Risk Factor</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Phase 2</td>
<td>Phase 2 Report</td>
<td>Chandler</td>
<td>5 months</td>
<td>$900,000</td>
<td>See Risk Plan</td>
<td>On Schedule</td>
</tr>
<tr>
<td>2.1</td>
<td>Design Development</td>
<td>Design Release</td>
<td>Monica</td>
<td>5 months</td>
<td>$685,000</td>
<td>Resources</td>
<td>On Schedule</td>
</tr>
<tr>
<td>2.1.1</td>
<td>Build Prototypes</td>
<td>Prototypes</td>
<td>Ross</td>
<td>3 months</td>
<td>$81,000</td>
<td>Design Change</td>
<td>Ahead</td>
</tr>
<tr>
<td>2.1.1.1</td>
<td>Build Prototype #1</td>
<td>Prototype #1</td>
<td>Joey</td>
<td>8 days</td>
<td>$12,500</td>
<td>Complete</td>
<td></td>
</tr>
</tbody>
</table>
Partial WBS Organized by Product Areas
Partial WBS Organized by Project Phase
Partial Intranet WBS in Tabular Form

1.0 Concept
   1.1 Evaluate current systems
   1.2 Define Requirements
      1.2.1 Define user requirements
      1.2.2 Define content requirements
      1.2.3 Define system requirements
      1.2.4 Define server owner requirements
   1.3 Define specific functionality
   1.4 Define risks and risk management approach
   1.5 Develop project plan
   1.6 Brief Web development team

2.0 Web Site Design
3.0 Web Site Development
4.0 Roll Out
5.0 Support
Intranet WBS and Gantt Chart in Microsoft Project
Intranet Gantt Chart Organized by Project Management Process Groups

- **WBS**:
  - 1 Initiating
    - 1.1 Select project manager
  - 1.2 Form project team
  - 1.3 Develop project charter
  - 2 Planning
    - 2.1 Develop scope statement
    - 2.2 Create WBS
    - 2.3 Develop and refine other plans
  - 3 Executing
    - 3.1 Concept
    - 3.2 Web Site Design
    - 3.3 Web Site Development
    - 3.4 Roll Out
    - 3.5 Support
  - 4 Controlling
  - 5 Closing

- **Schedule**
Approaches to Developing WBSs

• Using guidelines: some organizations
• The **analogy approach**: review WBSs of similar projects and tailor to your project
• The **top-down approach**: start with the largest items of the project and break them down
• The **bottom-up approach**: start with the specific tasks and roll them up
• Mind-mapping approach: **mind mapping** is a technique that uses branches radiating out from a core idea to structure thoughts and ideas
Mind Mapping

• Mind Mapping is a way of creating pictures that show ideas in the same way that they are represented in your brain.

• Your brain uses words, pictures, numbers, logic, rhythm, color and spatial awareness to build up unique pictures of information.

• The ideas are linked together in a way that makes it easy to understand and remember.


• [http://www.youtube.com/watch?v=MlabrWv25qQ](http://www.youtube.com/watch?v=MlabrWv25qQ)
Mind Mapping

What is mind mapping?

How brain organizes information

Linking and associating

1, 2, 3

Number

Logic

Rhythm

Color

Spatial awareness

Central idea

Linked to

Radiating from

Using

With

Related branches

Representing

Diagrams

Words

Ideas

Tasks

Other items

Word

Image

Number

Logic

Rhythm

Color

Spatial awareness
Mind Mapping

- Use just key words, or wherever possible images.
- Start from the center of the page and work out.
- Make the center a clear and strong visual image that depicts the general theme of the map.
- Create sub-centers for sub-themes.
- Put key words on lines. This reinforces structure of notes.
- Print rather than write in script. It makes them more readable and memorable. Lower case is more visually distinctive (and better remembered) than upper case.
- Use color to depict themes, associations and to make things stand out.
- Anything that stands out on the page will stand out in your mind.
- Think three-dimensionally.
- Use arrows, icons or other visual aids to show links between different elements.
- Don't get stuck in one area. If you dry up in one area go to another branch.
- Put ideas down as they occur, wherever they fit. Don't judge or hold back.
- Break boundaries. If you run out of space, don't start a new sheet; paste more paper onto the map. (Break the 8x11 mentality.)
- Be creative. Creativity aids memory.
- From http://www.peterrussell.com/MindMaps/HowTo.php
Sample Mind-Mapping Approach for Creating a WBS
Resulting WBS in Chart Form

- Information Technology Upgrade Project
  - Project Management
  - Update Inventory
  - Acquire Hardware and Software
  - Install Hardware and Software
  - Perform Physical Inventory
  - Update Database
  - Servers
  - User Hardware
    - Building A
    - Building B
    - Building C
      - Laptops
      - Desktops
The WBS Dictionary and Scope Baseline

• Many WBS tasks are vague and must be explained more so people know what to do and can estimate how long it will take and what it will cost to do the work

• A **WBS dictionary** is a document that describes detailed information about each WBS item

• The approved project scope statement and its WBS and WBS dictionary form the **scope baseline**, which is used to measure performance in meeting project scope goals
Table 5-6: Sample WBS Dictionary Entry

WBS Dictionary Entry
March 20, 2008

**Project Title:** Information Technology (IT) Upgrade Project

**WBS Item Number:** 2.2

**WBS Item Name:** Update Database

**Description:** The IT department maintains an online database of hardware and software on the corporate Intranet. However, we need to make sure that we know exactly what hardware and software employees are currently using and if they have any unique needs before we decide what to order for the upgrade. This task will involve reviewing information from the current database, producing reports that list each department's employees and location, and updating the data after performing the physical inventory and receiving inputs from department managers. Our project sponsor will send out a notice to all department managers to communicate the importance of this project and this particular task. In addition to general hardware and software upgrades, the project sponsors will ask the department managers to provide information for any unique requirements they might have that could affect the upgrades. This task also includes updating the inventory data for network hardware and software. After updating the inventory database, we will send an e-mail to each department manager to verify the information and make changes online, as needed. Department managers will be responsible for ensuring that their people are available and cooperative during the physical inventory. Completing this task is dependent on WBS Item Number 2.1, Perform Physical Inventory and must precede WBS Item Number 3.0, Acquire Hardware and Software.
## Sample WBS Dictionary Entry (cont.)

### WBS Dictionary

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Creating a WBS and WBS Dictionary*

• A unit of work should appear at only one place in the WBS
• The work content of a WBS item is the sum of the WBS items below it
• A WBS item is the responsibility of only one individual, even though many people may be working on it
• The WBS must be consistent with the way in which work is actually going to be performed; it should serve the project team first, and other purposes only if practical

*Cleland, David I.  Project Management: Strategic Design and Implementation, 1994
Creating a WBS and WBS Dictionary *

- Project team members should be involved in developing the WBS to ensure consistency and buy-in.
- Each WBS item must be documented in a WBS dictionary to ensure accurate understanding of the scope of work included and not included in that item.
- The WBS must be a flexible tool to accommodate inevitable changes while properly maintaining control of the work content in the project according to the scope statement.

*Cleland, David I. *Project Management: Strategic Design and Implementation*, 1994
Scope Verification

• It is very difficult to create a good scope statement and WBS for a project
• It is even more difficult to verify project scope and minimize scope changes
• **Scope verification** involves formal acceptance of the completed project scope by the stakeholders
• Acceptance is often achieved by a customer inspection and then sign-off on key deliverables
Scope Control

• **Scope control** involves controlling changes to the project scope

• Goals of scope control are to:
  – Influence the factors that cause scope changes
  – Assure changes are processed according to procedures developed as part of integrated change control
  – Manage changes when they occur

• Tools for performing scope control include a change control system and configuration management

• **Variance** is the difference between planned and actual performance
Best Practices for Avoiding Scope Problems

1. Keep the scope realistic: Don’t make projects so large that they can’t be completed; break large projects down into a series of smaller ones.

2. Involve users in project scope management: Assign key users to the project team and give them ownership of requirements definition and scope verification.

3. Use off-the-shelf hardware and software whenever possible: Many IT people enjoy using the latest and greatest technology, but business needs, not technology trends, must take priority.

4. Follow good project management processes: there are well-defined processes for managing project scope and others aspects of projects.
Suggestions for Improving User Input

• Develop a good project selection process and insist that sponsors are from the user organization
• Have users on the project team in important roles
• Have regular meetings with defined agendas, and have users sign off on key deliverables presented at meetings
• Deliver something to users and sponsors on a regular basis
• Don’t promise to deliver when you know you can’t
• Co-locate users with developers
Suggestions for Reducing Incomplete and Changing Requirements

• Develop and follow a requirements management process
• Use techniques such as prototyping, use case modeling to get more user involvement
• Put all requirements in writing, keep them current and readily available
• Create a requirements management database for documenting and controlling requirements
Suggestions for Reducing Incomplete and Changing Requirements

• Provide adequate testing and conduct testing throughout the project life cycle
• Review changes from a systems perspective
  – Project scope changes must include associated cost and schedule changes
  – Focus on approved scope goals and don’t get side tracked
• Emphasize completion dates to help focus on what’s most important
  – What should we drop in order to add something new?
Using Software to Assist in Project Scope Management

• Word-processing software helps create several scope-related documents
• Spreadsheets help to perform financial calculations and weighed scoring models, and develop charts and graphs
• Communication software like e-mail and the Web help clarify and communicate scope information
• Project management software helps in creating a WBS, the basis for tasks on a Gantt chart
• Specialized software is available to assist in project scope management
Methods for Selecting Projects

• There are usually more projects than available time and resources to implement them

• It is important to follow a logical process for selecting IT projects to work on

• Methods include:
  – focusing on broad needs
  – categorizing projects
  – performing financial analyses
  – using a weighted scoring model
  – implementing a balanced scorecard
Focusing on Broad Organizational Needs

• It is often difficult to provide strong justification for many IT projects, but everyone agrees they have a high value

• “It is better to measure gold roughly than to count pennies precisely”

• Three important criteria for projects:
  – There is a *need* for the project
  – There are *funds* available
  – There’s a strong *will* to make the project succeed
Categorizing IT Projects

• One categorization is whether the project addresses
  – a problem
  – an opportunity
  – a directive

• Another categorization is how long it will take to do and when it is needed

• Another is the overall priority of the project
Financial Analysis of Projects

• Financial considerations are often an important consideration in selecting projects

• Three primary methods for determining the projected financial value of projects:
  – Net present value (NPV) analysis
  – Return on investment (ROI)
  – Payback analysis
Net Present Value Analysis

• Net present value (NPV) analysis is a method of calculating the expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time
• Projects with a positive NPV should be considered if financial value is a key criterion
• The higher the NPV, the better
# Net Present Value Example

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</tbody>
</table>

*Figure 5-2. Net Present Value Example*
NPV Calculations

• Determine estimated costs and benefits for the life of the project and the products it produces
• Determine the discount rate (check with your organization on what to use)
• Calculate the NPV
• Notes: Some organizations consider the investment year as year 0, while others start in year 1. Some people enter costs as negative numbers, while others do not. Check with your organization for their preferences.
Return on Investment

• Return on investment (ROI) is calculated by subtracting the project costs from the benefits and then dividing by the costs

  \[
  \text{ROI} = \frac{\text{total discounted benefits} - \text{total discounted costs}}{\text{discounted costs}}
  \]

• The higher the ROI, the better

• Many organizations have a required rate of return or minimum acceptable rate of return on an investment
Example of ROI

• For example, a program costs $3 million and accrues $8 million in benefits.
• First calculate the net benefits ($8 million minus $3 million equals $5 million).
• Then divide the net benefits by the total costs ($5 million divided by $3 million).
• The result—1.67—is the ROI, which is typically expressed as a percentage (167 percent).
• Thus, the investment (i.e., the cost) will generate a return (i.e., net benefit) that amounts to 167 percent of the cost of the investment.
Payback Analysis

• Another important financial consideration is payback analysis
• The payback period is the amount of time it will take to recoup, in the form of net cash inflows, the net dollars invested in a project
• Payback occurs when the cumulative discounted benefits and costs are greater than zero
• Many organizations want IT projects to have a fairly short payback period
Charting the Payback Period

Figure 3-4. Charting the Playback Period
Weighted Scoring Model

- A weighted scoring model is a tool that provides a systematic process for selecting projects based on many criteria
  - First identify criteria important to the project selection process
  - Then assign weights (percentages) to each criterion so they add up to 100%
  - Then assign scores to each criterion for each project
  - Multiply the scores by the weights and get the total weighted scores

- The higher the weighted score, the better
- See “What Went Right?” for a description of how a mortgage finance agency uses a weighted scoring model for IT projects
Figure 3-5. Sample Weighted Scoring Model for Project Selection

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports key business objectives</td>
<td>25%</td>
<td>90</td>
<td>90</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Has strong internal sponsor</td>
<td>15%</td>
<td>70</td>
<td>90</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Has strong customer support</td>
<td>15%</td>
<td>50</td>
<td>90</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Realistic level of technology</td>
<td>10%</td>
<td>25</td>
<td>90</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>Can be implemented in one year or less</td>
<td>5%</td>
<td>20</td>
<td>20</td>
<td>50</td>
<td>90</td>
</tr>
<tr>
<td>Provides positive NPV</td>
<td>20%</td>
<td>50</td>
<td>70</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Has low risk in meeting scope, time, and cost goals</td>
<td>10%</td>
<td>20</td>
<td>50</td>
<td>50</td>
<td>90</td>
</tr>
</tbody>
</table>

Weighted Project Scores

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
<td>56</td>
<td>78.5</td>
<td>50</td>
<td>41.5</td>
</tr>
</tbody>
</table>

Weighted Score by Project
Implementing a Balanced Scorecard

• Drs. Robert Kaplan and David Norton developed this approach to help select and manage projects that align with business strategy

• A balanced scorecard converts an organization’s value drivers, such as customer service, innovation, operational efficiency, and financial performance to a series of defined metrics

• See www.balancedscorecard.org for more information