Balanced Scorecard Basics

Contents

This article has been reprinted from the web site of The Balanced Scorecard Institute with some minor changes to aid readability.

To view the original report go to:

http://www.balancedscorecard.org

Basic Concepts

There are numerous approaches to organizational management, and since the balanced scorecard approach is relatively new, it may be unfamiliar to managers who have experience primarily in program management. These essays will serve to orient your thinking to the balanced scorecard approach, and to evaluate it critically.

1. What is the Balanced Scorecard?

A new approach to strategic management was developed in the early 1990's by Drs. Robert Kaplan (Harvard Business School) and David Norton. They named this system the 'balanced scorecard'. Recognizing some of the weaknesses and vagueness of previous management approaches, the balanced scorecard approach provides a clear prescription as to what companies should measure in order to 'balance' the financial perspective.

The balanced scorecard is a ***management system*** (not only a measurement system) that enables organizations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results. When fully deployed, the balanced scorecard transforms strategic planning from an academic exercise into the nerve center of an enterprise.

Kaplan and Norton describe the innovation of the balanced scorecard as follows:

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation."

The balanced scorecard suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives:

a) The Learning and Growth Perspective
b) The Business Process Perspective

c) The Customer Perspective
d) The Financial Perspective

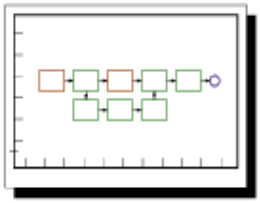
a) The Learning and Growth Perspective

This perspective includes employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organization, *people* -- the only repository of knowledge -- are the main resource. In the current climate of rapid technological change, it is becoming necessary for knowledge workers to be in a continuous learning mode.

Government agencies often find themselves unable to hire new technical workers and at the same time is showing a decline in training of existing employees. This is a leading indicator of 'brain drain' that must be reversed. Metrics can be put into place to guide managers in focusing training funds where they can help the most. In any case, *learning and growth constitute the essential foundation for success of any knowledge-worker organization.*

Kaplan and Norton emphasize that 'learning' is more than 'training'; it also includes things like mentors and tutors within the organization, as well as that ease of communication among workers that allows them to readily get help on a problem when it is needed. It also includes technological tools; what the Baldrige criteria call "high performance work systems." One of these, the Intranet, will be examined in detail later in this document.

b) The Business Process Perspective



This perspective refers to internal business processes. Metrics based on this perspective allow the managers to know how well their business is running, and whether its products and services conform to customer requirements (the mission). These metrics have to be carefully designed by those who know these processes most intimately; with our unique missions these are not something that can be developed by outside consultants.

In addition to the strategic management process, two kinds of business processes may be identified: a) mission-oriented processes, and b) support processes. Mission-oriented processes are the special functions of government offices, and many unique problems are encountered in these processes. The support processes are more repetitive in nature, and hence easier to measure and benchmark using generic metrics.

c) The Customer Perspective

Recent management philosophy has shown an increasing realization of the importance of customer focus and customer satisfaction in any business. These are leading indicators: if customers are not satisfied, they will eventually find other suppliers that will meet their needs. Poor performance from this perspective is thus a leading indicator of future decline, even though the current financial picture may look good.

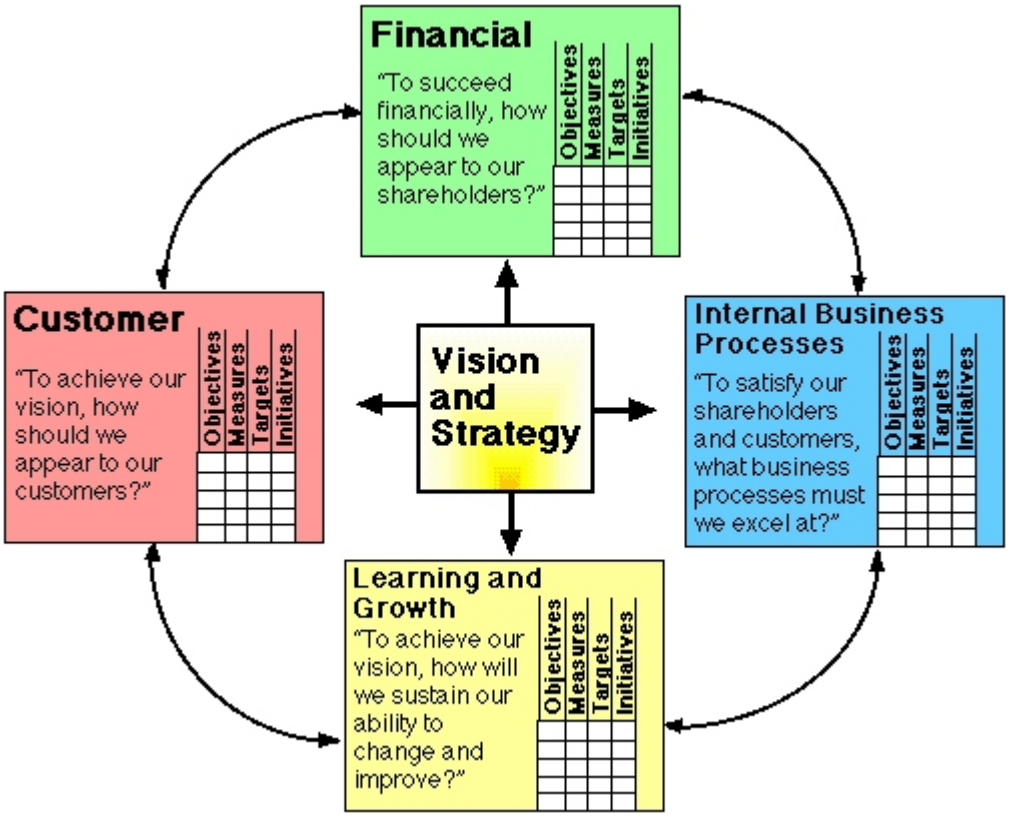
In developing metrics for satisfaction, customers should be analyzed in terms of kinds of customers and the kinds of processes for which we are providing a product or service to those customer groups.

d) The Financial Perspective

Kaplan and Norton do not disregard the traditional need for financial data. Timely and accurate funding data will always be a priority, and managers will do whatever necessary to provide it. In fact, often there is more than enough handling and processing of financial data. With the implementation of a corporate database, it is hoped that more of the processing can be centralized and automated. But the point is that the current emphasis on financials leads to the "unbalanced" situation with regard to other perspectives. There is perhaps a need to include additional financial-related data, such as risk assessment and cost-benefit data, in this category.

So, The balanced scorecard suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives:

- **The Learning and Growth Perspective**
- **The Business Process Perspective**
- **The Customer Perspective**
- **The Financial Perspective**



The Balanced Scorecard and Measurement-Based Management

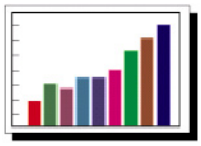
The balanced scorecard methodology builds on some key concepts of previous management ideas such as Total Quality Management (TQM), including customer-defined quality, continuous improvement, employee empowerment, and -- primarily -- measurement-based management and feedback.

Double-Loop Feedback

In traditional industrial activity, "quality control" and "zero defects" were the watchwords. In order to shield the customer from receiving poor quality products, aggressive efforts were focused on inspection and testing at the end of the production line. The problem with this approach -- as pointed out by Deming -- is that the true causes of defects could never be identified, and there would always be inefficiencies due to the rejection of defects. What Deming saw was that variation is created at every step in a production process, and the causes of variation need to be identified and fixed. If this can be done, then there is a way to reduce the defects and improve product quality indefinitely. To establish such a process, Deming emphasized that all business processes should be part of a system with feedback loops. The feedback data should be examined by managers to determine the causes of variation, what are the processes with significant problems, and then they can focus attention on fixing that subset of processes.

The balanced scorecard incorporates feedback around internal business process *outputs*, as in TQM, but also adds a feedback loop around the *outcomes*of business strategies. This creates a "double-loop feedback" process in the balanced scorecard.

Outcome Metrics



You can't improve what you can't measure. So metrics must be developed based on the priorities of the strategic plan, which provides the key business drivers and criteria for metrics managers most desire to watch. Processes are then designed to collect information relevant to these metrics and reduce it to numerical form for storage, display, and analysis.

Decision makers examine the outcomes of various measured processes and strategies and track the results to guide the company and provide feedback.

So the value of metrics is in their ability to provide a factual basis for defining:

- Strategic feedback to show the present status of the organization from many perspectives for decision makers
- Diagnostic feedback into various processes to guide improvements on a continuous basis
- Trends in performance over time as the metrics are tracked
- Feedback around the measurement methods themselves, and which metrics should be tracked
- Quantitative inputs to forecasting methods and models for decision support systems

Management by Fact

The goal of making measurements is to permit managers to see their company more clearly -- from many perspectives -- and hence to make wiser long-term decisions. The Baldrige Criteria (1997) booklet reiterates this concept of fact-based management:

"Modern businesses depend upon measurement and analysis of performance. Measurements must derive from the company's strategy and provide critical data and information about key processes, outputs and results. Data and information needed for performance measurement and improvement are of many types, including: customer, product and service performance, operations, market, competitive comparisons, supplier, employee-related, and cost and financial. Analysis entails using data to determine trends, projections, and cause and effect -- that might not be evident without analysis. Data and analysis support a variety of company purposes, such as planning, reviewing company performance, improving operations, and comparing company performance with competitors' or with 'best practices' benchmarks."

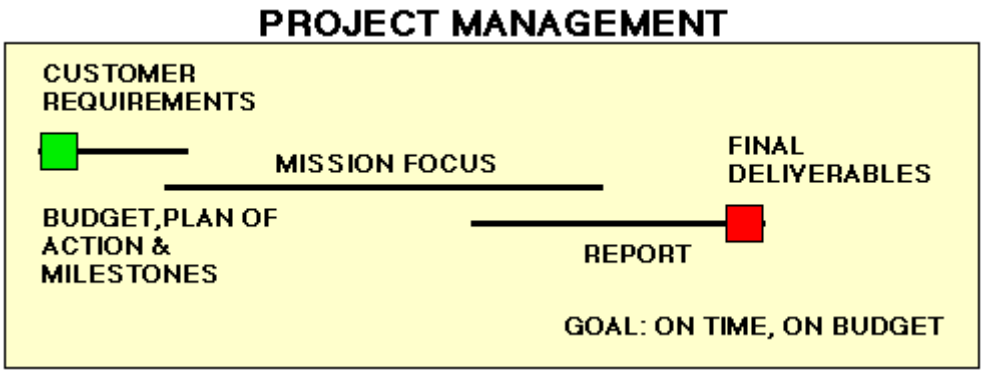
"A major consideration in performance improvement involves the creation and use of performance measures or indicators. Performance measures or indicators are measurable characteristics of products, services, processes, and operations the company uses to track and improve performance. The measures or indicators should be selected to best represent the factors that lead to improved customer, operational, and financial performance. A comprehensive set of measures or indicators tied to customer and/or company performance requirements represents a clear basis for aligning all activities with the company's goals. Through the analysis of data from the tracking processes, the measures or indicators themselves may be evaluated and changed to better support such goals."

2. The Balanced Scorecard -- Not Just Another Project

Managers in many government agencies have been reared on project management. It is the way they think about achieving their mission. In the Defense Department, project or program management has been the framework for development of every system costing from ten thousand dollars to ten billion dollars. There is a long-established tradition of on-the-job training and experience for young people to learn and be mentored by experienced project managers. Many guidebooks, manuals, software programs, and other means have been devised to aid the project manager.

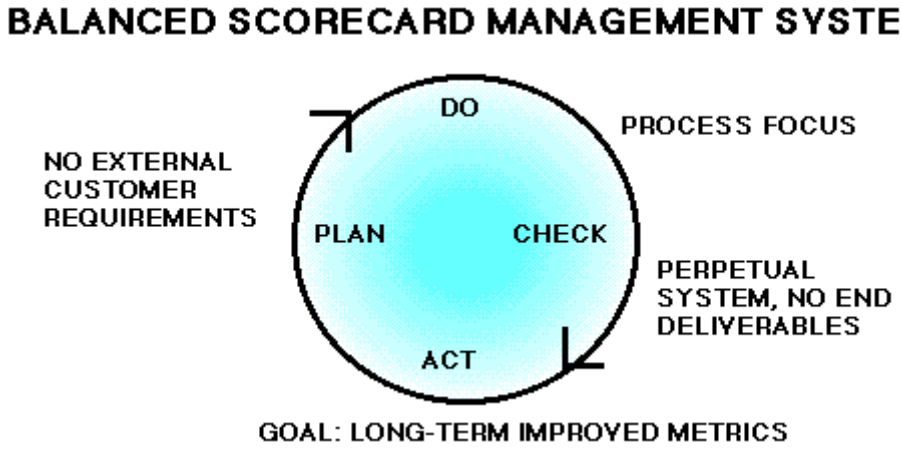
Project management has been in the management culture for decades, and the federal government has thousands of project managers who are routinely capable of amazingly complex achievements. In fact, many project managers may have never seen or considered any other way to get things done.

Although it is not necessary here to describe project management in detail, a simple diagram will help to show its general features.



The figure represents a time line or GANTT chart. All projects (or programs) have a definite start time (green) and a definite stop time (red) when the final deliverables (products, services, documents, decisions, etc.) are delivered to the customer. The goal is to meet customer requirements. The initial stage requires establishment of a precise budget and a plan of action and milestones (POA&M). The work is focused on the actual mission of production undertaken for the customer. It may be broken down into a hierarchy of subtasks, called an Engineering Schedule Work Breakdown Structure (ESWBS). Status and review meetings are scheduled at regular intervals throughout the project. Usually some kind of final report is written as one of the deliverables. The goal is to reach the end point on time and within budget, since there are usually other projects that are depending on input from the deliverables of this project. So project management is the effort to manage work within a finite, clearly scoped, hierarchically-structured, linear development process with a definite beginning and end.

The balanced scorecard management system is not just another project. It is fundamentally different from project management in several respects. To illustrate the radical nature of this difference, a diagram is shown of the BSC performance measurement process, as it would run when installed in an organization.



The first thing to notice is the topology: the balanced scorecard management process, derived from Deming's Total Quality Management, is a ***continuous cyclical process***. It has neither beginning nor end. Its task is not directly concerned about the mission of the organization, but rather with internal processes (diagnostic measures) and external outcomes (strategic measures). The system's control is based on performance metrics or "metadata" that are tracked continuously over time to look for trends, best and worst practices, and areas for improvement. It delivers information to managers for guiding their decisions, but these are self-assessments, not customer requirements or compliance data.

People trained only in project management may have difficulty in figuring out how to accomplish the BSC, simply because it is such a different kind of management paradigm. One of the key practical difficulties is to figure out how to get the process started in the first place. If this is not a project, where does one begin? What kind of plan is appropriate for deployment of the balanced scorecard system?

If we want to ride a rotating merry-go-round, we had better not attempt to just hop on. We will probably get hurt -- and won't get on. The situation is similar with the balanced scorecard. To get on the merry-go-round, we have to accelerate in the same direction for awhile, then hop on when our speed equals that of the circular floor. In other words, there needs to be **a *ramp-up phase***, where everyone "comes up to speed." This includes training or retraining of project managers, and probably focused deployment of *pilot efforts* before attempting to cover an entire large agency. Sustained, patient leadership will be needed before the payoff is attained.

3. Three Approaches to Management

Government agencies cannot live by project management alone. Congress, in the GPRA, the Executive Branch in the Reinventing Government initiative, and DoD Secretary Cohen in the Defense Reform Initiative, are asking us to find ways to increase productivity and efficiency, while maintaining mission effectiveness. That is where the new management approaches come in -- they are more applicable than project management to the kinds of internal improvements that are needed.

The table below summarizes comparisons of three different management approaches or methodologies. The comparisons are shown for several different features. It is evident from this comparison that BPI and the Balanced Scorecard are quite different in most respects from project management. They have different purposes and meet different needs.

	Project Management	**Business Process Improvement**	**Balanced Scorecard**
Age of Approach	Decades	Began in DoD 1992	Began in 1990
Prime Customer	External Sponsor	Internal Director	External IG, Internal Director
Goal Definition	Project Requirements, Mission Needs Statement	Cost, cycle time reductions	Strategic management system
Focus	Technical Mission	Business Processes	Multiple perspectives
Scope	Specialized unit	unit to enterprise	dept. to enterprise
Plans	Plan of Action & Milestones	Process Improvement Plan	Strategic Plan, Performance Plan
Schedule & teaming	Work Breakdown Schedule, Action Items	Team directed, focus groups	Cross-functional teams, 1-2 yr. implementation
Management Activities	Team building, Budgeting, Task Tracking, Reviews	Baseline process analysis, to-be process design, automation	Define metrics, collect data, analyze data, decide on changes
Tools (see links)	Microsoft Project, Primavera	TurboBPR, IDEF0	Data collection system, scorecards
Measures of success	Deliverables on time, on budget	Cost reductions minus cost of BPI effort	Learning what strategies work; improved results on many metrics

In attempting to implement the newer management methodologies in a traditional project management organization, there are two possible options:

1. train the managers in the new approaches and techniques;
2. translate the new approaches into familiar project form, and treat them as conventional projects.

Option 1 is always recommended. The problem with that is that we do not have the time or money to spend on a lot of training in new techniques.

Option 2 is something that hasn't been suggested before, to my knowledge. I don't know if it is feasible, or even if it makes sense. But if it could be done, it would save a lot of time in deploying the new initiatives.

Option 2 was actually suggested by the DoD's 1998 Performance Plan, in which one of the top level mission goals was 'Cost Reduction'. In other words, the DoD management recognizes that this is in itself worthy of being a strategic goal on the level of its other missions, not just an internal efficiency need.

4. Selecting a Management Approach

One of the reasons why managers are having such difficulty in applying management methods to government problems is this: there are many different schools of thought on management approaches, and each of these schools has its own proponents. Generally, an original proponent makes his or her name in that particular concept, and becomes an 'expert' and a 'guru' of it. There is little incentive to integrate this one approach with others.

That job is left to the poor managers who have to figure out how to apply what theory to their business problems. They have heard something about MBO, TQM, BPR, ISO-9000, CMM, ABC, BSC, and all the other buzz words and acronyms of management -- but they have received precious little guidance as to what to select that best fits their business needs, and the top-level requirements such as the GPRA. Usually, however, managers will tend to use the approach with which they are most familiar, which is probably project management or program management.

At any point in time, management culture tends to be dominated by one school of thought. Currently an emerging idea is the 'balanced scorecard'. The book on this theory by Kaplan and Norton is currently one of the top 10 best sellers in the field. Management consultants and writers tend to adopt the theory that is currently in vogue, and its popularity thus tends to grow rapidly to a peak, until it is superseded by the next new idea. The schools come and go approximately every 10 years. A similar phenomenon seems to take place in other social sciences, such as psychology, sociology, and education.

Thomas Kuhn's book *The Structure of Scientific Revolutions* analyzed this phenomenon. Although its conclusions may be taken too far, the general description of the process seems true enough:

1. A revolutionary new idea comes out of the blue, and champions and followers arise to promote it.
2. A school of thought and literature arises around the subject.
3. The idea becomes so popular that it becomes part of the 'establishment'. Its view is unquestioned and it dominates the scene for awhile.
4. Anomalies, counterexamples and new ideas emerge that cause the original idea to be deeply questioned.
5. A period of conflict between proponents and opponents prevails.
6. One of the new ideas takes over the field, except for a few die-hards who have little but historical influence.
7. The old idea may not be forgotten, but is absorbed into the new idea as a 'special case' or a 'useful fiction' that may be helpful in certain situations. (This appears to be the current status of Freudian theory within psychotherapy, for example).

Management Flexibility

A manager who only has experience in one approach, such as project management, may have difficulty in adapting to changing demands. A manager can be much more effective if he or she is able to select a management approach that is most appropriate to the desired need or goal. This adaptability or 'eclectic' flexibility may prove very useful in the changing government management environment.

There is no good reason why managers must follow the latest school of management thought. On the other hand, just because an idea is new does not mean that it should be dismissed. There are reasons why one particular approach is better than another depending on the strategic goal or need. The balanced scorecard, for instance, appears to be a very appropriate technique for meeting the urgent management needs of many Government agencies, such as their need to comply with the requirements of the GPRA. However, this need should not blind managers to other, perhaps even more pressing goals of their organization that may require a different approach.

The following table was developed to aid in selection of a management approach, depending on the conditions and need of the organization (strategic goal). The conditions will partly determine the best option. (The terms are defined here.)

Time Horizon (years)	Strategic Goal	Change Readiness	Technical Level	Risk Tolerance	Recommended Option
2-3	GPRA Compliance	Moderate	High	Moderate	Balanced Scorecard
3-6	>30% cost reductions, survival	High	High	High	BPR
1-3	20% Cost reductions	Moderate	Moderate	Moderate	BPI
Long term	Continuous improvement	Moderate	Moderate	Low	TQM
2-3	Baldrige score elevation	Moderate	High	Low	Balanced Scorecard + ABC
2-5	Strategic alignment	Low	Moderate	Moderate	Balanced Scorecard
2-5	Marketing credibility	Low	Low	Moderate	ISO-9000, incremental
2-5	Increased capabilities	Moderate	High	Low	CMM

Note that not all possible combinations of conditions are included in the table. If your conditions are beyond the levels indicated here (e.g. low risk tolerance when 30% cost reductions are needed), then it is likely that a 'best option' does not exist for your situation. You may need to gain additional senior management support and tolerance for risk before conducting strategic activities.

Details about each of these approaches may be found in books and at web sites listed in the Links.

5. Measurement-Based Management -- And Its Excesses

Henry Mintzberg is a widely-respected professor of management at McGill University in Montreal. He wrote an article called "Managing Government, Governing Management" for Harvard Business Review in May-June, 1996. In it, he said:

"Next, consider the myth of measurement, an ideology embraced with almost religious fervor by the Management movement. What is its effect in government? Things have to be measured, to be sure, especially costs. But how many of the real benefits of government activities lends themselves to such measurement? Some rather simple and directly delivered ones do -- especially at the municipal level -- such as garbage collection. But what about the rest? Robert McNamara's famous planning, programming, and budgeting systems in the U.S. federal government failed for this reason: Measurement often missed the point, sometimes causing awful distortions. (Remember the body counts of Vietnam?) How many times do we have to come back to this one until we finally give up? Many activities are in the public sector precisely because of measurement problems: if everything was so crystal clear and every benefit so easily attributable, those activities would have been in the private sector long ago."

As we begin to embark on a comprehensive measurement-based management program, what are we to make of this critique? Certainly the excesses of the "Whiz Kids" of the 1960's present a notorious example of the failings and unintended consequences of previous measurement systems. This critique has to be confronted directly lest we be doomed to repeat history.

In the context above, it is clear that Mintzberg is talking about outcome as opposed to output measurements. This is an important distinction. Briefly, outputs are productivity or efficiency metrics such as the number of reports written per month, the number of widgets manufactured per day, etc. They also might include service metrics such as the number of customers visited per month, the number of help desk calls resolved, etc.

Outcomes, on the other hand, deal with long-term effectiveness or results of a mission or function. One generic example of an outcome metric is "customer satisfaction". In private companies, this is a leading indicator of future profitability, growth and increased market share: all outcomes indicating success. However, in the case of government, it is difficult to define outcomes adequately. Since government is a not-for-profit organization, financial results are not relevant as outcome metrics. Growth and market share are also not applicable. "Customer satisfaction" is somewhat relevant, but who is the customer? The government user of a process? The civilian user? The taxpayer? The sponsor or administrator? Congress? The OMB? It could be all the above.

Probably the only generally applicable outcome metric for government is "mission effectiveness". The missions of government are undertaken for the public good, not for gain. But that 'good' is defined differently depending on the agency's mission. Sometimes it is feasible to measure. For example, a police department's outcome would be the overall crime rate in its district. But how would you define the outcome for a military base? Number of wars won? What about a basic research lab, whose inventions might revolutionize technology 20 years from now? It becomes infeasible to measure outcomes in many such cases, and attempts to do so may turn missions astray, as Mintzberg says they did in Vietnam.

So I will grant that in the context in which he writes, Mintzberg is correct. We should be very careful about establishing metrics for government mission outcomes, and in some cases not even try.

But for output measurements, it seems that the situation is quite the opposite. Government offices, warehouses, bases and facilities have much the same support services and user needs as any private company's. So we should expect to find degrees of efficiency of operating and support processes that can be measured, benchmarked and improved. This is the appropriate function of a measurement program, and its goal is simply to improve productivity and efficiency, i.e. reduce the cost and cycle time of internal processes. In all conceivable cases, such reductions will please customers, whoever they are, and probably result in improved outcomes.

Therefore, I believe there is an appropriate place for a measurement system in government agencies, although its emphasis should be on measuring outputs (such as process cycle times) and only the outcomes that are short-term and relatively easy to measure, such as self-reported customer satisfaction from several classes of customers. Such a system will, I believe, meet the letter and the spirit of the Government Performance and Results Act while avoiding excessive agonizing over metrics definitions.

6. Objections to a Performance Management System, and Responses

1. The costs outweigh the benefits. What will we find that we didn't already know?

What is the cost of not proving your value? Our competitors will prove theirs.

Today, our customers expect us to show evidence of progress. They have been through the performance management training too -- and the law (GPRA) requires it.

Web sites can enable and automate much of the work. This is a new method that is easy and inexpensive to implement, relative to the tools we had a few years ago.

Performance measurement has been demonstrated to be a 'best business practice' in terms of improving the bottom line in all kinds of companies (e.g. Motorola, Mobil, Cigna, the Coast Guard, Minn. Dept. of Revenue, the City of Charlotte (NC), Veterans Admin., Rockwater Energy, FMC, a bank, and an insurance company.)

2. But some tasks will be labor intensive: metrics definition, software development, data collection.

It's true that defining metrics is time consuming and has to be done by managers in their respective mission units. But once they are defined, they won't change very often. And some of the metrics are generic across all units, such as cycle time, customer satisfaction, employee attitudes, etc. Also, software tools are available to assist in this task.

Software development efforts should be kept to a minimum by using COTS products to the maximum. There are now companies that specialize in this kind of product, but most agencies can probably just leverage the existing financial data warehouse to support this system.

Data collection will be supported in many cases by using web-based forms. Manual work such as collecting customer data, telephone interviews, etc. can be supported by broadening the work of the existing 'financial assistants' to non-financial metrics.

3. We have only limited control over results. Why should we be held accountable for things we can't control?

With our strategic initiative of customer service, we must take responsibility for our mission effectiveness; we have to improve customer relationships; there is no alternative. Our customers will understand our limitations if they are in a close partnership with us.

4. The results will be used against us.

The results can also be used for us. What has been hurting us more is not having any results to show.

What better way to gain resources from the sponsor than to clearly show them the consequences of the present situation.

We can't see our own blind spots. We need someone else to point them out to us. The measurements add visibility, even if it is painful.

If we excel, it is NOT generally true that successful organizations lose budget.

5. Management will misuse or misinterpret the results. The process will be gamed.

That's why we need a balanced mix of several measures. Inspections such as Baldrige assessments are done by a variety of dedicated people across the organization. They want to do a good, honest job.

The measurements will be validated by an independent IG team or third party.

It should be emphasized to everyone that the main purpose of the balanced scorecard is not individual performance, but collective organizational performance. (Another separate system should be used for individual performance evaluations.) Therefore, results at the lower levels can be aggregated in such a way that individual employee performance is not reported out. This will eliminate a source of fear that will lead to gaming or failure to produce the data.

6. They will score us by inappropriate or unfair standards.

We get to define our own metrics, at least the ones that are pertinent to each mission. That's the only way to define OUR mission effectiveness. And the other metrics, like cycle time and customer satisfaction, are generic across all organizations.

7. Too much complexity: There are numerous systems and assessment criteria; how will we combine them all? (ISO 9001, ISO 14000, Baldrige, ABC, EVA, CMM, Balanced Scorecard, strategic initiatives).

I don't think it is necessary to make such a complex system. What is needed is a minimum basic set of measurements across various business perspectives and aligned to our strategic plan, as the balanced scorecard prescribes. We do need to develop ISO certifications when appropriate, but the metrics for them could be simple, like 'percentage coverage' and 'cycle time'.

After all, the purpose of the system is to clarify our situation for senior managers, not to make it more complex.

8. It's too big and ambitious and expensive to deploy a performance measurement system in this entire organization. We can't afford such large-scale efforts.

Agreed. It should not be deployed across the organization all at once. Rather, it should start small, in a business unit, and be allowed to develop incrementally. Experience will be gained before company-wide deployment is considered. This reduces cost, risk, and disruption.

Appendix A: Definitions of Terms

Some of these definitions were obtained from government agencies such as the Office of Management and Budget (OMB) or the General Accounting Office (GAO); some were obtained from other authorities. Links are provided to sites that add more details.

Activity-Based Costing:A business practice in which costs are tagged and accounted in detailed activity categories, so that return on investment and improvement effectiveness can be evaluated. Implementing ABC requires proper data structures, and an adequate data reporting and collection system involving all employees in the activity.

Activity-Based Management: The use of ABC data to ascertain the efficiency or profitability of business units, and the use of strategic initiatives and operational changes in an effort to optimize financial performance.

Agency: In most US Federal Government legislation, an organization with a budget of at least $20 million per year.

Applied Information Economics (AIE): AIE is a practical application of scientific and mathematical methods to the Information Technology investment process. AIE uses statistical methods to maintain consistency in risk analysis and decision making with a specified level of uncertainty.

Architecture: Design; the way components fit together. May be conceived of any complex system such as "software architecture" or "network architecture" [Free On-line Dictionary of Computing]. An IT architecture is a design for the arrangement and interoperation of technical components that together provide an organization its information and communication infrastructure. [ICH].

Balanced Scorecard: A measurement-based strategic management system, originated by Robert Kaplan and David Norton, which provides a method of aligning business activities to the strategy, and monitoring performance of strategic goals over time.

Baldrige Award: A prestigious award, developed by Malcom Baldrige in 1984 to offer an incentive to companies that score highest on a detailed set of management quality assessment criteria. The criteria include leadership, use of information and analysis, strategic planning, human resources, business process management, financial results and customer focus and satisfaction. The award is currently administered by the National Institute for Standards and Technology.

Baseline: Data on the current process that provides the metrics against which to compare improvements and to use in benchmarking. [GAO]

Benchmarking: The process of comparing one set of measurements to another. This may be done for various reasons, such as to determine trends in a process over time, or to compare one organization's efficiency to another's.

Business case: A structured proposal for business improvement that functions as a decision package for organizational decision-makers. A business case includes an analysis of business process performance and associated needs or problems, proposed alternative solutions, assumptions, constraints, and a risk-adjusted cost-benefit analysis. [GAO]

Business Process Improvement: A methodology for focused change in a business process achieved by analyzing the AS-IS process using flowcharts and other tools, then developing a streamlined TO-BE process in which automation

may be added to result in a process that is better, faster, and cheaper. BPI aims at cost reductions of 10-40%, with moderate risk.

Business Process Reengineering: A methodology for radical, rapid change in business processes achieved by redesigning the process from scratch and then adding automation. Aimed at cost reductions of 70% or more when starting with antiquated processes, but with a significant risk of lower results.

Capability Maturity Model (CMM): A scale for assessing the degree of built-in documentation and discipline in a process, in which the scale goes from Level 1, with no formal process, to Level 5, with a continuous, rigorous and self-improving process. Developed by the Software Engineering Institute of Carnegie Mellon University, and now being extended to a broader range of applications in management.

Core capability: A competitive advantage of an organization; e.g., specific organizational competencies such as intangible assets or resource deployments. These are built up over time and cannot be imitated easily. They are distinct from supplemental and enabling capabilities, neither of which is sufficiently superior to those of competitors to offer sustainable advantage. Technological capability is a term used to encompass a system of activities, tangible assets, skills, information bases, managerial systems, and values that together create a special advantage for an organization. [Dorothy Leonard-Barton]. Also called **core competency** .

Cost-benefit analysis: A technique used to compare the various costs associated with an investment with the benefits that it proposes to return. Both tangible and intangible factors should be addressed and accounted for. [GAO]

Customers: In the private sector, those who pay for products or services. In government, customers consist of (a) the taxpayers; (b) taxpayer representatives in Congress; (c) the sponsors of the agency; (d) the managers of an agency program; (e) the recipients of the agency's products and services. There may be several more categories of 'customers'; they should be carefully identified for maximum strategic benefit.

Critical success factors: See key success factors.

Discount factor: The factor that translates expected financial benefits or costs in any given future year into present value terms. The discount factor is equal to 1/(1 + i)t where i is the interest rate and t is the number of years from the date of initiation for the program or policy until the given future year. [GAO] **Discount rate** is the interest rate used in calculating the present value of expected yearly benefits and costs. [GAO]

Economic Value Added (EVA): Net operating profit after taxes minus (capital x cost of capital). EVA is a measure of the economic value of an investment or project.

Earned Value Management: Earned value is a project management technique that relates resource planning to schedules and to technical cost and schedule requirements. All work is planned, budgeted, and scheduled in time-phased "planned value" increments constituting a cost and schedule measurement baseline. There are two major objectives of an earned value system: to encourage contractors to use effective internal cost and schedule management control systems; and to permit the customer to be able to rely on timely data produced by those systems for determining product-oriented contract status. (http://www.acq.osd.mil/pm/evbasics.htm)

Effectiveness: (a) Degree to which an activity or initiative is successful in achieving a specified goal; (b) degree to which activities of a unit achieve the unit's mission or goal.

Efficiency: (a) Degree of capability or productivity of a process, such as the number of cases closed per year; (b) tasks accomplished per unit cost.

EFQM: The European Foundation for Quality Management's Model of Excellence, which provides benchmarking and self-assessment in a framework similar to that of the Malcom Baldrige criteria.

Enterprise: A system of business endeavor within a particular business environment. An **enterprise architecture** is a design for the arrangement and interoperation of business components (e.g., policies, operations, infrastructure, information) that together make up the enterprise's means of operation. [ICH].

Executive Information System: Generic term for a software application that provides high-level information to decision makers, usually to support resource allocation, strategy or priority decisions. This could include a balanced scorecard system, Enterprise Resource Planning (ERP) system, Decision Support System (DSS), etc. Technologies include databases, a data warehouse, and analytic applications such as OLAP (On-Line Analysis Protocol), and many mission-specific data reporting systems.

Federal Enterprise Architecture Framework (FEAF) - An organizing mechanism for managing development, maintenance, and facilitated decision making of a Federal EA. The Framework provides a structure for organizing Federal resources and for describing and managing Federal EA activities.

Feedback: Information obtained from the results of a process that is used in guiding the way that process is done. There should be feedback loops around all important activities. Strategic feedback (for each strategic activity) validates effectiveness of the strategy by measuring outcomes (long-term). Diagnostic feedback tracks efficiency of internal business processes (usually generic across all mission activities). Metrics feedback allows for refining the selection of metrics to be measured. Measurement feedback allows for the improvement of measurement techniques and frequency.

Framework: A logical structure for classifying and organizing complex information. [Federal Enterprise Architecture Framework] See also Zachman framework.

Functional Economic Analysis (FEA): An analytical technique for assessing the value added at various stages or functions in a process. Most relevant in manufacturing industries, where such increments in value can be readily measured.

Goal:A specific intended result of a strategy; used interchangeably with objective. See also Outcome Goal, Output Goal, Performance Goal, Strategic Goal.

Improvement: An activity undertaken based on strategic goals such as reduced cycle time, reduced cost, and customer satisfaction. All improvement efforts should be linked to the strategy. They are either improvements directly in mission activities (production, design, testing etc.) or in support activities for the mission. There may be some overlap in these; that is ok.

Indicator: A simple metric that is intended to be easy to measure. Its intent is to obtain general information about performance trends by means of surveys, telephone interviews, and the like.

Information technology (IT): Includes all matters concerned with the furtherance of computer science and technology and with the design, development, installation, and implementation of information systems and applications [San Diego

State University]. An information technology architecture is an integrated framework for acquiring and evolving IT to achieve strategic goals. It has both logical and technical components. Logical components include mission, functional and information requirements, system configurations, and information flows. Technical components include IT standards and rules that will be used to implement the logical architecture.

Intermediate Outcome: An outcome from a business activity that can be identified and measured in the near term, which is practical when long-term outcomes are diffuse or otherwise difficult to measure. It is intermediate between outputs and outcomes.

ISO 9000: ISO, the International Organization for Standardization, has established a series of performance and quality management system standards for industrial organizations. Organizations may receive certification from the ISO Certification body if they are in compliance with the relevant international standards.

IT investment management approach: An analytical framework for linking IT investment decisions to an organization's strategic objectives and business plans. The investment management approach consists of three phases--select, control and evaluate. Among other things, this management approach requires discipline, executive management involvement, accountability, and a focus on risks and returns using quantifiable measures. [GAO]

Key Performance Indicators (KPI): A short list of metrics that a company's managers have identified as the most important variables reflecting mission success or organizational performance.

Key Success Factors (KSF): The three to five broad areas on which an organization must focus in order to achieve its vision. They may be major weaknesses that must be fixed before other goals can be achieved. They are not as specific as strategies. Sometimes called critical success factors. (Mark Graham Brown, Winning Score).

Knowledge Management: "Knowledge Management caters to the critical issues of organizational adaptation, survival and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings." (http://www.brint.com/interview/maeil.htm)

Measurement: An observation that reduces the amount of uncertainty about the value of a quantity. In the balanced scorecard, measurements are collected for feedback. The measurement system gathers information about all the significant activities of a company. Measurements are the data resulting from the measurement effort. Measurement also implies a methodology, analysis, and other activities involved with *how* particular measurements are collected and managed. There may be many ways of measuring the same thing.

Metrics: Often used interchangeably with measurements. However, it is helpful to separate these definitions. Metrics are the various parameters or ways of looking at a process that is to be measured. Metrics define *what* is to be measured. Some metrics are specialized, so they can't be directly benchmarked or interpreted outside a mission-specific business unit. Other measures will be generic, and they can be aggregated across business units, e.g. cycle time, customer satisfaction, and financial results.

Mission activities: Things that an agency does for its customers. For private companies, profit or value creation is an overarching mission. For nonprofit organizations, the mission itself takes priority, although cost reduction is still usually a high priority activity.

Mission effectiveness: Degree to which mission activities achieve mission goals.

Mission value: (1) Mission outcome benefits per unit cost; a key metric for nonprofit and governmental organizations. (2) For a collection of missions within an organization, the relative value contributed by each mission. (3) The combination of strategic significance and results produced by a mission.

Mixed system: An information system that supports both financial and non-financial functions. [GAO]

Model - A representation of a set of components of a process, system, or subject area, generally developed for understanding, analysis, improvement, and/or replacement of the process [GAO]. A representation of information, activities, relationships, and constraints [Treasury Enterprise Architecture Framework].

Net present value (NPV): The future stream of benefits and costs converted into equivalent values today. This is done by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits. [GAO]

Non-value-added work: Work activities that add no value to the mission of the organization. Such activities may or may not be necessary; necessary ones may include utilities, supplies, travel and maintenance; unnecessary ones may include searching for information, duplicating work, rework, time not working, etc.

Objective: An aim or intended result of a strategy. See goal.

Organization: The command, control and feedback relationships among employees in an agency, and their information. The data flow structure for the performance management system generally follows the organizational structure.

Outcome: A description of the intended result, effect, or consequence that will occur from carrying out a program or activity. (OMB). A long-term, ultimate measure of success or strategic effectiveness.

Output: A description of the level of activity or effort that will be produced or provided over a period of time or by a specified date, including a description of the characteristics and attributes (e.g., timeliness) established as standards in the course of conducting the activity or effort. (OMB). A tactical or short-term quality or efficiency indicator for a business process.

Performance-based budgeting: A management process in which performance of various activities in an organization is measured, and budgets for further work on these activities is adjusted based on their performance. (Note: this does not necessarily imply that budgets for poorly-performing activities will be reduced; see the discussion here.)

Performance goal: A target level of performance expressed as a tangible, measurable objective, against which actual achievement can be compared, including a goal expressed as a quantitative standard, value, or rate. (OMB).

Performance indicator: A particular value or characteristic used to measure output or outcome.

Performance measurement (PM): The process of developing measurable indicators that can be systematically tracked to assess progress made in achieving predetermined goals and using such indicators to assess progress in

achieving these goals [GAO]. A performance gap is the gap between what customers and stakeholders expect and what each process and related subprocesses produces in terms of quality, quantity, time, and cost of services and products [GAO].

Performance metric: see Metrics.

Plan: A prescribed, written sequence of actions to achieve a goal, usually ordered in phases or steps with a schedule and measureable targets; defines who is responsible for achievement, who will do the work, and links to other related plans and goals. By law agencies must have strategic plans, business plans, and performance plans. They may also have implementation plans, program plans, project plans, management plans, office plans, personnel plans, operational plans, etc.

Profit: Financial gain, or revenues minus expenses. Profit is the overarching mission of private-sector companies. Nonprofit or governmental organizations either operate at a loss or attempt to achieve a zero profit; for them the overarching mission is a charter for a service, or a goal to be achieved. Therefore, there is a basic distinction in measures of strategic success between profit and nonprofit or governmental organizations.

Project management: A set of well-defined methods and techniques for managing a team of people to accomplish a series of work tasks within a well-defined schedule and budget. The techniques may include work breakdown structure, workflow, earned value management (EVM), total quality management (TQM), statistical process control (SPC), quality function deployment (QFD), design of experiments, concurrent engineering, Six Sigma etc. Tools include flowcharts, PERT charts, GANTT charts (e.g. Microsoft Project), control charts, cause-and-effect (tree or wishbone) diagrams, Pareto diagrams, etc. (Note that the balanced scorecard is a strategic management, *not* a project management technique).

Return on Investment (ROI): In the private sector, the annual financial benefit after an investment minus the cost of the investment. In the public sector, cost reduction or cost avoidance obtained after an improvement in processes or systems, minus the cost of the improvement.

Risk analysis: A technique to identify and assess factors that may jeopardize the success of a project or achieving a goal. This technique also helps define preventive measures to reduce the probability of these factors from occurring and identify countermeasures to successfully deal with these constraints when they develop. [GAO]

Sensitivity analysis: Analysis of how sensitive outcomes are to changes in the assumptions. The assumptions that deserve the most attention should depend largely on the dominant benefit and cost elements and the areas of greatest uncertainty of the program or process being analyzed. [GAO]

Six Sigma: Literally, refers to the reduction of errors to six standard deviations from the mean value of a process output or task opportunities, i.e. about 1 error in 300,000 opportunities. In modern practice, this terminology has been applied to a quality improvement methodology for industry.

Stakeholder: An individual or group with an interest in the success of an organization in delivering intended results and maintaining the viability of the organization's products and services. Stakeholders influence programs, products, and services. Examples include congressional members and staff of relevant appropriations, authorizing, and oversight committees; representatives of central management and oversight entities such as OMB and GAO; and representatives

of key interest groups, including those groups that represent the organization's customers and interested members of the public. [GAO]

Standard: A set of criteria (some of which may be mandatory), voluntary guidelines, and best practices. Examples include application development, project management, vendor management, production operation, user support, asset management, technology evaluation, architecture governance, configuration management, problem resolution. [Federal Enterprise Architecture Framework]

Statistical Process Control (SPC): A mathematical procedure for measuring and tracking the variability in a manufacturing process; developed by Shewhart in the 1930's and applied by Deming in TQM.

Strategic goal or general goal: An elaboration of the mission statement, developing with greater specificity how an agency will carry out its mission. The goal may be of a programmatic, policy, or management nature, and is expressed in a manner which allows a future assessment to be made of whether the goal was or is being achieved. (OMB). The quantifiable aims of strategic activities, including outcome goals and output goals.

Strategic objective or general objective: Often synonymous with a general goal. In a strategic plan, an objective may complement a general goal whose achievement cannot be directly measured. The assessment is made on the objective rather than the general goal. Objectives may also be characterized as being particularly focused on the conduct of basic agency functions and operations that support the conduct of programs and activities. (OMB)

Strategic activities: activities or initiatives that a company or agency does for itself, to achieve its overall strategic goals.

Strategic imperatives: Company values.

Strategic initiatives: Specific activities or actions undertaken to achieve a strategic goal, including the plans and milestones.

Strategic measures or metrics: Quantifiable indicators of status of a strategic activity.

Strategic plan - A document used by an organization to align its organization and budget structure with organizational priorities, missions, and objectives. According to requirements of Government Performance and Results Act (1993), a strategic plan should include a mission statement, a description of the agency's long-term goals and objectives, and strategies or means the agency plans to use to achieve these general goals and objectives. The strategic plan may also identify external factors that could affect achievement of long-term goals. [GAO] Strategic planning is a systematic method used by an organization to anticipate and adapt to expected changes. The IRM portion of strategic planning sets broad direction and goals for managing information and supporting delivery of services to customers and the public and identifies the major IRM activities to be undertaken to accomplish the desired agency mission and goals. [GAO]

Strategic targets: Numbers to achieve on each strategic metric by a specified time.

Strategic themes: The general strategy broken down into categories that focus on different perspectives of the company that can lead to overall success, such as customer satisfaction, reduced cost, employee growth, etc. Usually general and not quantified.

Strategy: (1) Hypotheses that propose the direction a company or agency should go to fulfil its vision and maximize the possibility of its future success. (2) Unique and sustainable ways by which organizations create value. (from Kaplan & Norton). Answers the question, "Are we doing the right things?"

Strategy Map: A 2-dimensional visual tool for designing strategies and identifying strategic goals. It usually shows the four perspectives of the balanced scorecard in four layers, with learning & growth at the bottom, followed by business processes, customer satisfaction, and financial results (or mission value in the case of nonprofits). Activities to achieve strategic goals are mapped as 'bubbles' linked by cause-effect arrows that are assumed to occur. Sometimes called "strategic map".

Sunk cost: A cost incurred in the past that will not be affected by any present or future decision. Sunk costs should be ignored in determining whether a new investment is worthwhile. [GAO]

Support activities: Internal business activities that enable achievement of mission activities and strategic activities, but that are permanent and not directly linked to specific goals.

System: A collection of components organized to accomplish a specific function or set of functions. [IEEE STD 610.12]

Tactical goal: see Output goal.

Target: A quantitative measurement of a performance metric that is to be achieved by a given time. Both the metric and the schedule need to be specified for targets. A stretch target is the same thing, but its quantitative value is much higher, demanding breakthrough performance to achieve.

Total Quality Management (TQM): A methodology for continuous monitoring and incremental improvement of a supply-line process by identifying causes of variation and reducing them. Originated by Deming in the 1950's, and widely applied in the Federal government, where it was sometimes called Total Quality Leadership (TQL).

Unit: (1) A functional or business component of an agency, generally with a specified mission or support activity. (2) A standard basis for quantitative measurements.

Unit cost: A financial metric in which cost is based on the unit of delivery or consumption of a product or service, such as number of requests processed per day.

Value: Benefit per unit cost.

Value-added: Those activities or steps that add to or change a product or service as it goes through a process; these are the activities or steps that customers view as important and necessary. [GAO]

Value chain: The sequential set of primary and support activities that an enterprise performs to turn inputs into value-added outputs for its external customers. An IT value chain is that subset of enterprise activities that pertain to IT operations, both to add value directly for external customers and to add indirect value by supporting other enterprise operations.

Value proposition: 1. The unique added value an organization offers customers through their operations. 2. The logical link between action and payoff that knowledge management must create to be effective; e.g., customer intimacy, product-to-market excellence, and operational excellence [Carla O'Dell & C. Jackson Grayson].

Values: General guiding principles that are to govern all activities.

Vision: Long-term goal of strategy. Answers the question, 'How would the country be different if your mission were fully successful?'

Zachman Framework: **Classic work on the concepts of information systems architecture that defined the concept of a framework and provided a 6x6 matrix of architecture views and perspectives with products. [John Zachman, 1987, IBM Journal]**

Appendix B: The Balanced Scorecard - Who's Doing It?

Increasingly, as balanced scorecard (BSC) concepts become more refined, we have had more inquiries asking for examples of organizations that have implemented the BSC, how the BSC applies to a particular business sector, metrics are appropriate for that sector, etc. This section provides a database of working balanced scorecard examples that our research has located.

Although by the end of 2001 about 36% of global companies are working with the balanced scorecard (according to Bain), much of the information in the commercial sector is proprietary, because it relates to the strategies of specific companies. Public-sector (government) organizations are usually not concerned with proprietary information, but also they do not usually have a mandate (or much funding) to post their management information on web sites.

The following link will take you to our compilation of data on organizations that have reported at least a partial adoption of the balanced scorecard:

Adopters of the balanced scorecard (in alphabetical order of organization name)

It is necessary to do extensive research in order to locate this information. If you would like to report other balanced scorecard examples, please let us know!

Organization	Sector	City	State	Country
Allfirst Bank	Banking			USA
Ann Taylor Stores	Retail			USA
AT&T Canada Long Distance	Telecommunications			Canada
Bank of Tokyo-Mitsubishi	Banking			Japan
Blue Cross Blue Shield of Minnesota	Health Care Insuranc		MN	USA
BMW Financial Services	Financial Services			Germany
Bonneville Power Administration	Utilities		WA	USA
Boston Lyric Opera	Entertainment	Boston	MA	USA
British Telecommunications Worldwide	Telecommunications			UK
California Poly. State University, San Luis Obispo	Higher Education	San Luis Obispo	CA	USA
California State University system	Higher Education			USA
California State University, Pomona	Higher Education		CA	USA
Carleton University	Higher Education	Ottawa	ON	Canada
Caterpillar, Inc.	Manufacturing			USA
Charleston Southern University	Higher Education	Charleston	SC	USA
Chemical Bank	Banking		NY	USA
Cigna Property & Casualty	Insurance			USA
Cigna Property & Casualty	Insurance			USA
Citizen Schools	Middle Schools	Boston	MA	USA
City of Charlotte	Local Government	Charlotte	NC	USA
Cornell University	Higher Education	Cornell	NY	USA

Crown Castle International Corp.	Telecommunications			USA
DaimlerChrysler	Manufacturing			Germany
Datex-Ohmeda	Health Care Supplies			USA
DDB Worldwide	Marketing			
Deakin University	Higher Education	Victoria		Australia
Defense Logistics Agency	Government			USA
Devereux Foundation	Mental Health Care			USA
Duke University Hospital	Health Care			USA
DuPont	Manufacturing		DE	USA
Entergy	Energy	New Orleans	LA	USA
Equifax, Inc.	Financial Services	Atlanta	GA	USA
ExxonMobil Corp.	Energy			USA
Fannie Mae	Banking	Washington	DC	USA
Finnforest, UK	Natural Resources			UK
First Energy Corp.	Energy			USA
Ford Motor Company	Manufacturing			USA
Fort Hays State University	Higher Education	Hays	KN	USA
Foster Farms	Agriculture		CA	USA
General Electric Company	Manufacturing			USA
High Performance Systems, Inc.	Information Technolo			USA
Hilton Hotels Corp.	Hospitality			USA
Homestead Technologies	Internet Communicati			USA
Honeywell	Manufacturing			USA
IBM	Information Technolo			USA
Illinois Benedictine College	Higher Education		IL	USA
Indiana University	Higher Education		IN	USA
Ingersoll-Rand	Manufacturing			USA
International Data Corp.	Information Technolo			USA
KeyCorp	Financial Services			USA
Lawrence Hospital	Health Care	Westchester	NY	USA
Link List	Multiple			
Link List	Multiple			
Lloyds TSB Bank	Banking			UK
May Institute	Health Care	Norwood	MA	USA
McCord Travel Management (now WorldTravel BTI)	Leisure & Travel			USA
MDS	Health & Life Scienc			USA
Media General	Media			USA
Mercury Computer Systems, Inc.	Information Technolo			USA
Mobil North American Marketing & Refining	Energy			USA
Montefiore Medical Center	Health Care			USA

National City Bank	Banking	Cleveland	OH	USA
National Reconnaissance Office	Government	Dulles	VA	USA
NCR Corp.	Information Technolo			USA
Northern States Power Company	Energy			USA
Northwestern Mutual	Insurance			USA
Nova Scotia Power, Inc.	Utilities		NS	Canada
Ohio State University	Higher Education	Columbus	OH	USA
Ontario Hospitals	Health Care			Canada
Owens & Minor	Health Care Supply			USA
Pennsylvania State University	Higher Education	State College	PA	USA
Pfizer Inc.	Pharmaceuticals			USA
Philips Electronics	Manufacturing			Netherlands
Prison Fellowship Ministries	Humanitarian			USA
Reuters America, Inc.	Financial Services			USA
Ricoh Corp.	Manufacturing			Japan
Royal Canadian Mounted Police	Government			Canada
Saatchi & Saatchi Worldwide	Marketing		NY	USA
Saint Leo University	Higher Education	Saint Leo	FL	USA
Scudder Kemper Investments Inc.	Financial Services			USA
Sears Roebuck & Company	Retail			USA
Siemens AG	Manufacturing			Germany
Southern Gardens Citrus Processing Corp.	Food Processing		FL	USA
St. Mary's/Duluth Clinic Health System	Health Care		MN	USA
St. Michael's Hospital	Health Care	Toronto	ON	Canada
T. Rowe Price Investment Technologies, Inc.	Financial Services			USA
Texas Education Agency	Education		TX	USA
The Handleman Company	Wholesale distributi			USA
The Store 24 Companies, Inc.	Retail			USA
The Thompson Corp.	Information Systems			USA
UK Ministry of Defence	Government			UK
Unicco Service Co.	Industrial Services			USA
United Postal Service	Shipping			USA
United Way of Southeastern New England	Humanitarian		MA	USA
Univ. of California	Higher Education		CA	USA
Univ. of California San Diego	Higher Education	San Diego	CA	USA
Univ. of California San Diego	Higher Education	San Diego	CA	USA
Univ. of California San Diego	Higher Education	San Diego	CA	USA
Univ. of California San Diego	Higher Education	San Diego	CA	USA
University of Akron, Ohio	Higher Education	Akron	OH	USA
University of Alaska	Higher Education		AK	USA
University of Arizona	Higher Education	Tucson	AZ	USA

University of California, Berkeley	Higher Education		CA	USA
University of California, Los Angeles	Higher Education	Los Angeles	CA	USA
University of Denver	Higher Education	Denver	CO	USA
University of Florida	Higher Education	Gainesville	FL	USA
University of Iowa	Higher Education	Iowa City	IA	USA
University of Louisville, KY	Higher Education	Louisville	KY	USA
University of Missouri	Higher Education	Kansas City	MO	USA
University of North Carolina at Wilmington	Higher Education	Wilmington	NC	USA
University of Northern Colorado	Higher Education		CO	USA
University of St. Thomas	Higher Education	Minneapolis	MN	USA
University of Vermont	Higher Education	Burlington	VT	USA
University of Virginia Library	Higher Education		VA	USA
University of Washington	Higher Education	Seattle	WA	USA
US Army Medical Command	Health Care		VA	USA
US West	Telecommunications			USA
Vanderbilt University Medical Center	Health Care	Nashville	TN	USA
Verizon Communications Inc.	Telecommunications			USA
Volvofinans	Financial Services			Sweden
Walt Disney World Company	Entertainment			USA
Wayne State University	Higher Education	Detroit	MI	USA
Wells Fargo Bank	Banking		CA	USA