Chapter 4

Aligning IT to Organisational Strategy

Seven deadly sins of the IT scorecard:

1. An IT-centric view of IT performance
2. Measures that don't matter
3. Lack of standard metrics definitions
4. Over-reliance on tools
5. Lack of drill-down capability hindering interpretation
6. Too many metrics
7. No individual impact

—Working Council for Chief Information Officers (2003)

In the late 1980s, the deficiency in measuring IT using purely financial measures was addressed by Parker, Benson, and Trainor (1988) in their book on information economics.

Information economics assigns numerical scores to value and risk categories by a joint committee of end users and IT staff. For example, a value category of "0" would signify "no positive contribution" while a "5" would indicate a "large positive contribution." In the same vein, in the risk category, a "0" would mean no risk and a "5" would indicate a "large risk." Each of the categories is assigned a weight. By summing the weighted scores of the value categories and subtracting the weighted

scores of the risk categories, one can calculate the total score of each project. *Value linking* incorporates the benefits and cost in other functional areas, while *value restructuring* refers to the efficiency and effectiveness of employees (e.g., does the new system free up employee time so that they can do their own jobs more effectively?). The balanced scorecard (BSC) extends the information economics theory into a set of constructs understandable and immediately usable throughout the organization.

This chapter discusses how the balanced scorecard can be used within the IT department to assess its own performance as well as to integrate itself to the organization as a whole. One quickly discovers that there are a variety of approaches to implementing an IT scorecard.

The IT Balanced Scorecard

Over the past decade, many CIOs have realized that it is not sufficient to manage merely the IT end of the business. The integration of IT strategy to business strategy must be managed as well. The tool chosen for this task is the balanced scorecard.

The Working Council for Chief Information Officers (2003) did an extensive review of IT scorecards and found that the most advanced scorecards shared the following six structural attributes:

1. *Simplicity of presentation.* The very best scorecards are limited to a single page of from 10 to 20 metrics written in nontechnical language.
2. *Explicit links to IT strategy.* The scorecard should be tightly coupled to the IT strategic planning process and assist in tracking progress against IT's key goals and objectives.
3. *Broad executive commitment.* Both senior IT as well as senior business managers should be involved in the scorecard process — both creation and ongoing.
4. *Enterprise-standard metrics definitions.* Consensus should be quickly achieved on metrics definitions. The review meetings should focus on decisions rather than debate over metrics.
5. *Drill-down capability and available context.* The high-level IT scorecard should allow for detailed review of trends or variance by providing more granularity on component elements.
6. *Individual manager compensation* should be linked to scorecard performance.

Progressive scorecard practitioners track metrics in five key categories:

1. *Financial performance.* IT spending in the content of service levels, project progress, etc. Sample metrics include cost of data communications per seat and relative spending per portfolio category.
2. *Project performance.* Sample metrics include percentage of new development investment resulting in new revenue streams and percentage of IT R&D investment leading to IT service improvements.
3. *Operational performance.* Instead of concentrating measurement efforts on day-to-day measures, best-in-class practitioners seek to provide an aggregate, customer-focused view of IT operations. Sample metrics include peak time availability and critical process uptime.
4. *Talent management.* This category of metrics seeks to manage IT human capital. Measures include staff satisfaction and retention as well as attractiveness of the IT department to external job seekers. Metrics include retention of high-potential staff and external citations of IT achievement.
5. *User satisfaction.* Sample metrics include focused executive feedback and user perspective.

The Working Council also found that best-of-breed practitioners included two additional metric categories:

1. *Information security.* These metrics monitor remediation efforts for known vulnerabilities and track proactive policy and certification efforts. (Also see Appendix K for a discussion of E-business auditing.) Sample metrics include percentage of staff receiving security training and percentage of external partners in compliance with security standards.
2. *Enterprise initiatives.* Best-of-breed practitioners also use the scorecard to highlight IT's contributions to initiatives of corporate strategic importance. Sample metrics include percentage of acquired company systems integrated in the Merger and Acquisition category and the number of business process steps enabled by technology in the Process Reengineering category.

Bowne & Co. (www.bowne.com), a New York City-based documents management company, initiated an IT balanced scorecard in 1997. Their process consisted of seven steps:

1. Kick-off training for IT staff.
2. *Ongoing strategy mapping.* The annual IT strategy, like most companies, is derived from the corporate strategy.

3. *Metrics selection.* A team, including the chief technology officer, created a list of metrics. The list was refined using analysis of each potential metric's strengths and weaknesses. The CIO approved the final list.
4. *Metrics definition.* A set of standard definitions is created for each metric. It defines the measurement technique as well as the data collection process. It outlines initiatives that must be completed to allow tracking of the metrics.
5. *Assigning metric ownership.* Owners are assigned to each metric. This person is responsible for scorecard completion. Their bonuses are related to their scorecard-related duties.
6. *Data collection and quality assurance.* Data frequency varies by metric, based on cost of collection, the corporate financial reporting cycle, and the volatility of the business climate.
7. CIO, CTO, and corporate officers review scorecard every six months; metrics are revisited annually.

Bowne & Co. is a good example of a departmentwide IT scorecard but this process can also be used to develop a scorecard for a particular system. The Central Intelligence Agency (Hagood and Friedman, 2002) did just this for a human resource information system (HRIS). The program director developed six criteria for success that would drive the balanced scorecard development effort:

1. Deliver each new program segment on time and within budget
2. Deliver each functionality as promised
3. Maintain high system performance standards
4. Reduce reliance on legacy systems
5. Increase customer satisfaction
6. Employee satisfaction

The resulting scorecard can be seen in Table 4.1.

Altering the Balanced Scorecard for IT

Martinsons, Davison, and Tse (1999) suggest that the four balanced scorecard perspectives might require some modification to be effective as an IT scorecard. Their reasoning is that the IT department is typically an internal rather than external service supplier, and projects are commonly carried out for the benefit of both the end users and the organization as a whole — rather than individual customers within a large market.

TABLE 4.1 The CIA's HRIS Balanced Scorecard

Goals	*Objectives*	*Measures*	*Sources*
Customer Perspective			
Provide HR information systems that meet agency needs	Incorporate stakeholder feedback into strategic planning Provide timely and accurate responses to customer service requests	Component HR officer survey HRIS help desk performance Level of participation in CIA IT forums percent with collaboration	HR front office Help desk personnel
Deliver all projects for customers in conformance with an acceptable plan	All projects have plans negotiated with customers and are baselined	Percent of baselined projects with a plan	Chief of operations
Manage HRIS work in conformity with published strategic and tactical plans	Maintain HR roadmap as basis for resource allocation Communicate HRIS strategic direction to stakeholders	Roadmap reviewed every two weeks and updated Number of projects performed for direct customers Level of participation in CIA IT forums with collaborations	Personnel Chief of operations
Internal Process Perspective			
HRIS data is available for users to conduct their business	Improve accuracy of data entry Maintain data accurately within the HRIS Make HRIS available to users for input 97 percent of the time Ensure retrievable data is no older than 24 hours	Data entry error rates HRIS hourly availability data Payroll processing time Age of data	Compensation group System engineer

TABLE 4.1 (continued) The CIA's HRIS Balanced Scorecard

Goals	*Objectives*	*Measures*	*Sources*
Achieve the optimal balance between technical and strategic activities	Maintain balance between repair and new work Reduce demand for customer service needing intervention	Rework cost/unit of service Percent of time devoted to ad hoc work	Budget officer
Achieve the minimum architecture effective for HRIS	Implement an HRIS integration strategy Maintain alignment with CIA IS direction/initiatives	Number of non-Lawson apps in HRIS Total number of interfaces	System architect
Resource Perspective (Financial)			
Maximize the cost efficiency of operating and evolving the HRIS	Execute the budget consistent with strategic plan Understand and manage the cost drivers of HRIS	Percent of employees who have up-to-date information Cost/unit of service HRIS overhead as percent of total Total number of direct labor hours	Budget officer
Each project delivers its product as advertised	Scope, budget, and schedule are baselined at Project Initial Review for 100 percent of projects Project performance meets or exceeds baseline expectations	Schedule data Budget data Scope performance data	Chief of operations
Learning and Growth Perspective			
Maintain a skilled and productive workforce to operate and evolve the HRIS	Implement an effective strategic workforce plan Recruit skilled workers who have initiative, innovation, and flexibility	Number of employees with COTR certification Project management training levels Percent of technical training goals met	Personnel

TABLE 4.1 (continued) The CIA's HRIS Balanced Scorecard

Goals	*Objectives*	*Measures*	*Sources*
	Retain employees by giving opportunities and incentives Enhance employees' knowledge and skills		
Maintain a high degree of HRIS employee satisfaction	Enhance employees' knowledge and skills Provide opportunities for individual career growth	Project management training levels Percent of technical training goals met Job Description Index (JDI) scores Percent of voluntary separations	Personnel
Ensure that HRIS learns from the past for better future performance	Record, analyze, and use lessons learned Develop best practices for HRIS	Percent of leaders' time devoted to mentoring Percent of projects with lessons learned in database	Personnel

Martinsons et al. (1999) suggested four perspectives:

1. User orientation (end-user view):
   - Mission: deliver value-adding products and services to end users
   - Objectives: establish and maintain a good image and reputation with end users; exploit IT opportunities, establish good relationships with the user community, satisfy end-user requirements, and be perceived as the preferred supplier of IT products and services
2. Business value (management's view):
   - Mission: contribute to the value of the business
   - Objectives: establish and maintain a good image and reputation with management, ensure that IT projects provide business value, control IT costs, and sell appropriate IT products and services to third party
3. Internal processes (operations-based view):
   - Mission: deliver IT products and services in an efficient and effective manner
   - Objectives: anticipate and influence requests from end users and management, be efficient in planning and developing IT

applications, be efficient in operating and maintaining IT applications, be efficient in acquiring and testing new hardware and software, and provide cost-effective training that satisfies end users

4. Future readiness (innovation and learning view):
   - Mission: deliver continuous improvement and prepare for future challenges
   - Objectives: anticipate and prepare for IT problems that could arise, continuously upgrade IT skills through training and development, regularly upgrade IT applications portfolio, regularly upgrade hardware and software, conduct cost-effective research into emerging technologies and their suitability for the business

Martinsons et al. then drill down to provide IT-specific measures for each of these four perspectives. Most of the metrics have been derived from mainstream literature and include those presented in Table 4.2.

Martinsons et al. also explain that the three key balanced scorecard principles of:

1. Cause-and-effect relationships
2. Sufficient performance drivers
3. Linkage to financial measures

are built into their IT scorecard. They explain that cause-and-effect relationships can involve one or more of the four perspectives. For example, better staff skills (future readiness perspective) will reduce the frequency of bugs in an application (internal operations perspective).

Great-West Life Case Study

Van Grembergen, Saull, and De Haes (2003) performed an intensive study of the methodology used by Canada-based Great-West Life to develop their IT balanced scorecard. Great-West Life is the result of a merger between three financial services companies, each with its own IT services department. Stakeholders were quite concerned that they would lose control of their IT groups after the merger, so the merged IT department decided to utilize the balanced scorecard approach to formalize the controls and measures required to ensure IT success.

The merged IT department consisted of seven units: career centers, management services, account management, application delivery, technology services, corporate technology, and the E-business solutions center.

TABLE 4.2 IT Scorecard Metrics

Perspective	*Metric*
User orientation	Customer satisfaction
Business value:	
Cost control	Percent over/under IT budget
	Allocation to different budget items
	IT budget as a percent of revenue
	IT expenses per employee
Sales to third parties	Revenue from IT-related products or services
Business value of an IT project	Traditional measures (e.g., ROI, payback)
	Business evaluation based on information economics: value linking, value acceleration, value restructuring, technological innovation
	Strategic match with business contribution to product/service quality, customer responsiveness, management information, process flexibility
Risks	Unsuccessful strategy risk, IT strategy risk, definitional uncertainty (e.g., low degree of project specification), technological risk (e.g., bleeding edge hardware or software), development risk (e.g., inability to put things together), operational risk (e.g., resistance to change), IT service delivery risk (e.g., human/computer interface difficulties)
Business value of the IT department/ functional area	Percent resources devoted to strategic projects
	Percent time spent by IT manager in meetings with corporate executives
	Perceived relationship between IT management and top management
Internal processes:	
Planning	Percent resources devoted to planning and review of IT activities
Development	Percent resources devoted to applications development
	Time required to develop a standard-sized new application
	Percent of applications programming with reused code
	Time spent to repair bugs and fine-tune new applications

TABLE 4.2 (continued) IT Scorecard Metrics

Perspective	*Metric*
Operations	Number of end-user queries handled
	Average time required to address an end-user problem
Future readiness:	
IT specialist capabilities	IT training and development budget as a percent of overall IT budget
	Expertise with specific technologies
	Expertise with emerging technologies
	Age distribution of IT staff
Satisfaction of IT staff	Turnover/retention of IT employees
	Productivity of IT employees
Applications portfolio	Age distribution
	Platform distribution
	Technical performance of applications portfolio
	User satisfaction with applications portfolio
Research into emerging technologies	IT research budget as percentage of IT budget
	Perceived satisfaction of top management with reporting on how specific emerging technologies may or may not be applicable to the company

At the time of the study, the IT department employed 812 full-time and part-time employees.

The organizational structure of the IT department is quite interesting. Application delivery was created as a stand-alone unit to focus on continuous improvement of delivery performance. Account management was created to ensure effective communications with the company's end users. This department takes great pains to educate end users on IT corporate agendas and translate business needs into IT processes. As its name implies, the career center focuses on the professional development of IT staff. The corporate technology group utilizes a centralized approach to the development of a common enterprise architecture and technology policies. Finally, the management services group focuses on running IT as a business and provides for effective financial reporting and adherence to the IT scorecard.

As one can see, the organizational structure of the IT department roughly parallels that of the four perspectives of the balanced scorecard:

1. Financial perspective — management services
2. Customer perspective — account management
3. Internal perspective — application delivery, technology services, corporate technology, E-business solutions
4. Learning and growth perspective — career centers

Senior management of the three companies questioned the benefits of large investments in IT and wanted IT to be better aligned with corporate strategy. Some of the concerns of the different stakeholder groups included:

- Senior management:
  - Does IT support the achievement of business objectives?
  - What value does the expenditure on IT deliver?
  - Are IT costs being managed effectively?
  - Are IT risks being identified and managed?
  - Are targeted inter-company IT synergies being achieved?
- Business unit executives:
  - Are IT services delivered at a competitive cost?
  - Does IT deliver on its service level commitments
  - Do IT investments positively affect business productivity or the customer experience?
  - Does IT contribute to the achievement of our business strategies?
- Corporate compliance internal audit:
  - Are the organization's assets and operations protected?
  - Are the key business and technology risks being managed?
  - Are proper processes, practices, and controls in place?
- IT organization:
  - Are we developing the professional competencies needed for successful service delivery?
  - Are we creating a positive workplace environment?
  - Do we effectively measure and reward individual and team performances?
  - Do we capture organizational knowledge to continuously improve performance?
  - Can we attract and retain the talent we need to support the business?

TABLE 4.3 Moving IT from Service Provider to Strategic Partner

Service Provider	*Strategic Partner*
IT is for efficiency	IT is for business growth
Budgets are driven by external benchmarks	Budgets are driven by business strategy
IT is separable from the business	IT is inseparable from the business
IT is seen as an expense to control	IT is seen as an investment to manage
IT managers are technical experts	IT managers are business problem solvers

One of the most important initiatives the new CIO undertook was to migrate the new information services group to a strategic partner, as opposed to an IT services provider. As articulated by Venkatraman (1999) and summarized in Table 4.3, there are some important differences.

Great-West Life's IT scorecard, as described by Van Grembergen, Saull, and De Haes (2003), encompasses the following four quadrants:

1. *Customer orientation:* to be the supplier of choice for all information services, either directly or indirectly through supplier relationships.
2. *Corporate contribution:* to enable and contribute to the achievement of business objectives through effective delivery of value-added information services.
3. *Operational excellence:* to deliver timely and effective services at targeted service levels and costs.
4. *Future orientation:* to develop the internal capabilities to continuously improve performance through innovation, learning, and personal organization growth.

Van der Zee (1999) and Van Grembergen (2000) proposed that the relationship between IT and business can be more explicitly expressed through a cascade of balanced scorecards, as shown in Figure 4.1.

Cascading was used effectively at Great-West Life, similar to the example in Figure 4.1, with the addition of "governance services" scorecards. Notice the use of the term "scorecards" — plural. Each set of scorecards is actually composed of one or more unit scorecards. For example, the IT Operations scorecard also includes a scorecard for IT Service Desk. Great-West Life's four-quadrant IT scorecard consists of the following objectives, measures, and benchmarks, as shown in Tables 4.4, 4.5, 4.6, and 4.7.

The measures of each of these unit scorecards are aggregated into the IT balanced scorecard. This, in turn, is fed into and evaluated against the business balanced scorecard.

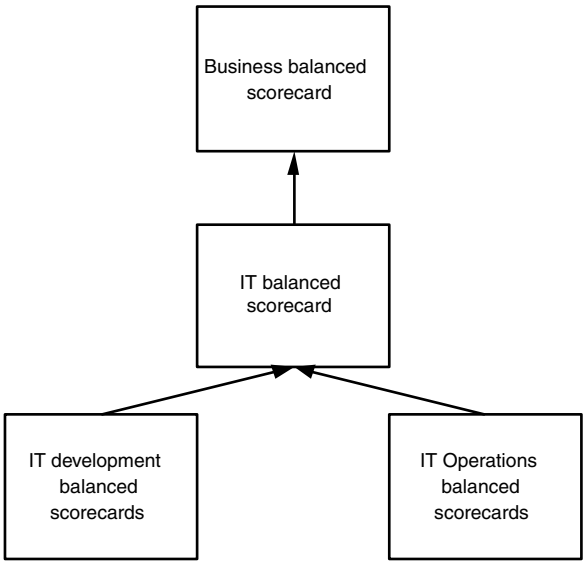

FIGURE 4.1 Cascade of balanced scorecards.

Representative IT Balanced Scorecard Value Metrics

There are a wide variety of metrics that an organization can utilize. Arveson (1998), writing for the Balanced Scorecard Institute, recommends the metrics outlined in Table 4.8. Readers should also review Appendix C, which contains a list of standard IT metrics, and Appendix B, which provides the metrics capability evaluation guide employed by the U.S. Air Force.

Drilling Down to the Specific System

Hopefully by now one understands the importance of developing cascading sets of interlinked balanced scorecards. From a departmental perspective, one will need to review, understand, and adhere to the organizational balanced scorecard from a macro perspective. However, one will need to review the departmental- and system-level scorecards from a micro level.

The beginning of this chapter discussed an example of a balanced scorecard used by the CIA to assess the performance of a human resource information system. Another example of a micro-level scorecard is one that can be built for the implementation of a customer relationship management (CRM) system. Brewton (2003) provides an illustration of a balanced CRM scorecard in Table 4.9.

TABLE 4.4 Corporate Contribution Scorecard Evaluates IT from the Perspective of Senior Management

Objective	*Measures*	*Benchmarks*
Business/ IT alignment	1. Operational plan/budget approval	1. Not applicable
Value delivery	2. Measured in business unit performance	2. Not applicable
Cost management	3. Attainment of expense and recovery targets	3. Industry expenditure comparisons
	4. Attainment of unit cost targets	4. Compass operational "top performance" levels
Risk management	5. Results of internal audits	5. Defined sound business practices
	6. Execution of security initiative	6. Not applicable
	7. Delivery of disaster recovery assessment	7. Not applicable
Inter-company synergy achievement	8. Single system solutions	8. Merger and acquisition guidelines
	9. Target state architecture approval	9. Not applicable
	10. Attainment of targeted integrated cost reductions	10. Not applicable
	11. IT organization integration	11. Not applicable

Like Brewton (2003), Rosemann and Wiese (1999) demonstrate that the balanced scorecard can be used at the system level. Enterprise resource planning (ERP) is one of the most sophisticated and complex of all software systems. It is a customizable software package that includes integrated business solutions for core business processes such as production planning and control and warehouse management. The major ERP vendors (SAP, Baan, Oracle, and PeopleSoft) have seen their profitability soar in recent years.

Rosemann and Wiese (1999) use a modified balanced scorecard approach to:

- Evaluate the implementation of ERP software
- Evaluate the continuous operation of the ERP installation

Along with the four balanced scorecard perspectives of financial, customer, internal processes, and innovation and learning, they have

TABLE 4.5 Customer Orientation Scorecard Evaluated the Performance of IT from the Perspective of Internal Business Users

Objective	*Measures*	*Benchmarks*
Customer satisfaction	1. Business unit survey ratings a. Cost transparency and levels b. Service quality and responsiveness c. Value of IT advice and support d. Contribution to business objectives	1. Not applicable
Competitive costs	2. Attainment of unit cost targets	2. Compass operational "Top-Level" performing levels
	3. Blended labor rates	3. Market comparisons
Development services performance	4. Major project success scores a. Recorded goal attainment b. Sponsor satisfaction ratings c. Project governance rating	4. Not applicable
Operational services performance	5. Attainment of targeted service levels	5. Competitor comparisons

added a fifth for the purposes of ERP installation — the project perspective. The individual project requirements, such as identification of critical path, milestones, etc., are covered by this fifth perspective, which represents all the project management tasks. Figure 4.2 represents the Rosemann-Wiese approach.

Rosemann and Wiese contend that most ERP implementers concentrate on the financial and business processes aspects of ERP implementation. Using the ERP balanced scorecard would enable them to also focus on customer and innovation and learning perspectives. The latter is particularly important because it enables the development of alternative values for the many conceivable development paths that support a flexible system implementation.

Implementation measures might include:

- *Financial:* total cost of ownership, which would enable identification of modules where over-customization took place
- *Project:* processing time along the critical path, remaining time to the next milestone, time delays that would affect financial perspective

TABLE 4.6 Operational Excellence Scorecard Views IT from the Perspective of IT Managers and Audit and Regulatory Bodies

Objective	*Measures*	*Benchmarks*
Development process performance	1. Function point measures of: a. Productivity b. Quality c. Delivery rate	1. To be determined
Operational process performance	2. Benchmark based measures of: a. Productivity b. Responsiveness c. Change management effectiveness d. Incident occurrence levels	2. Selected compass benchmark studies
Process maturity	3. Assessed level of maturity and compliance in priority processes within: a. Planning and organization b. Acquisition and implementation c. Delivery and support d. Monitoring	3. To be defined
Enterprise architecture management	4. Major project architecture approval	4. OSFI sound business practices
	5. Product acquisition compliance with technology standards	5. Not applicable
	6. "State of the infrastructure" assessment	6. Not applicable

- *Internal processes:* processing time before and after ERP implementation, coverage of individual requirements for a process
- *Customer:* linkage of customers to particular business processes automated, resource allocation per customer
- *Innovation and learning:* number of alternative process paths to support a flexible system implementation, number of parameters representing unused customizing potential, number of documents describing customizing decisions

As in all well-designed balanced scorecards, this one demonstrates a very high degree of linkage in terms of cause-and-effect relationships. For example, "customer satisfaction" within the Customer perspective might affect "total cost of ownership" in the Financial perspective, "total project time" in the Project perspective, "Fit with ERP solution" in the Internal

TABLE 4.7 Future Orientation Perspective Shows IT Performance from the Perspective of the IT Department Itself: Process Owners, Practitioners, and Support Professionals

Objective	*Measures*	*Benchmarks*
Human resource management	1. Results against targets: a. Staff complement by skill type b. Staff turnover c. Staff "billable" ratio d. Professional development days per staff member	 a. Not applicable b. Market comparison c. Industry standard d. Industry standard
Employee satisfaction	2. Employee satisfaction survey scores in: a. Compensation b. Work climate c. Feedback d. Personal growth e. Vision and purpose	2. North American technology dependent companies
Knowledge management	3. Delivery of internal process improvements to library	3. Not applicable
	4. Implementation of "lessons learned" sharing process	4. Not applicable

Process perspective, and "User suggestions" in the Innovation and Learning perspective.

Rosemann and Wiese do not require the Project perspective in the balanced scorecard for evaluating the continuous operation of the ERP installation. Here, the implementation follows a straightforward balanced scorecard approach. Measures include:

- Financial:
  - Compliance with budget for hardware, software, consulting
- Customer:
  - Coverage of business processes: percent of covered process types, percent of covered business transactions, percent of covered transactions valued good or fair
  - Reduction of bottlenecks: percent of transactions not finished on schedule, percent of cancelled telephone order processes due to noncompetitive system response time
- Internal process:
  - Reduction of operational problems: number of problems with customer order processing system, percent of problems with

TABLE 4.8 Recommended Metrics

System/Service/Function	*Possible Metric(s)*
R&D	Innovation capture Number of quality improvements Customer satisfaction
Process improvement	Cycle time, activity costs Number of supplier relationships Total cost of ownership
Resource planning, account management	Decision speed Lowering level of decision authority
Groupware	Cycle time reduction Paperwork reduction
Decision support	Decision reliability Timeliness Strategic awareness Lowering level of decision authority
Management information systems	Accuracy of data Timeliness
E-commerce	Market share Price premium for products or services
Information-based products and services	Operating margins New business revenues Cash flow Knowledge retention

customer order processing system, number of problems with warehouse processes, number of problems with standard reports, number of problems with reports on demand

- Availability of the ERP system: average system availability, average downtime, maximum downtime
- Avoidance of operational bottlenecks: average response time in order processing, average response time in order processing at peak time, average number of OLTP transactions, maximum number of OLTP transactions
- Actuality of the system: average time to upgrade the system, release levels behind the actual level
- Improvement in system development: punctuality index of system delivery, quality index
- Avoidance of developer bottlenecks: average workload per developer, rate of sick leave per developer, percent of modules covered by more than two developers

TABLE 4.9 CRM Scorecard

Perspective	*Success Factor*	*Metric*
Financial	Maximize customer lifetime value	Customer lifetime value ($)
	Maximize share of wallet	Share of wallet (%)
Customer	Increase retention	Retention percent (%)
	Increase penetration	Penetration ratio (number)
	Increase win-backs	Win-back percent (%)
	Increase new business	Customer acquisitions (number)
	Increase satisfaction	Customers highly satisfied (%)
Process	Maximize sales productivity	Conversion rate per sales channel (%)
	Maximize marketing effectiveness	Revenue per conversion rate per sales channel ($)
	Maximize service quality	Cost of sales per sales channel ($)
		Number of leads per marketing channel (number)
		Service level per channel (%)
		Cost per service encounter ($)
Staff	Increase employee satisfaction	CRM employees highly satisfied, by CRM function (%)
	Maintain high employee retention	CRM employee retention (%)
	Increase core CRM competencies	Strategic CRM core competency coverage, by CRM function (%)

- Innovation and learning:
  - Qualification: number of training hours per user, number of training hours per developer, qualification index of developer (i.e., how qualified is this developer to do what he or she is doing)
  - Independence of consultants: number of consultant days per module in use for more than two years, number of consultant days per module in use for less than two years
  - Reliability of software vendor: number of releases per year, number of functional additions, number of new customers

Keeping Track of What Is Going On

Operational awareness is the continuous attention to those activities that enable an organization to determine how well it is meeting predetermined

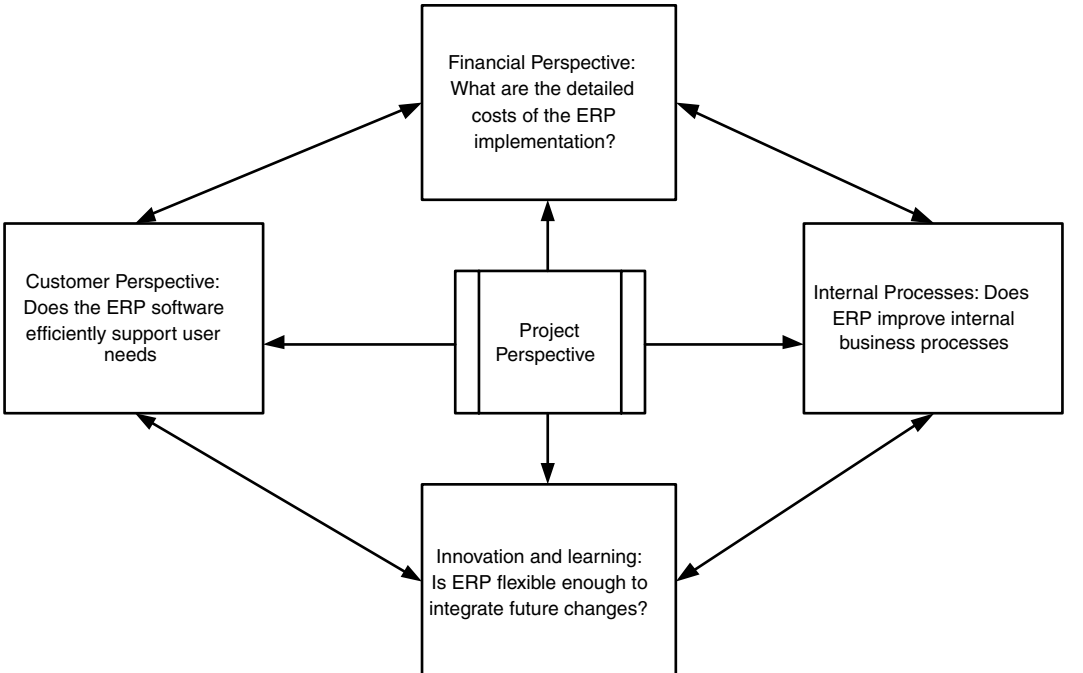

FIGURE 4.2 The ERP balanced scorecard.

performance objectives. It is a necessary component of scorecard-type endeavors.

Factors influencing the level of operational awareness include the nature of the work, the type of organization, and past performance. Accordingly, oversight organizations should maintain a relationship with the overseen organization and its management staff that affords ongoing awareness of that organization's strengths and weaknesses, if any. This monitoring or surveillance is a fundamental part of operational awareness.

Surveillance

Surveillance includes both formal and informal activities. Formal surveillance activities, based on specific criteria, are typically established in writing and provided to the organization. Surveillance, general in nature and usually conducted and reported orally, is an effective approach when circumstances require flexibility to accommodate changing emphasis, shifting priorities, or establishing rapport. There should be scheduled activities that provide for sufficient levels of operational awareness, a sampling of which follows:

1. Hold periodic meetings between management staff with agenda items designed to fully communicate subjects such as current initiatives, status of problem areas and actions taken to date, scheduled and planned training, and policy and procedure revision status of organizational or contract change implementation, as appropriate.
2. Review status reports and trend analyses of performance measures. Perform limited on-site review (if applicable) of selected areas of significant risk as appropriate.
3. Maintain awareness and involvement at a level such that a "for cause" issue is not a surprise.

When a "for cause" condition exists, certain surveillance activities may be assigned to other disciplines or functional areas. In these instances, supporting documentation resulting from the findings should be provided to the organization. Reports generated as a result of internal audits should be considered valuable diagnostic tools.

Selected significant risk areas typically refer to those actions or activities that require compliance with laws, regulations, and contract terms and conditions. There should be various control systems employed as necessary to ensure compliance and to test the currency and adequacy of the business system.

Validation and Verification

Validation is the process of determining the degree of accuracy and completeness of the measurement techniques and the resulting data. Assessment practices and results should be periodically validated. The success of the self-assessment will depend largely on the mutually agreed-upon and understood performance objectives, measures, and expectations; the scope, depth, and effectiveness of the self-assessment; and the integrity of the self-assessment.

Verification is the process of substantiating a set of data results by means such as checking stated facts, citations, measurements, or attendant circumstances.

Verification of data resulting, for example, from the self-assessment and other operational awareness activities will, in part, formulate the basis of the approval of the business system. The data should be analyzed to determine its accuracy and that comparisons or benchmarks are valid.

Verification of narrative or statistical data should be tailored by data type. For example, reports and documentation could substantiate the self-assessment results of measures designed to demonstrate efficiency. Likewise, interviews with selected internal and external customers and the organization's employees may also verify reported survey results. Trend analysis of the self-assessment results should reflect the factual information provided by the interviews with staff.

The following suggestions can assist in the validation and verification of the self-assessment process and results:

- Mutually understand what and how the organization will measure performance.
- Become familiar with the data sources and methods that will be used in the calculations.
- Confirm that the collection methodology is accurate, complete, and timely.
- Confirm that the data is properly controlled.
- Become familiar with the trend analysis techniques to be used and gain assurances that the organization's personnel are qualified in this area.

On to Chapter 5

This chapter discussed the unique concept of the IT scorecard and discovered that some researchers and many organizations have *fine-tuned* the idea of the balanced scorecard to suit their own particular purposes. This chapter also discussed a variety of IT-specific scorecard examples,

along with their associated metrics. Hopefully, one is now becoming a lot more comfortable with the topic — as well as the process — and is getting ready to embark on a balanced scorecard project of one's own.

Chapters 5 through 8 embark on very specific discussions of each scorecard perspective. Chapter 5 specifically delves into the financial perspective of the balanced scorecard.

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