Module 6: Improving Organizational Performance (Performance Measures)

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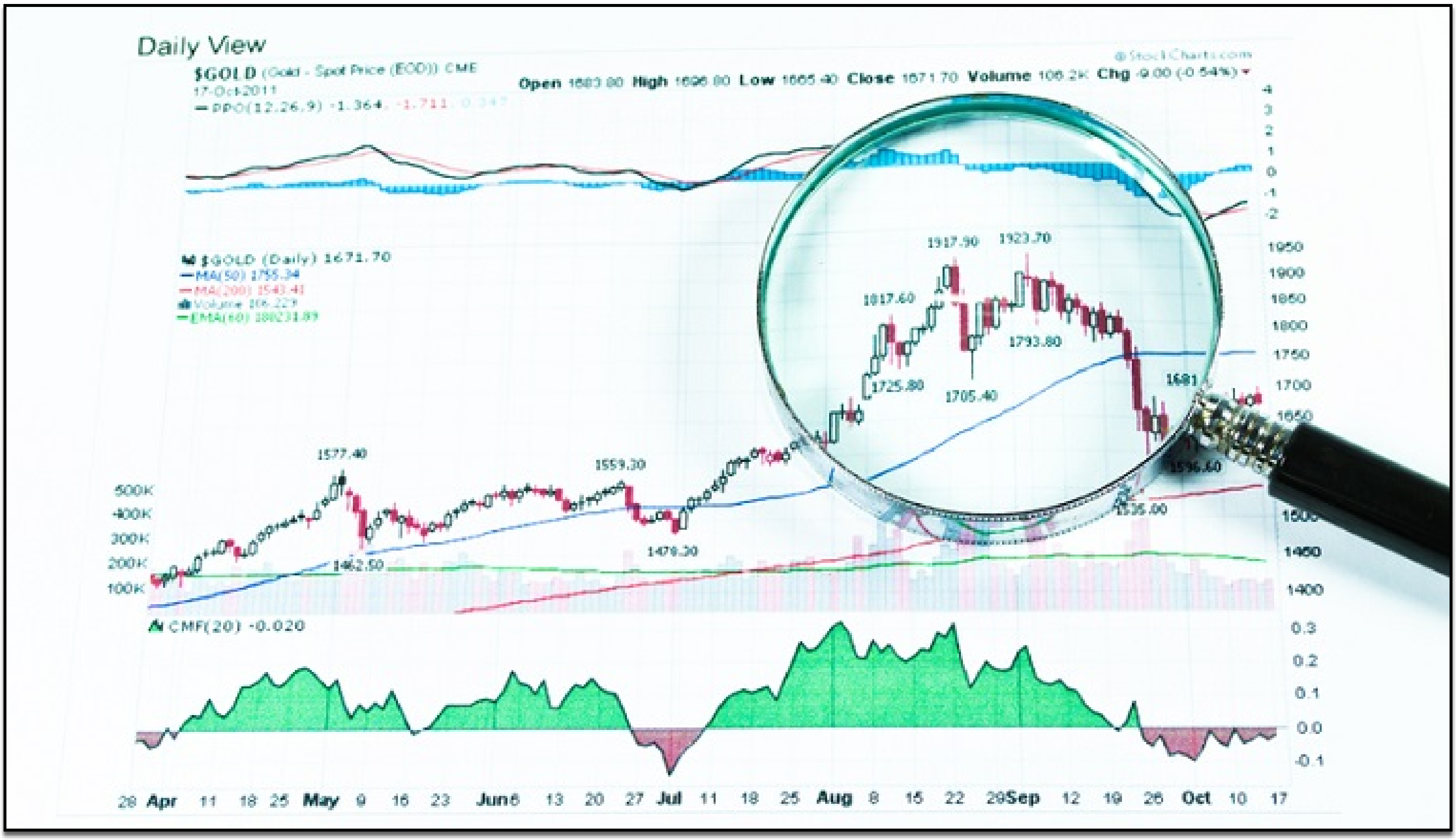

6.01 Learning Objectives

Learning Objectives

After completing this module, you should be able to:

1. Explain how performance measures are used in different settings
2. Differentiate among various organizational performance measurements
3. Describe the advantages and disadvantages of KPIs
4. Describe the advantages and disadvantages of the Balanced Scorecard
5. Describe the advantages and disadvantages of a Net Promoter Score
6. Explain the relationship between performance assessment and organizational tactics and strategy
7. Assess the validity of performance measures for an organization based on a brief case study

6.03 Video: Improving Organizational Performance

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6.04 Performance Measures

Performance Measures

Performance measurement helps to evaluate the efficiency of an individual, a group, or even an entire organization using data collection and analytics. Performance measures are applied in a variety of settings, as indicated below:

Business

> In business, organizations use performance measures to determine how well the business, or any part of the business, is performing. An organization must decide on appropriate measures to use for evaluation. The use of inappropriate measures

can result in setting goals for the organization that may not be beneficial. While there is no set of performance measures that can apply to all businesses, there are common measures that businesses often use. These quantities can show how well a company or subset of a company performs in a variety of areas, including financial, societal influence, and consumer satisfaction. Some business performance measures include return on sales, referrals, the average tenure of employees, and the number of months of continuous operation compared to competitors. As we see, these measures are varied in nature.

Examples: The following list contains several business performance measures:

- return on sales
- customer turnover rates
- average employee tenure
- number of months of continuous operation
- sales-per-square-foot

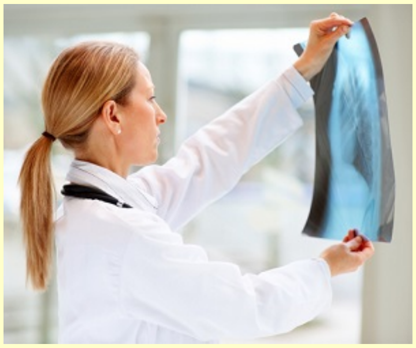
Education

A variety of unique, sometimes controversial, performance measures has been used in the education field. Schools often receive funding based on meeting predetermined goals. To quantify these goals, agencies and governing bodies have developed acts and standardized tests. These rankings use performance measures to quantify the quality of education.

Example: A low-performing high school may focus on leading drop-out indicators—such as attendance, behavior, and course performance—to improve graduation rates.

Healthcare

According to the American College of Physicians (ACP), performance measures are developed, tested, and endorsed by medical specialty societies, healthcare quality organizations, health systems, private and public health payers, and the federal government, among others. These groups use performance measures to improve the overall performance of the provider.



Examples: The following list contains several healthcare performance measures:

- 30-day survival rates
- healthcare service costs
- doctor-specific mortality rates
- healthcare-associated infections

Military

As goals change in any industry, the performance measurements must change as well. Recently, in military spending, the focus has shifted to fiscal accountability, which requires military groups to demonstrate the maximized use of resources. The military uses performance measurements in determining spending habits.

Examples: The following list contains several military performance measures:

- veteran medical costs
- construction costs
- humanitarian values
- mission efficiency

Nonprofits

Not only are performance measurements important for nonprofits to determine the best strategic direction, but they are also important in showing investors that the nonprofit is effective at achieving its goals.

According to McKinsey & Company, an American global management consulting firm, nonprofits must focus on three areas of performance measurements: the success of mobilizing its resources, employee effectiveness, and progress on its goals.

Examples: The following list contains several nonprofit performance measures:

- resource allocation
- internal processes

- the cost-effectiveness of initiatives
- the effectiveness of other organization initiatives

Critical success factors are those factors (quality, customer service, efficiency, etc.) critical to an organization achieving its goals.

To be successful, a company must meet profitability and other financial goals. It must increase its customer base and make sure the customers are satisfied. It must conduct its internal business processes successfully, including innovation in creating products and services and in manufacturing techniques; producing products and services efficiently, on time, and with few defects; and providing satisfactory post-sales service. It must foster learning and growth by developing employee skills, heeding feedback from customers and employees, and motivating employees.

6.05 Video: Performance Measures

This assignment does not contain any printable content.

6.06 Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs)

A key performance indicator, or KPI, is a performance measurement that organizations use to quantify their level of success. Choosing the appropriate performance indicator is very important, as it needs to align with the organization's definition of success.

For example, one hospital might make patient satisfaction their goal, while another might determine that the average length of stay is the best measure of success.

Depending on the goal of the organization, each of the following could be appropriate KPIs:

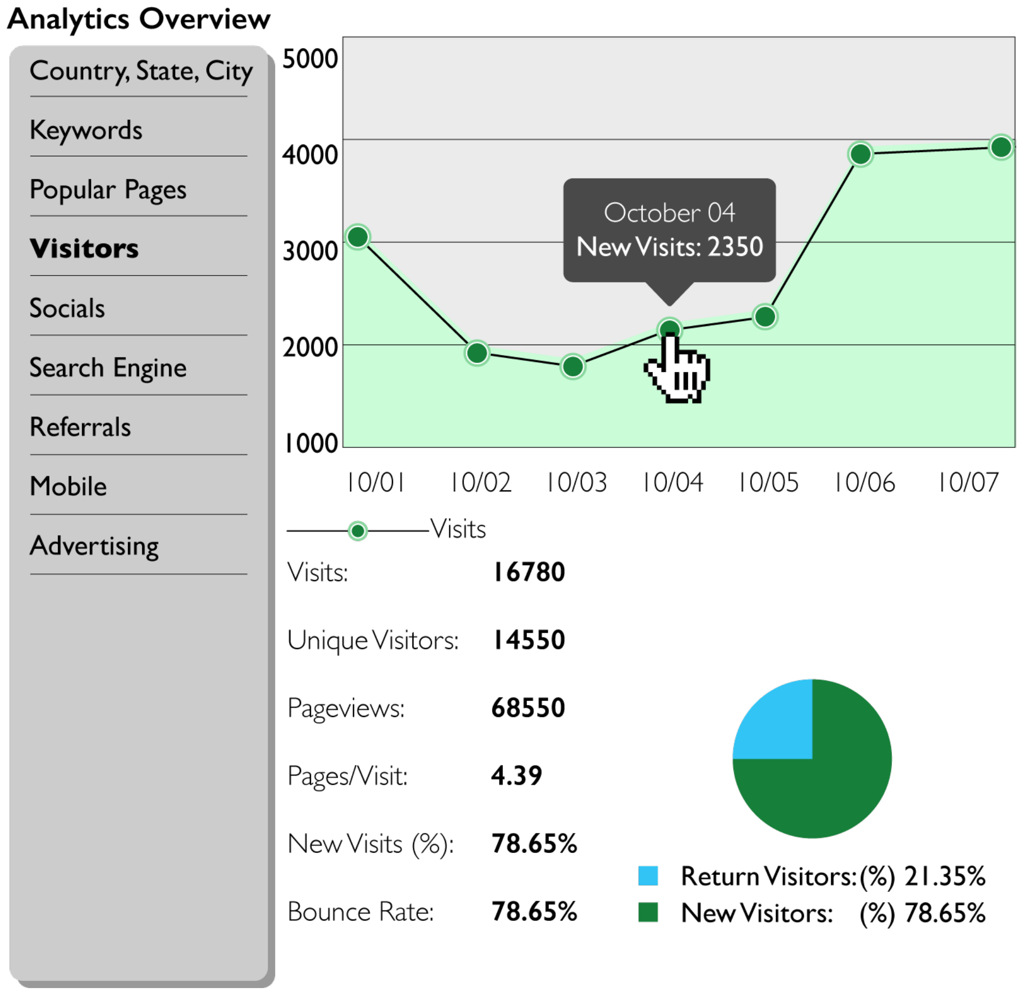
- sales increase
- average order size
- employee turnover
- return customer rate

These KPIs quantify different goals, but each can be very indicative of a company's success. KPIs often follow "SMART" criteria, which is an acronym for specific, measurable, attainable, relevant, and time-bound. Ideally, according to this acronym, a key performance indicator should select a specific area, quantify a measurable indicator, set a goal that is attainable and relevant, and state the period of time over which the measurement is occurring.

Organizations will spend considerable management time and attention on monitoring KPIs. Management compensation or bonuses are often tied to improvement in these measures. A common technique is to compare KPIs over time (for example, this period's KPI versus the same period a year ago).

The KPI Performance Dashboard

A performance dashboard displays key performance indicators using visual representations such as charts and graphs. If there are a number of variables that are related, a dashboard is able to bring together different graphs that represent aspects of those variables. They are used when only one chart, graph, or piece of data does not represent the complete picture. A performance dashboard can show trends between KPIs that represent how an organization has performed historically. They also allow managers and decision makers to see easily whether the organization is meeting goals or improving in many different areas. Performance dashboards are especially useful when it is necessary to display the specific charts, graphs, and data that are integral to making a certain decision.



Advantages and Disadvantages of KPIs

KPIs can help an organization quantify its goals. However, using KPIs may come at a price. The following table lists the advantages and disadvantages of using KPIs.

Advantages and Disadvantages of KPIs

Advantages	Disadvantages
• Educate management on company performance • Can be used as a tool across an entire organization • Data-driven results make it easier to quantify performance • If used over time, can create an internal benchmarking system	• Can be expensive and time-consuming to set up and use • Requires frequent, even on-going, maintenance and monitoring • Small changes in KPIs may be viewed as meaningful, but may not be statistically significant • Results are often only a rough guide rather than a concrete measurement • Once designed and set up, difficult to change

Example of Key Performance Indicators Usage

KPIs can be used in private and public sector applications. Western Governors University has been a leader in higher education in employing KPIs. From Educause's "Game Changers" report: "WGU's Office of Institutional Research tracks and evaluates student metrics throughout a student's degree program. These institutional measures of student success are used to help students graduate, as well as to get their degree in a timely manner. Key performance indicators include whether or not students are on track for on-time graduation (completing at least twelve competency units per term for undergraduates and eight competency units for graduates), student satisfaction, student retention, and graduation. These key performance indicators help the university's leadership and faculty determine what program areas need improvement, which students need more support, and where its services can be improved to better serve student needs."

6.07 Video: Key Performance Indicators

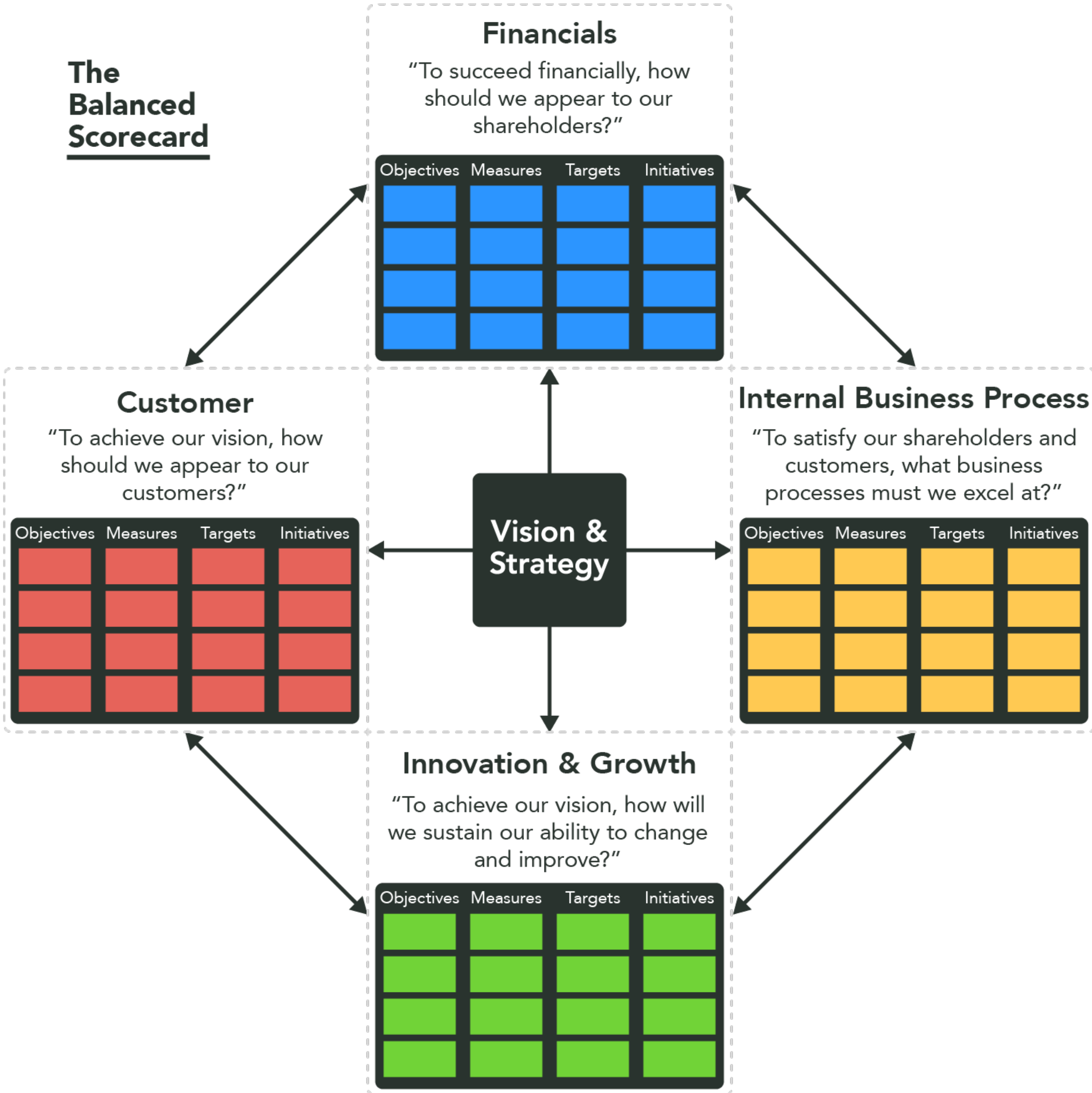
This assignment does not contain any printable content.

6.08 Balanced Scorecard

Balanced Scorecard

A balanced scorecard (BSC) measures an organization's performance on a balanced mix of both financial and non-financial measures. The purpose of the balanced scorecard is to include in a company's goals some objectives that may not affect the company's current financial performance, but do affect the company's long-term performance.

The balanced scorecard, as developed and defined by Robert S. Kaplan and David P. Norton, examines an organization's performance through four perspectives.



Financial

The financial measures on a balanced scorecard might include such items as operating income, revenue growth, revenue from new products, gross margin percentage, cost reductions, cash, economic value added (EVA), and return on investment (ROI).

Customer

The customer measures on a balanced scorecard might include such items as market share, customer retention percentage, response time, delivery performance, defects, lead time, customer satisfaction, and the number of customer complaints.

Internal business processes

The business process measures on a balanced scorecard might include such items as manufacturing or technological capability, new products or services, new product development times, number of new patents, defect rate, yield, average time to manufacture orders, setup time, manufacturing downtime, time taken to repair defective products, and cycle time, which is the amount of time between the receipt of a customer order and the shipment of that order.

Learning and growth

The learning and growth measures on a balanced scorecard might include such items as employee skills, organizational learning, industry leadership, employee satisfaction scores, employee turnover rates, percentage of processes with advanced controls, percentage of employee suggestions implemented, and percentage of employee compensation based on individual and team incentives.

The balanced scorecard does not rigidly define what performance indicators are used. Rather, organizations choose KPIs to measure the four perspectives. A balanced scorecard is useful for organizations to determine how successful they are in various categories, but as a performance dashboard, is effective only if the KPIs being studied are good measures that align with an organization's goals.

Kaplan and Norton have provided this metaphor for the BSC: "Think of the balanced scorecard as the dials and indicators in an airplane cockpit. For the complex task of navigating and flying a plane, pilots need detailed information about many aspects of the flight. They need information on fuel, airspeed, altitude, bearing, destination, and other indicators that summarize the current and predicted environment. Reliance on one instrument can be fatal. Similarly, the complexity of managing an organization today requires that managers be able to view performance in several areas at once."

A balanced scorecard typically consists of a list of objectives, and for each objective is shown a performance measure, an initiative being undertaken to improve the performance on that measure, the target performance, the actual performance, and the variance. The variance is the difference between the target performance and the actual performance.

Video: The Balanced Scorecard

Advantages and Disadvantages of Balanced Scorecards

The balanced scorecard provides some structure to organizations that want to assess performance. However, the balanced scorecard is not without its faults. The following table lists the advantages and disadvantages of using balanced scorecards.

Advantages and Disadvantages of the BSC

Advantages	Disadvantages
• Improves organization alignment • Improves internal and external communication • Links company operations with its strategy • Emphasizes strategy and organizational results	• Requires time and effort to establish a meaningful scorecard • Does not illustrate a full picture of the company performance, particularly financial data • Sometimes difficult to maintain momentum • Requires a wide cross-section of the organization departments in developing the system • May not encourage desired behavior changes

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6.09 Examples of BSC Use

This assignment does not contain any printable content.

6.10 Effective Use of a Balanced Scorecard

Effective Use of a Balanced Scorecard

A successful, balanced scorecard should reflect the company's strategy as outlined by top management. While a successful, balanced scorecard should place a strong emphasis on financial goals, it also should consider important non-financial measures.

The number of performance measures should be limited, focusing on the most crucial objectives. For example, If a company uses too many measures, it may distract attention from the most important company objectives.

To analyze a balanced scorecard, the actual performance of each measure must be compared to the target performance. The target performance is the predicted/forecasted value before the actual value occurs and is measured. The difference between the predicted results and the actual results is known as the variance.

Knowing how to calculate this variance is important when determining if your forecasting techniques are accurate. Also, it can be important when determining if you should continue to spend money or time in a certain area. A calculated variance will explain if you have failed to meet expectations or if you have exceeded expectations.

$$\text{variance} = \text{actual performance} - \text{target performance}$$

A positive variance indicates that the actual behavior was higher than the company's expectations, and a negative variance indicates that the actual behavior was lower than the company's expectations. We often label variances as favorable and unfavorable. It would be easy to assume that a positive variance is favorable and a negative variance is unfavorable, but that is not always the case.

A favorable variance occurs in two types of situations:

- the variance is positive and a higher value is better for the company
- the variance is negative and a lower value is better for the company

Similarly, an unfavorable variance occurs in two types of situations:

- the variance is positive and a lower value is better for the company
- the variance is negative and a higher value is better for the company

Example

A company has a target of 95% of customers being satisfied, and the actual figure turns out to be 97%. The variance is $97\% - 95\% = 2\%$. In this case, the company wants more satisfied customers. If the actual value exceeds the goal, the company is happy. So, this variance is favorable because it is positive. The positive variance indicates that the company had more satisfied customers than they expected.

On the other hand, suppose a company has a target of 5 customer complaints during the month, and the actual figure turns out to be 9. The variance is $9 - 5 = 4$. In this case, the company wants fewer customer complaints. If the actual value is less than the target, the company is happy. So, this variance is unfavorable because it is positive. The positive variance indicates that the company had more customer complaints than they expected.

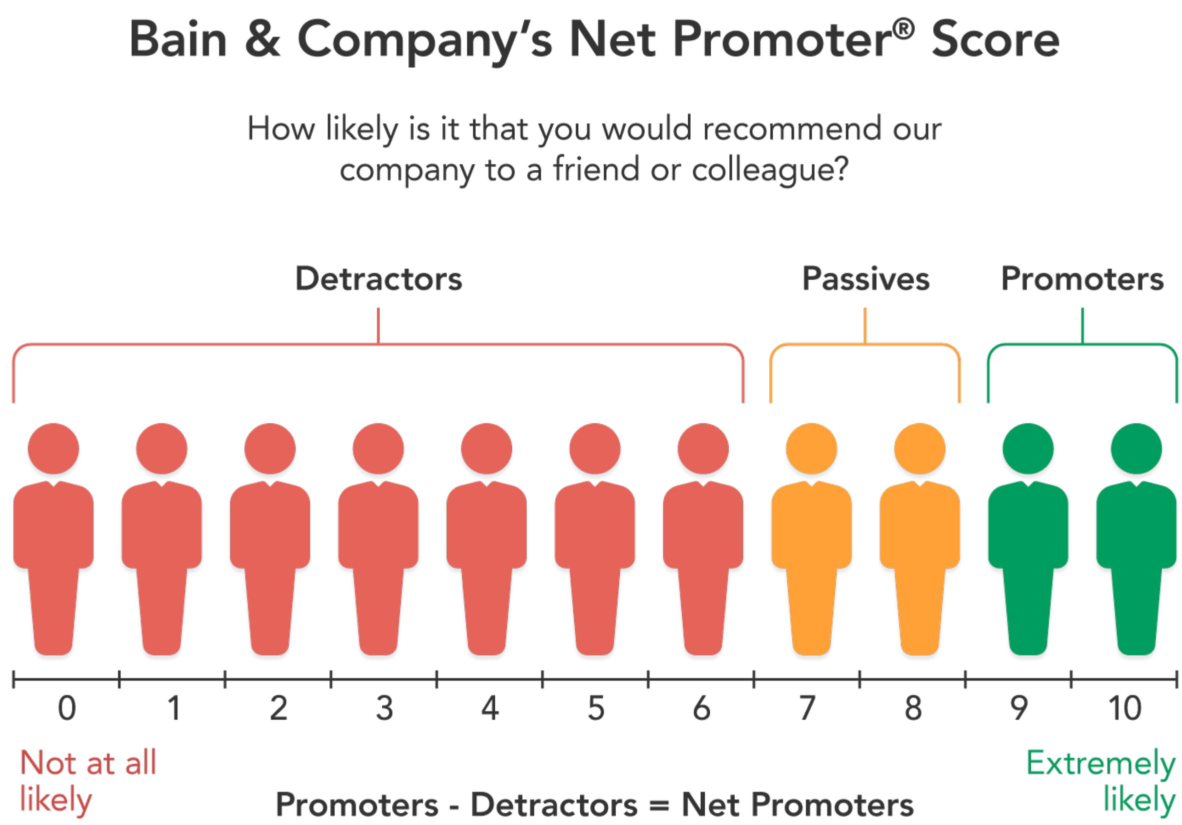
6.11 Net Promoter Score

Net Promoter Score

A Net Promoter Score, or NPS®, is a specific performance measure used in management. Developed by Fred Reichheld, Bain & Company, and Satmetrix, a Net Promoter® Score quantifies how strong an organization's customer relations are. According to Bain & Company, companies that achieve long-term profitability and growth have customers that promote their products and services.

The NPS premise categorizes a company's customers into three groups: promoters, passives, and detractors

Companies solicit feedback from customers and store that data for analysis, which requires customers to be available for a survey and also willing to answer the question: "How likely is it that you will recommend this product or service to a friend?"



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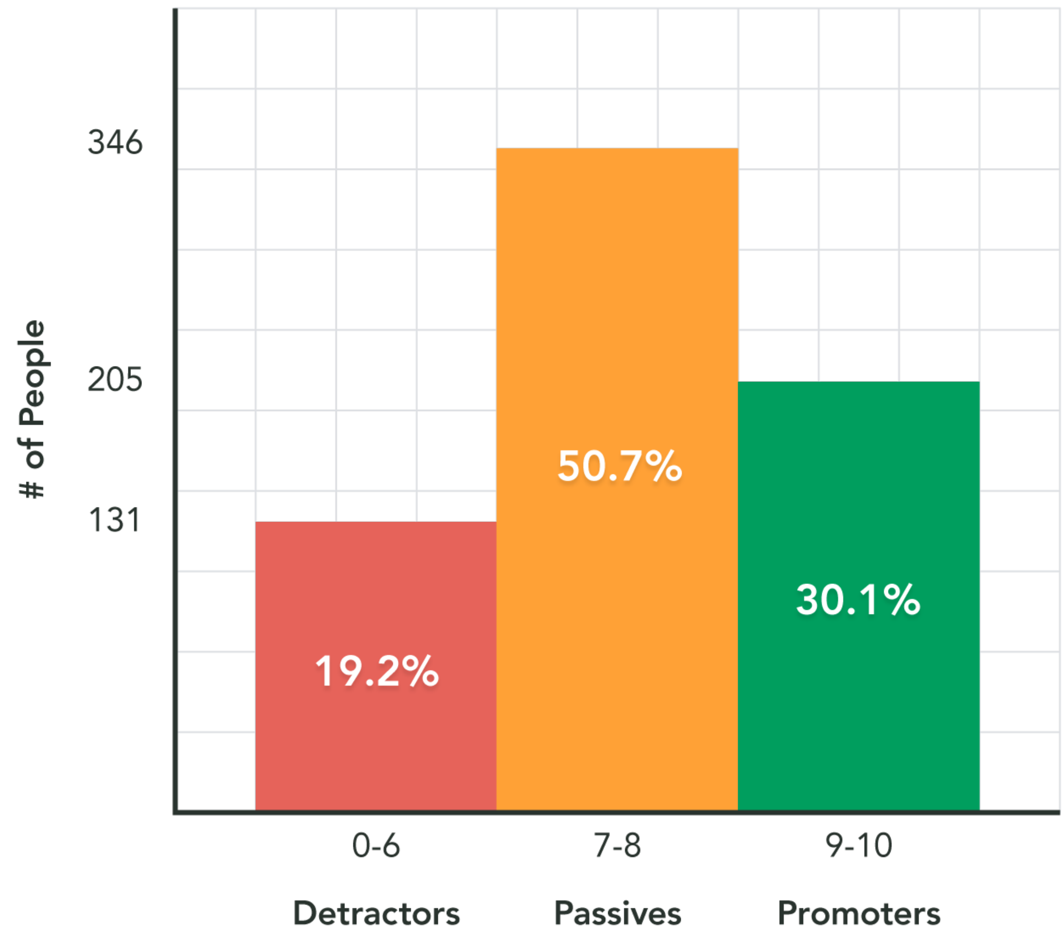
Several major companies employ the NPS to gauge customer loyalty. Most companies average an NPS of around 20 to 30, while other high performing businesses can achieve levels of 50 to 80.

Example: Calculating the Net Promoter Score

A company wants to know whether it should invest in current customer loyalty (with promotions and customer service improvement) or whether it should invest in marketing (advertisements). The company asks the following question of its customers: "How likely is it that you would recommend this company to a friend or family member?"

The company looks at its competitors and learns that the NPS in the industry is 15 percent. The company decides that it will launch the marketing campaign if its NPS is greater than 15 percent, but it will focus on improving the experience for current customers otherwise.



There are 682 respondents to the customer survey, each answering on a scale from 0 to 10. 131 people (19.2 percent) gave an answer between 0 and 6, 346 people (51 percent) gave an answer of 7 or 8, and 205 people (30.1 percent) gave an answer of 9 or 10. The company determines that its Net Promoter Score is 10.9 percent ($\text{promoters} - \text{detractors} = 30.1\% - 19.2\%$).

The company decides to invest in customer service and improving the customer experience because its Net Promoter Score is less than the industry standard of 15%.

Many companies and even some industries as a whole have negative Net Promoter Scores. Although knowing your company's NPS can be helpful in understanding the perceived value of products and services among customers, the score alone does not illuminate the reasons a customer answers the way he or she does.

Advantages and Disadvantages of NPS

An organization can use the net promoter score to better understand the likelihood of customer referrals. However, there are disadvantages to using this metric. The following table lists the advantages and disadvantages of using the Net Promoter Score.

Advantages and Disadvantages of the NPS

Advantages	Disadvantages
• Creates an easily understood metric for customer perceptions • Holds employees accountable for their treatment of individual customers • Allows companies to benchmark against industry leaders • Relatively low maintenance if deployed electronically	• Does not provide in-depth customer perception data • Requires customers who are willing to respond to the question • Some argue the 11-point scale is not as predictive as 7-point scale • Some argue it fails to predict loyalty behaviors • Can be difficult to capture the precise area of dissatisfaction

While the Net Promoter Score continues to be a widely embraced measure, there are ample critics. One of the challenges to NPS was undertaken by C Space, a customer research agency. Christina Stahlkopf wrote *Where Net Promoter Score Goes Wrong*, published by the Harvard Business Review, outlining the study in which C Space surveyed 2,000 customers in the U.S. and the U.K. In addition to asking them the NPS hallmark question of "would you recommend this brand," the company asked two other questions:

1. Have you recommended this brand?
2. Have you discouraged anyone from using or purchasing this brand?

What the C Space research confirmed is the long-standing assertion that human intention regarding promoting a brand is much different from actual action. The Net Promoter Score indicates human intention for promoting a brand, but does not indicate how many customers *actually* promote the brand.

Review Checkpoint

To test your understanding of the content presented in this assignment, please click on the Question icon below. Click your selected response to see feedback displayed below it. If you have trouble answering, you are always free to return to this or any assignment to re-read the material.

1. True or False?

A Net Promoter Score is important when looking at customer satisfaction and loyalty.

a. True

Correct. This statement is true. NPS is a specific performance measurement that categorizes a company's customers into three groups to determine if the customer is loyal and would recommend the product or service to a friend.

b. False

Incorrect. This statement is true. NPS is a specific performance measurement that categorizes a company's customers into three groups to determine if the customer is loyal and would recommend the product or service to a friend.

2. True or False?

A Net Promoter Score is able to capture the precise area of dissatisfaction.

a. True

Incorrect. This statement is false. The NPS does not necessarily explain "why" a customer is not satisfied.

b. False

Correct. This statement is false. The NPS does not necessarily explain "why" a customer is not satisfied. Gaining insight into the area of dissatisfaction requires more cooperation from dissatisfied customers.

3. A business collects customer surveys containing the question, "would you recommend this business to a friend?" The following table indicates the results:

Survey Results

0 to 6	126
7 to 8	572
9 to 10	391

What is the Net Promoter Score for the business?

a. 12%

Incorrect. This is approximately the percentage of detractors from the survey.

b. 24%

Correct. The Net Promoter Score is the percentage difference between promoters (rating 9 or 10) and detractors (rating between 0 and 6). A total of 1,089 customers responded to the survey ($126 + 572 + 391$). The difference between promoters and detractors is $391 - 126 = 265$. So, the Net Promoter Score is $\frac{265}{1{,}089} = 0.24 = 24\%$.

c. 36%

Incorrect. This is approximately the percentage of promoters from the survey.

d. 53%

Incorrect. This is approximately the percentage of passives from the survey.

6.12 Performance Assessment and Strategy

Performance Assessment and Strategy

Performance assessment can and should be linked to a company's strategy. A strategic plan gives a company a target of where it needs to be or hopes to be, at some point in the future. For example, a company might strategize to shift its target market, increase its innovative internal thinking, or up-sell current accounts into an upgraded product or service. The strategic plan is often adjusted each year in response to market changes and other factors and is often re-vamped more substantially every five years.

As illustrated in the image below, a company's goals flow downward into the strategic plan.

A company starts developing a strategic plan by considering its values, vision, and mission. The top section of the pyramid contains these items and represents the "why" section. Why does the company exist? The company's vision and mission help keep the plan grounded. The next section is the "how" section. How does the company move forward? Once the company understands its vision, it can begin setting achievable goals and developing clear objectives. The goals, strategy, and tactics defined during this phase begin to form the final plan. The final part of the pyramid is the action plan. What does the company need to do? This step includes specific tasks for the company to do to reach its goals.

Management should use the company's strategy to set relevant goals for staff, and staff performance should be assessed on reaching those goals. Therefore, the link between performance assessment and strategy is critical.

For example, a cable company whose strategy is to gain market share by improving its percentage of satisfied customers from 70% to

80% might set its performance assessment plan whereby phone customer service agents are assessed based on the survey responses of the customers they serve.

Setting the company's strategic direction is an exercise in data collection and analysis in the sense that a company must understand where it is today in order to set its sights on where it should be tomorrow. Further, setting and reaching goals is also an exercise in data collection and analysis. How many new customers did we acquire? What percentage of our customers are satisfied? How many innovative ideas were successfully implemented over a period of time? The company's ability to reach its strategic goals relies on the individual contributors setting and reaching goals that align with the bigger picture.

6.13 Video: Performance Assessment and Strategy

This assignment does not contain any printable content.

6.14 Vocabulary Game

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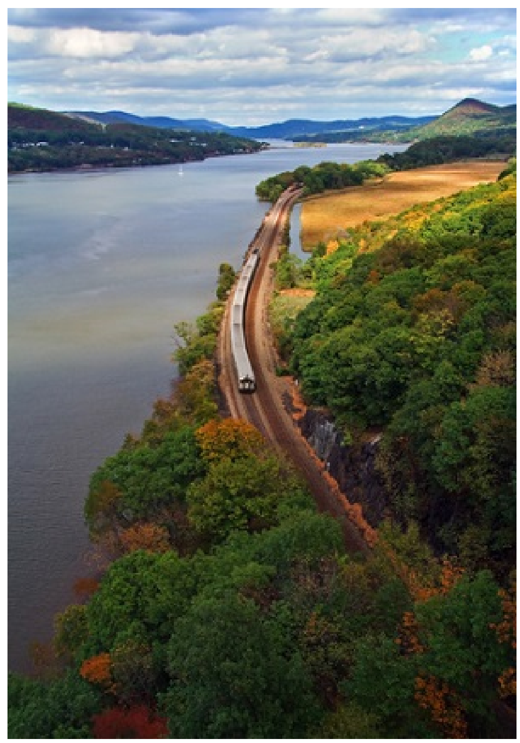
6.15 Flashcards

Flashcards

Term	Definition

6.16 Case Study: Visualizing Transportation Metrics and Performance Trends to Solve Problems

Visualizing Transportation Metrics and Performance Trends to Solve Problems



Ken Foster has recently been hired as the Operations Planning Manager for Northern Commuter Rail (NCR), a private transportation company that carries 280,000 train passengers daily on ten separate lines. NCR operates trains according to a contract with the State Department of Transportation (DOT) and adheres to public schedules established mutually by the two organizations.

As the Operations Planning Manager, Foster has been charged with analyzing operations data and looking for opportunities to improve performance and efficiency throughout the system. Large amounts of data are available from NCR's dispatch control center, as well as other departments, and include information such as train delay minutes and causes, vehicle inspection and maintenance data, and infrastructure repair projects (for track, signal, and bridges) causing track outages and speed restrictions.

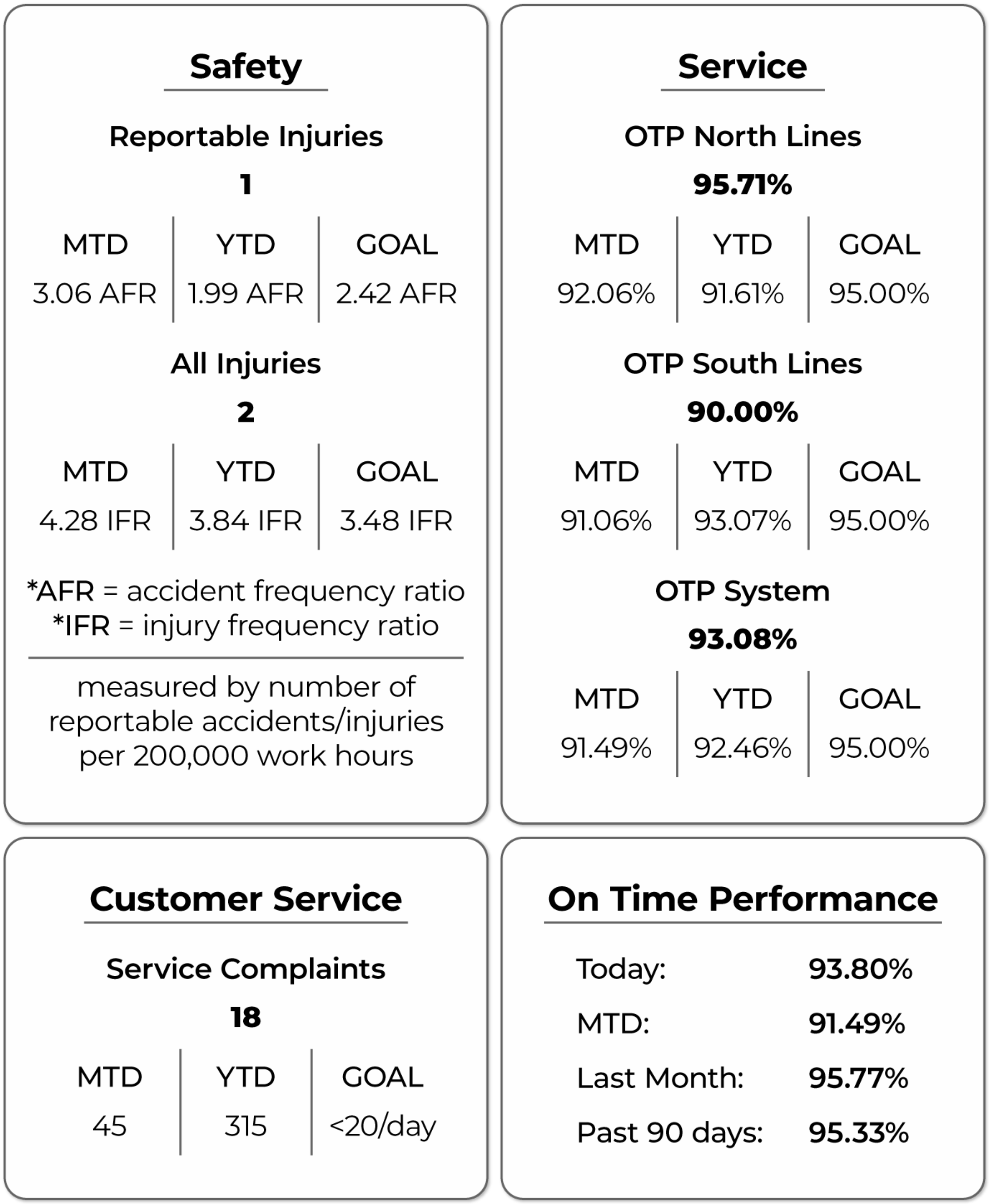
On-Time Performance (OTP)

In recent years, NCR has struggled to meet contractual on-time performance (OTP) of 95% of all trains arriving on-time (not "late" or cancelled). Under its current contract with the DOT, NCR is charged a penalty for each late train, which is defined as a train that arrives at its final destination more than 5 minutes later than its scheduled arrival time. Over the past year, NCR has had a system-wide on-time performance of 92.7%, compared to its contractual goal of 95%, resulting in close to $150,000 in late train penalties. Needless to say, this performance has hurt NCR's profitability and is a top improvement priority for the organization.

NCR's other top priorities include the safety of employees and passengers, customer satisfaction, environmental compliance, cost-effectiveness, and retention of a high performing, diverse workforce.

KPI Dashboard

When Foster first arrived in his new job, he proposed the establishment of a Key Performance Indicator (KPI) dashboard, an idea that had been successful in his previous organization. The idea behind the dashboard was to create a dynamic system to track and display real-time measurement on NCR's top priorities (Safety, OTP, Customer Satisfaction, etc.) in a simple dashboard, along with a "trending" indicator to show how each KPI is performing against established targets. Executive leadership and department managers would use the dashboard to track the performance of high-level objectives in real time and identify areas for concern and immediate attention. According to Foster, the dashboard would present information on NCR's performance in a clear, meaningful, and actionable way. Foster mocked up a simple dashboard to get managers' feedback:



With executive leadership approval, Foster worked with members of all departments to configure an actual KPI dashboard using real-time data from the Train Service Management System, the customer feedback system, and other reporting areas in the company. This populated the dashboard with data from every train trip, including delays by location, reason, and number of minutes, each line's OTP per trip, day, week or month, as well as safety department data and customer complaint information. Managers could drill down to obtain more detail on each of these KPIs in order to identify the causes of poor performance and target improvement initiatives.

Piloting NCR's KPI Dashboard

Several months later, when Foster and his team got the KPI dashboard configured and running, the management team was delighted. They found it easy and informative to get up-to-the-minute data on how well the company was performing in key areas. It proved useful in identifying when the system was experiencing difficulties, such as poor OTP or an uptick in employee injuries, and it gave managers a cue to call the appropriate area to investigate the problem and find out what was happening.

After using the KPI dashboard for several weeks, NCR's General Manager, Bob Sanders had some questions. Sanders had noticed that the dashboard often showed lagging on-time performance (OTP) during peak train service periods (morning and afternoon commute), while safety performance had shown significant improvement in recent months, with downward trends in passenger injuries and a 50% reduction in employee injuries.

This caused him to wonder whether "overkill" on the company's safety awareness programs and procedures were inadvertently causing train delays. He directed the Chief of Transportation to monitor conductors to see if they were overly vigilant at station stops, allowing passengers too much time to board and getting trains off schedule. Similarly, he hypothesized that locomotive engineers might be reducing speeds unnecessarily and causing late arrivals.

Drilling Down to Understand Root Causes

After the meeting, Ron O'Neill, NCR's Director of Safety, came to speak to Foster in his office. Clearly disturbed, he complained that the KPI Dashboard was misleading senior management, creating a false impression that safety improvements were linked to train delays and poor OTP. He was deeply concerned that Sanders wanted to deemphasize employee vigilance and safe practices, and that this would have disastrous consequences for the company.

Foster promised that he would conduct some analysis to see if there was any real evidence to back up Sanders' belief that safety improvements were linked to poor OTP.

Later that day, he began by drilling down into data from the Transportation, Engineering, and Mechanical departments, each of which tracked performance of specific things that impacted overall organization KPIs. While focusing closely on OTP-related measurements, the following are some of the details he noticed.

Transportation Department KPIs

Indicator	Measure (unit)	Year to Date	Annual Target	Accountability
OTP	Number of late trains due to short staff	179	156	Crew management
OTP	Number of late trains due to extra station "dwell time"	114	120	Transportation leadership

Engineering Department KPIs

Indicator	Measure (unit)	Year to Date	Annual Target	Accountability
OTP	Number of late trains due to signal or signal code problems	179	156	Chief Engineer and Signal Dept
OTP	Number of late trains due to drawbridge failures (drawbridges only present on Newburg and Rocky Point lines)	430	254	Chief Engineer and Structures Dept
OTP	Average number of of train delay minutes per drawbridge failure	45	20	Chief Engineer and Structures Dept
OTP	Number of late trains due to grade crossing malfunctions	221	235	Chief Engineer and Signal Dept
OTP	Number of late trains due to track related speed restrictions	348	460	Chief Engineer and Track Dept

Mechanical Department KPIs

Indicator	Measure (unit)	Year to Date	Annual Target	Accountability
OTP	Number of late trains due to locomotive engine malfunctions	460	542	Chief Mechanical Officer
OTP	Number of late trains due to traction motor problems	578	321	Chief Mechanical Officer
OTP	Number of late trains due to scheduled equipment unavailability	432	450	Chief Mechanical Officer

Foster also pulled the previous year's line-specific OTP data to show the on-time performance percentage breakdown by individual line:

Line-Specific On-Time Performance Data

Line	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Flatbush	97.3%	97.5%	96.6%	98.5%	96.1%	95.9%	94.2%	94.6%	98.5%	95.2%	96.1%	96.3%	96.1%
Ridgewood	92.7%	96.4%	95.5%	96.0%	92.6%	94.0%	92.4%	91.8%	93.7%	89.4%	89.0%	92.3%	93.0%

Greenville	98.6%	98.6%	97.5%	99.5%	97.2%	95.8%	94.8%	95.1%	97.4%	97.5%	92.5%	96.7%	96.8%
Kings Corner	99.1%	98.6%	98.8%	96.9%	96.6%	95.2%	93.1%	93.1%	97.1%	97.6%	93.3%	97.1%	96.4%
Springdale	98.8%	98.6%	97.0%	96.9%	92.5%	96.0%	94.9%	95.1%	96.5%	95.0%	93.8%	96.0%	95.9%
Lakeland	92.4%	96.6%	94.3%	95.8%	93.7%	93.4%	89.3%	92.7%	91.1%	87.0%	86.2%	92.7%	92.1%
Woodvale	93.0%	96.2%	93.9%	93.0%	90.3%	92.9%	88.4%	91.0%	93.3%	92.8%	88.8%	94.5%	92.3%
Crawford	95.7%	96.8%	95.9%	95.1%	97.1%	93.4%	94.7%	94.0%	95.3%	94.4%	93.1%	97.2%	95.2%
Newburg	86.8%	93.4%	91.0%	86.0%	76.0%	69.9%	73.4%	78.0%	75.6%	80.6%	86.5%	90.7%	82.3%
Rocky Point	82.7%	84.2%	83.8%	81.2%	74.2%	61.1%	65.1%	73.5%	72.3%	69.8%	79.8%	87.7%	76.3%
Actual Total OTP	93.7%	95.7%	94.4%	93.9%	90.6%	88.8%	88.0%	89.9%	91.1%	89.9%	89.9%	94.1%	91.7%

Foster found the department KPI data and line-specific OTP results to be quite informative. He realized that NCR would need to show the DOT that it was addressing the OTP performance issues with problem-solving tactics and initiatives that would improve results.

Foster didn't want NCR to relax safety protocols to improve OTP. After reviewing the data and other reports, Foster felt certain he could shed light on at least one of the biggest late train culprits—and it wasn't related to safety procedures!

Review Questions

For each of the following questions, please type your answer in the text box and click "Submit" to see a sample response.

Question 1. Based on the data presented in this case, what do you think Foster believes is the biggest problem hurting NCR's on-time performance? What do you think he is proposing as a solution?

Question 2. What other areas does the data suggest might be worth investigating as significant causes of train delays and poor on-time performance?

Question 3. What do you think about the General Manager's belief that an over-emphasis on safety and caution has been "slowing down" operations and leading to poor on-time performance? Do you think this is likely to be true? How could Foster analyze data to see if there is any real causation?

Question 4. How might Foster modify the KPI dashboard so that executive leadership will be less likely to draw misleading conclusions from the high level data?

Suggested/Sample Responses

Question 1:

Drawbridge failures are well in excess of target levels in both the number of incidents and the number of train delay minutes per incident. Clearly, drawbridge failures cause trains to be stuck for a long period of time, resulting in a large number of cascading delays (trains behind the one that is stuck) and poor OTP. It is also interesting that only lines with particularly poor OTP are those that have drawbridges (Newburg and Rocky Point). All other lines are close to or exceeding target OTP of 95%.

Foster is likely to propose a solution that involves capital investment in drawbridge repairs as well as better/increased staffing and maintenance to anticipate the likelihood of drawbridge failure and make all efforts to fix issues before they result in a failure (and a hit to OTP).

Question 2:

Traction motor performance (in the Mechanical department) — late trains due to traction motor failure are higher than expected, suggesting that this is another culprit that might be worth investigating. The Mechanical department could initiate a more rigorous analysis process to reduce repeat failures of traction motors — this could include the pursuit of ISO certification, better training for mechanics, or modifications to the traction motor inspection, maintenance, and repair program.

It also might be worth drilling further into the data for the Newburg and Rocky Point lines, which have very poor on-time performance, to see if there are specific causes (besides drawbridge failures) that impact those lines. For instance, aging infrastructure or weather might play more of a role here — in which case, remediation plans can be developed.

Question 3:

The appearance that improved safety practices and results are slowing down operations is not based on any deep analysis of data. In other words, it is hard to draw a conclusion of correlation from two KPIs on a high-level organization-wide KPI dashboard. To see if there is any better evidence to support the connection, Foster could collect all available safety reporting data by line to see if there is a correlation between low injuries/accidents and poor on-time performance for some or all of the individual lines. If there is correlation by line, then it would make sense to interview transportation employees (conductors, engineers, crew members, dispatchers, etc.) to see if they believe that their safety practices have likely caused difficulty meeting scheduled arrival times.

Question 4:

The General Manager's error here was a classic confusion between correlation and causation. Just because Safety KPIs were improving, and OTP KPIs were lagging during the same time frame, is insufficient data to conclude causation.

Although it might be complex, Foster could add a regression analysis function behind the dashboard that would enable managers to see the strength of the relationship between two KPIs, in this case, Safety and OTP. As discussed in detail in Module 3 of this course, various types of regression — linear, multiple and logistic — are useful in determining the strength of the correlation between two or more variables (measured as R2). In this case, regression analysis could compare the correlation strength of other variables, besides Safety, on OTP.

6.17 Case Study: Healthcare and the Pros and Cons of Balanced Scorecard Usage

Healthcare and the Pros and Cons of Balanced Scorecard Usage

Raleigh Hospital, a community hospital located on the outskirts of a large metropolitan area, offers basic healthcare services, as well as a newly renovated birthing center, a cancer treatment center, and numerous community programs such as smoking cessation and weight management.

Like many hospitals, Raleigh has been challenged to deliver greater flexibility and quality of services while at the same time cutting hospital costs. In spite of a strong focus on improving quality and the patient experience, the payment systems in place (largely health insurance reimbursement, Medicare and Medicaid) have provided a limited reward. Furthermore, Raleigh's Board is concerned about the new health insurance exchanges and Medicaid expansions, and they are questioning whether the hospital will be able to survive as an independent entity over the next several years.

A Strategic Review

Marie Landis, Raleigh's CEO, engaged the services of Magnuson, a prestigious consulting firm for a strategic review. In an initial discovery session, Landis explained to the consultants that "our goals are, in a nutshell, to improve quality of care, efficiency, and financial performance." She also felt that Raleigh needed to improve its data analytics.

After extensive staff interviews and information gathering, Magnuson's team of healthcare quality and process intelligence experts proposed that Raleigh implement a Balanced Scorecard approach. This would allow the hospital to measure different, sometimes competing, strategic goals and to ensure they remain aligned with the hospital's stated mission.

Landis, the executive management team, and the Board of Directors endorsed this approach to linking the hospital's mission, strategy, resource allocation, operational processes, and outcomes.

The Balanced Scorecard Process

To begin the project, Allen Gove, Magnuson's engagement leader, hosted a management retreat focused on updating Raleigh's mission statement and identifying key strategies to pursue during the upcoming year:

Mission Statement: Raleigh Hospital is committed to providing the highest quality of health care through service excellence, compassionate care, and cost efficient delivery.

Key Strategic Priorities:

- Operate in the black with 5% margin by increasing revenues
- Motivate, recognize, and retain staff
- Improve customer service
- Provide high quality services and patient outcomes

Gove then engaged department managers to evaluate these strategies and place them into their appropriate Balanced Scorecard perspectives. He also worked with them to determine the causal linkages between the strategies and to develop a strategy map.

After the strategy map (above) was approved by management, Magnuson's team set to work identifying the actions Raleigh employees would need to take to achieve the goals and how they would measure the progress in accomplishing each strategy.

The following are a few examples of actions the team decided to implement under each strategy and two measures that could be used to track the accomplishment of each strategy.

Raleigh Hospital Balanced Scorecard Outline

	Learning and Growth	Internal Process	Customer	Financial
Strategic Goal	Motivate, recognize, and retain staff	Provide high quality services and patient outcomes	Improve customer service	Operate in the black with 5% margin by increasing revenues
Actions	• Develop performance-based compensation • Develop peer recognition program • Review/update salary/benefits to ensure competitiveness	• Review ER patient flow process and streamline • Improve patient outcomes • Implement automated pharmaceutical dispensing	• Implement customer service • Improve patient comfort levels • Implement staff training in patient and family interactions	• Review billing and collections processes for accuracy and timeliness • Develop incentive program for AR staff

Measures	• Employee satisfaction • Turnover rate	• % ER patient triaged within 15 minutes of arrival • Risk-standardized mortality rates • Risk-standardized readmission rates • Hospital acquired condition measures • Medical errors per dose	• Patient satisfaction in 95%-tile • Number of customer complaints	• Net revenue increase over prior year • Decrease net days in accounts receivable

When Gove's team presented the Balanced Scorecard framework above, Raleigh's leadership responded positively. Managers at the department level, however, objected. While identifying the measures would be relatively easy, the challenge would be determining whether the data is available and where it is, establishing consistent collection processes, and asking overburdened staff to implement new time-consuming data collection procedures to make the process work.

Gove and Landis tried to downplay these concerns, arguing that data collection and usage had to become part of the hospital's routine. "For example," Gove said, "I suspect you already have data on employee terminations that could be used to calculate turnover rate on a monthly basis by department. And we can help you design employee and patient satisfaction surveys to solicit input for those measurements." Ultimately, the departmental managers and hands-on patient care providers reluctantly agreed to adopt the Balanced Scorecard approach.

To move the process forward, Landis and Gove set about identifying the data sources with department managers and other staff, and to assign responsibility for the collection of the data.

For example, they charged business office clerks with the task of collecting the net revenue and accounts receivable data; the payroll administrator was assigned responsibility for collecting data on turnover rates and employee satisfaction; and administrators, physicians, and senior nurses within the clinical departments were given responsibility for collecting data on ER triage time, medication errors, and the variety of mortality, readmission, and hospital-acquired condition rates.

Landis and the consultants established timelines for collection, deadlines for reporting and report formats. The Board of Directors applauded the team's progress and expressed optimism for the potential of the process to align all stakeholders in support of the hospital's aggressive goals.

The Difficulty of Data

To comply with the high-level mandate, hospital department administrators and managers worked hard to track down the required data. But this proved to be an enormously challenging task: the hospital's IT and database systems were often siloed, and information available in one part of the hospital could not be accessed by another. Furthermore, much of the data needed for the Balanced Scorecard structure was not typically entered electronically, but had to be tracked, recorded, and stored manually. The general consensus in the billing, ER, and clinical departments was that the data collection exercise was likely to be a waste of time that distracted from their primary purpose of taking care of patients.

When the deadline for initial data collection came, there was a great deal of variability in the reports. For example, Raleigh's Human Resources manager was able to set up a simple Excel spreadsheet listing total employees by department, by month, and voluntary terminations within each department, to establish past and current turnover rates easily. This also allowed HR to determine in which voluntary department terminations tended to occur and implement exit interviews to help determine the cause. The HR manager had little difficulty submitting the baseline HR data to the team in the agreed upon format.

On the other hand, the data collection on Internal Process was a mess. With different people on different shifts collecting data on patient quality, outcomes, and errors, there was inconsistency in the frequency with which data was collected, how it was measured (for example, presence of medicine errors was defined in at least three different ways), and a lack of accuracy for certain periods (for instance, when the ER became busy, staff did not always track triage waiting times during those periods). As a result, reports from different departments on a particular metric diverged wildly, casting doubt on the credibility of the data.

Gove and Landis met with the project's steering committee to figure out how to proceed. They realized that the Balanced Scorecard implementation would not lead to performance improvement without data integrity. They also knew that it could prove quite costly to establish the right enterprise-wide IT environment and organization-wide training to refine the data collection process across all departments, especially those collecting data on the same measure. With limited IT capacity and little employee appetite for data collection, Landis became concerned it might be too ambitious for Raleigh to fully implement the Balanced Scorecard in a way that would be meaningful, relevant and affordable. But she knew the Board was expecting to see it come to fruition. As she stared at the latest Magnuson invoice sitting on her desk, she pondered these dilemmas and wondered how to proceed.

Review Questions

For each of the following questions, please type your answer in the text box and click "Submit" to see a sample response.

Question 1. What advice do you have for Landis? Do you think she should continue to implement the Balanced Scorecard approach, and if so, what does she need to do to get it on track and make it effective? If not, how do you think she should present her recommendation to cease the process to the Board?

Question 2. Do you think there is an opportunity to implement a modified or limited version of a Balanced Scorecard at Raleigh without a significant amount of additional investment and training? If yes, what could that look like? If not, why?

Question 3. Assume Landis and her team eventually established a working Balanced Scorecard with sufficient data quality, proper baseline measurements and performance targets. Use the following example of the most recent month's "scorecard:"

Service Delivery Performance	Target	Previous month	Latest Month	Trend
Employee satisfaction (%)	85%	83.6%	80.4%	↓
Turnover Rate (%)	10%	12%	15%	↑
% ER patients triaged within 15 minutes of arrival (%)	80%	82%	80%	↓
Risk-standardized mortality rates (%)	2.6%	2.1%	1.9%	↓
Risk-standardized readmission rates (%)	16.4%	16.3%	16.1%	↓
Hospital acquired infection rate (%)	0.32%	0.33%	0.45%	↑
Medication errors per dose (%)	3%	3.4%	2.9%	↓
Patient satisfaction (%)	95%	89.3%	89.6%	↑
Number of customer complaints	25	7	19	↑
Net revenue increase in same month over prior year (%)	5%	1.5%	2%	↑
Decrease net days in accounts receivable (%)	2%	5%	3%	↓

Legend	
	In Control
	Warning (+/- 5%)
	Action (+/- 10%)

What key insights does the above BSC dashboard tell management?

Suggested/Sample Responses

Question 1:

Either of the following answers address these questions, but with different conclusions.

Recommendation to proceed with the BSC:

The project leaders need to spend time and thought designing the data collection process, including IT infrastructure, consistent data collection and measurement guidelines for all staff involved in data collection, and criteria for "defects" or other measurable element. Landis and the consultants need to slow down the process to develop adequate, clear-cut definitions and train each collector to use the data collection methods, especially if they are not familiar or comfortable with collecting data as a regular part of their jobs. In addition, it would be helpful to get their input into data collection methods that are most comfortable for their process.

It may be necessary to use internal or external IT resources to establish a data collection system that is visible across departments and makes the collection of measures easy and immediate, possibly including handheld devices or enough computer workstations for staff to easily input data without compromising other patient care duties. This may involve additional investment, but it may be necessary to support a sustainable process in which data collection and usage is at the core of the strategic process.

Recommendation to abandon the BSC:

Landis will need to document the problems with data collection consistency and its lack of usefulness in some departments. When she explains her decision to the Board, she should show evidence of the data inconsistency and show how IT limitations, confusion, and apathy of data collectors, and limited time and resources conspire to make Balanced Scorecard challenging in this environment.

She would be well-served to suggest that Raleigh employ some simplified KPIs to measure performance in the absence of a comprehensive BSC.

Question 2:

Landis could implement a modified version of the process for one department, possibly as a test example. Since we know that the HR department has better IT systems and dedicated staff that are accustomed to gathering relevant data and submitting actionable reports, one approach could be to create a Balanced Scorecard with the four different dimensions (Financial, Customer Satisfaction, Internal Business Process, Innovation, and Learning) within HR only. If the benefits of tracking results using the BSC in Human Resources prove to be compelling and support meaningful improvement, Landis could make a case for putting proper infrastructure and resources (staff, training, etc.) in place in other departments to extend BSC across the organization.

Question 3:

There are many possible answers to this question. First and the foremost, the areas indicated in red require the most immediate attention and inquiry, as performance for these indicators has moved outside a 10% unfavorable variance from the target. In this case, turnover rate, hospital-acquired infection rate, net revenue increase in same month over prior year are all underperforming significantly. In some cases, the trend (arrow) may contradict this, showing that there has been progress toward the target since the prior month, but that it is still outside of the 10% variance. For example, in the case of the net revenue increase, there has actually been an improvement (2% compared to 1.5% last month), but it is still way off the 5% target.

Indicators that are shaded in green are "in control" meaning that they are performing at, near or better than targets, whether or not they are improving. And those in yellow are ones to watch, as they are performing within a 5% unfavorable variance.

This BSC dashboard would likely spur management to speak to managers of departments with indicators in red, to understand and analyze the factors causing impeding performance. It may be that the indicator has been in the red category for a period of time, and managers might be checking in to measure progress or remedial action plans. However, if it is the first time an indicator has appeared red, management will likely want to drill down on root causes, conduct analysis and instigate action plans or performance improvement measures to get it within the target range. Or perhaps the target will need to be modified if it is not realistic or if there have been changes in the environment or the reporting mechanism.

6.18 Module 6 Printable PDF

This assignment does not contain any printable content.

6.20 Module Feedback

This assignment does not contain any printable content.