

A close-up photograph of a hand in a black baseball glove holding a wooden baseball bat, poised to strike a baseball. The scene is set on a baseball field with a green field and a brown dirt infield. The lighting is bright, creating a high-contrast, action-oriented image. The text is overlaid on the lower portion of the image.

**Chapter 9**  
**Basics of Enterprise Reporting**

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**“Fundamentals of Business Analytics”**

RN Prasad and Seema Acharya

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## Background

- With the background of business metrics and KPIs, multidimensional modeling, and the big picture of a business enterprise, it's time to think about the basics of enterprise reporting and gain hands-on experience in using a simple reporting tool.
- **Reporting is an integral part of OLTP applications.**
- We will learn about enterprise reporting that will objectively communicate facts relating to strategy, corporate/department performance against plan, status of critical initiatives, and metrics that matter to the stakeholders.
- These reports help leaders align their business activities to the vision and strategies of their enterprise and to monitor their performance against the organization's goals.
- We will also introduce you to some analysis types.

## Reporting Perspectives Common to all Levels of Enterprise

- ✓ Typically enterprises have headquarters and several regional centres. Several geographic location-focused operations may aggregate to the nearest regional centre.
- ✓ Each geographic location may have “revenue generating — customer facing units” and “support units”.
- ✓ There could be regional or corporate level support functions as well. IT could be leveraged at the local operations level or the regional level or the entire corporate level.
- ✓ Hence, it is natural to expect IT enabled reporting to occur at local, regional, or corporate levels.

Let's understand some common perspectives of reporting that apply at all levels of the enterprise.

## Reporting Perspectives Common to all Levels of Enterprise

**Function level:** Reports being generated at the function level may be consumed by users within a department or geographic location or region or by decision makers at the corporate level. One needs to keep in mind the target audience for the reports. The requirements will vary based on the target audience. Departments such as HR, marketing, production, purchase, accounting etc. will need specific standard reports to handle operational, tactical, and strategic challenges. Reports could be produced in many languages to meet global user needs.

**Internal/external:** Sometimes the consumers of reports may be external to the enterprise. We are very familiar with the annual reports of organizations. Correctness as well attractive presentation of the report is of paramount importance.

**Role-based:** Today we are witnessing massive information overload. The trend is to provide standard format of report to similar roles across the enterprise, as they are likely to make similar decisions. For example, a sales executive responsible for strategic accounts will need similar information/facts for decision making irrespective of the country/ products he/she handles.

## Reporting Perspectives Common to all Levels of Enterprise

**Strategic/operational:** Reports could also be classified based on the nature of the purpose they preserve. Strategic reports inform the alignment with the goals, whereas operational reports present transaction facts. The quarterly revenue report indicates variance with regard to meeting targets, whereas the daily cash flow summary indicates summary of day's business transactions. When consolidated across several locations, regions, products/services, even this report will be of strategic importance.

**Summary/detail:** As the name suggests, summary reports do not provide transaction-level information, whereas detailed reports list atomic facts. Even here several summaries could be aggregated to track enterprise-level performance.

**Standard/ad hoc:** Departments tend to generate periodic reports, say, weekly, monthly, or quarterly reports in standard formats. Executives many times need ad hoc or on-demand critical business decision making.

## Reporting Perspectives Common to all Levels of Enterprise

**Purpose:** Enterprises classify reports as statutory that focus on business transparency and need to be shared with regulatory bodies. For example, a bank reporting to the Reserve Bank stipulated parameters of its operations. You might have even heard of audit reports that are produced to check the correctness and consistent application of business policies across global transactions. Analytical reports look into a particular area of operation like sales, production, and procurement, and they find patterns in historical data. These reports typically represent large data interpretations in the form of graphs. Scorecards are used in modern enterprises to objectively capture the key performances against set targets and deviation with reasons. These scorecards help kick off many initiatives that bring back business parameters under control.

## Reporting Perspectives Common to all Levels of Enterprise

**Technology platform-centric:** Reporting in today's context need not use paper at all. Dashboards could be delivered on smartphones and tablets. Reports could be published in un-editable (secure) form with watermarks. Reports could be protected to be used by a specific person, during specific hours from specific device! Reports could be delivered to the target user in user-preferred through an email link as well. Security of data is a constant concern in large enterpris reports represent the secret recipe of the business. Several tools have emerged in the marketplace to meet the reporting requirements of the enterprise. It is not at all uncommon for enterprise to use several tools and technologies to meet the reporting requirements of the enterprise. Some have even set up Reporting Centers of Excellence to handle this crucial function.



## Report Standardization And Presentation Practices

Now let's turn our attention to some of the common best practices that most enterprises employ while considering reporting requirements. Enterprises tend to standardize reporting from several perspectives. Some report standardization perspectives are as follows:

- ✓ **Data standardization**
- ✓ **Content standardization**
- ✓ **Presentation standardization**
- ✓ **Metrics standardization**
- ✓ **Reporting tools' standardization**

# Features of Good Reporting

Feature	Description
Report title	It is important to provide a crisp name for the report such that it reflects its purpose. Some teams may even add the target audience. Example: <i>Cash flow report for SOUTH Region</i> <i>Product Shipping Report for Plant 2</i>
Reporting period	As the reports use data collected over a specific period, it is critical to state the same. The period format could be: For week beginning March DD, YYYY From DD/MM/YYYY to DD/MM/YYYY
Header/footer	It is good to include report headers and footers that repeat on every page. The content could have elements like logo, function name, page number, confidentiality level, etc.
Column headings	The numeric data presented will need to be read based on the column names. Again keeping crisp but meaningful names is critical. These are different from RDBMS column names and need to be user-friendly.
Column selection and sequence	Although reports are meant to be used by users in the same role, but across different locations, users have their own preferences when they want to see the information being presented. There needs to be flexibility for users to select the columns that they would like to see as well as the order or sequence from left to right. Example - Microsoft Explorer and Microsoft Outlook allow one to select from a list of available columns and also display it in a preferred sequence.
Filters	Users may not be interested to see all the lines simultaneously. They need to have flexibility to use standard filters/custom filters (user-defined) to view lines that meet specific criteria. Example: <i>Cash Flow for Department = "XXX"</i> <i>Cash Flow for Amount &gt; 100000.00</i>
Sort sequence	Users would like to view reports lines arranged in increasing or decreasing order for convenience of decision making. Example: <i>Names to be arranged in alphabetical order</i> <i>Revenue Report to be in decreasing order of amount</i> It may be needed to sort lines in cascading fashion as well. BY Department + BY Employee Name BY Customer + BY Date + BY Invoice number
Totals/group totals	When data lines are sorted, they may need to be grouped or bunched together in chunks that make business sense. In these situations, users expect totals and cross-totals as well as overall totals to be computed/provided.
Data field formatting	Users also expect the stored data to be represented with formatting to enhance reading convenience. Using currency symbols like \$, etc. Date formatting like June 3, 2011
Computed or calculated fields	Users may want to introduce new columns that are derived from existing columns and compute some value for decision making.

# Common Report Layout Types

## 1. Tabular reports

Category	SubCategory	Product	Unit	Order Quantity	Sales Amount	Comulative Total	Margin	Margin %
Accessories	Helmets	Apul-100-Helmet, Black	51	51	812.20	1882.2000	488.2140	57.71%
		Apul-100-Helmet, Blue	50	51	362.27	3015.2100	495.2107	51.28%
		Apul-100-Helmet, Red	49	50	302.20	3317.4100	585.2100	51.25%
	Locks	Cable Lock	50	50	275.20	755.2000	224.2100	51.28%
		Pumps	50	50	888.27	888.2700	228.2100	51.25%
	Bikes	Mountain Bikes	Mountain-200-Bike, 26	11	11	201.20	3121.2010	2175.2110
Mountain-200-Bike, 28			10	10	215.20	3336.4010	2390.2110	10.28%
Mountain-200-Bike, 30			9	9	230.20	3566.6010	2620.2110	10.28%
Mountain-200-Bike, 34			8	8	245.20	3811.8010	2865.2110	10.28%
Mountain-200-Bike, 42			7	7	260.20	4072.0010	3125.2110	10.28%
Mountain-200-Bike, 48			6	6	275.20	4347.2010	3300.2110	10.28%
Mountain-200-Bike, 54			5	5	290.20	4637.4010	3490.2110	10.28%
Mountain-200-Bike, 60			4	4	305.20	4942.6010	3695.2110	10.28%
Mountain-200-Bike, 66			3	3	320.20	5262.8010	3915.2110	10.28%
Mountain-200-Bike, 72			2	2	335.20	5608.0010	4150.2110	10.28%

## 2. Matrix Reports

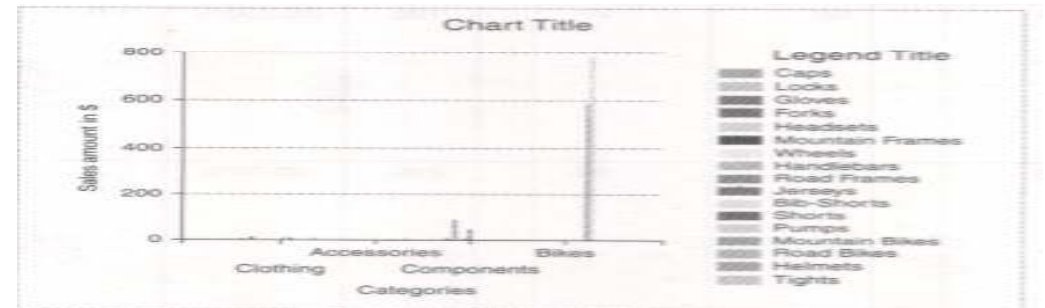
Category	SubCategory	Jan	Feb	Mar	Total
Accessories	Helmets	3371.1455	4360.2640	3923.6094	11655.0389
	Pumps	635.6820	467.7680	659.6700	1763.1180
	Locks	720.0000	735.0000	750.0000	2205.0000
	SubCategory Total	4726.8275	5563.0500	5333.2794	15623.1569

## 2. List reports

Clothing

Category	SubCategory	Jan	Feb	Mar	Total
Clothing	Jerseys	4787.5064	7498.504	5906.1858	18192.1962
	Bib-Shorts	6533.274	8477.058	6533.274	21543.606
	Shorts	3563.406	3923.346	3743.376	11230.128
	Tights	7828.956	9853.888	9859.0628	27541.7048
	Gloves	6817.938	11230.9688	7332.1706	25381.0974
	Caps	440.8525	700.1775	639.8479	1780.8779
	SubCategory Total	29971.9329	41683.7603	34013.9171	105669.6103
Category Total	29971.9329	41683.7603	34013.9171	105669.6103	

## 3. Chart Reports



## 3. Gauge reports

Student No.	Marks in SQL	Marks in OSRS	Marks in SSIS	Total	Percent	Grade
A101	55	68	77	198	66.00%	B
A102	59	60	77	196	65.33%	B

## Report Delivery Formats

- Printed Reports
- Secure Soft Copy
- Email attachment
- Embedded emails
- FTP
- Link to reports
- Worksheet, PowerPoint Presentation, text
- eBook

## Enterprise Reporting Characteristics in OLAP World

- **Single version of truth** – The value of providing the same “fact value” irrespective of the path the user has taken to reach for the data is of paramount importance in reporting.
- **Role-based delivery** – This feature is critical to avoid information overload.
- **Anywhere/anytime/any-device access** – Users have their own preferences and therefore flexibility needs to be built to ensure that users come to the same source of information again and again and don't find alternative ways to decision making.
- **Personalization** – Users' choices of delivery method, format like PDF/worksheet/CSV, book marking, customizing (in terms of language), etc. will need to be addressed.
- **Security** – Enterprises have huge concern over the unauthorized access to business-critical information, hacking by malicious sources, inadvertent leakage of business data, etc. The security framework needs to be thoroughly examined before implementing reporting.
- **Alerts** – Decision makers need immediate notification of threshold breaches of critical business KPIs. These alerts need to be delivered to various devices such as laptop, mobile devices in different forms like email, sound, voice message, SMS text, pop-up, etc. depending on user preferences.

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## Corporations and Strategy

- Traditional *Strategy Deployment and Communication* follows functional hierarchy
- *Strategy Formulation* involves a little Planning and lots of Budgeting
- Only 5% of the workforce understands the strategy, 85% of executives spend less than 1 hour per month discussing strategy, only 25% of Managers have incentives linked to strategy – *Fortune Magazine Survey*
- 35% of stakeholder valuation decision is based on *non-financial data*
  - Strategy Execution
  - Management Credibility
  - Innovation
  - Ability to Attract Talent

*“You can’t manage what you can’t measure.*

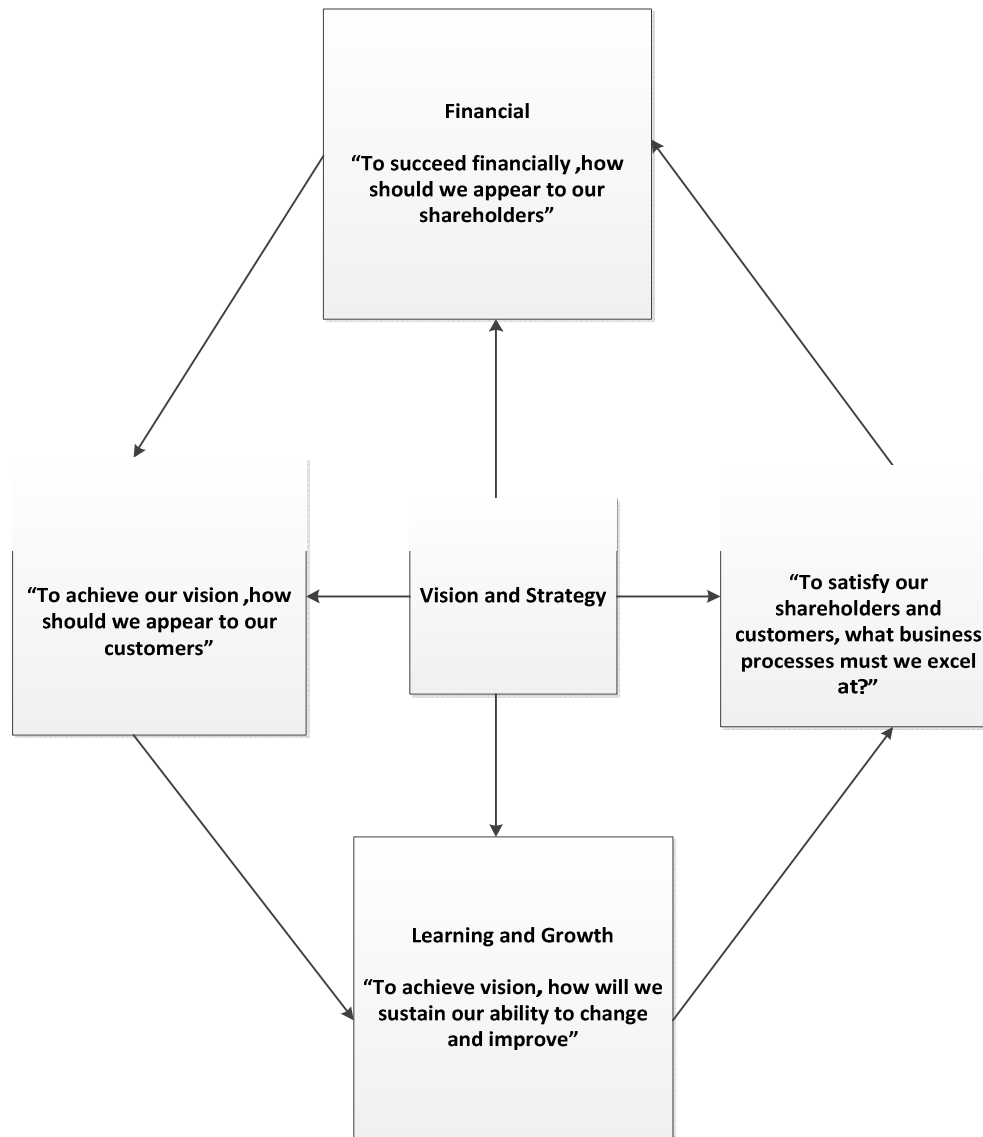
*You can’t measure what you can’t describe”*

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# Traditional Balanced Scorecard (*Source: Kaplan & Norton, 1992*)



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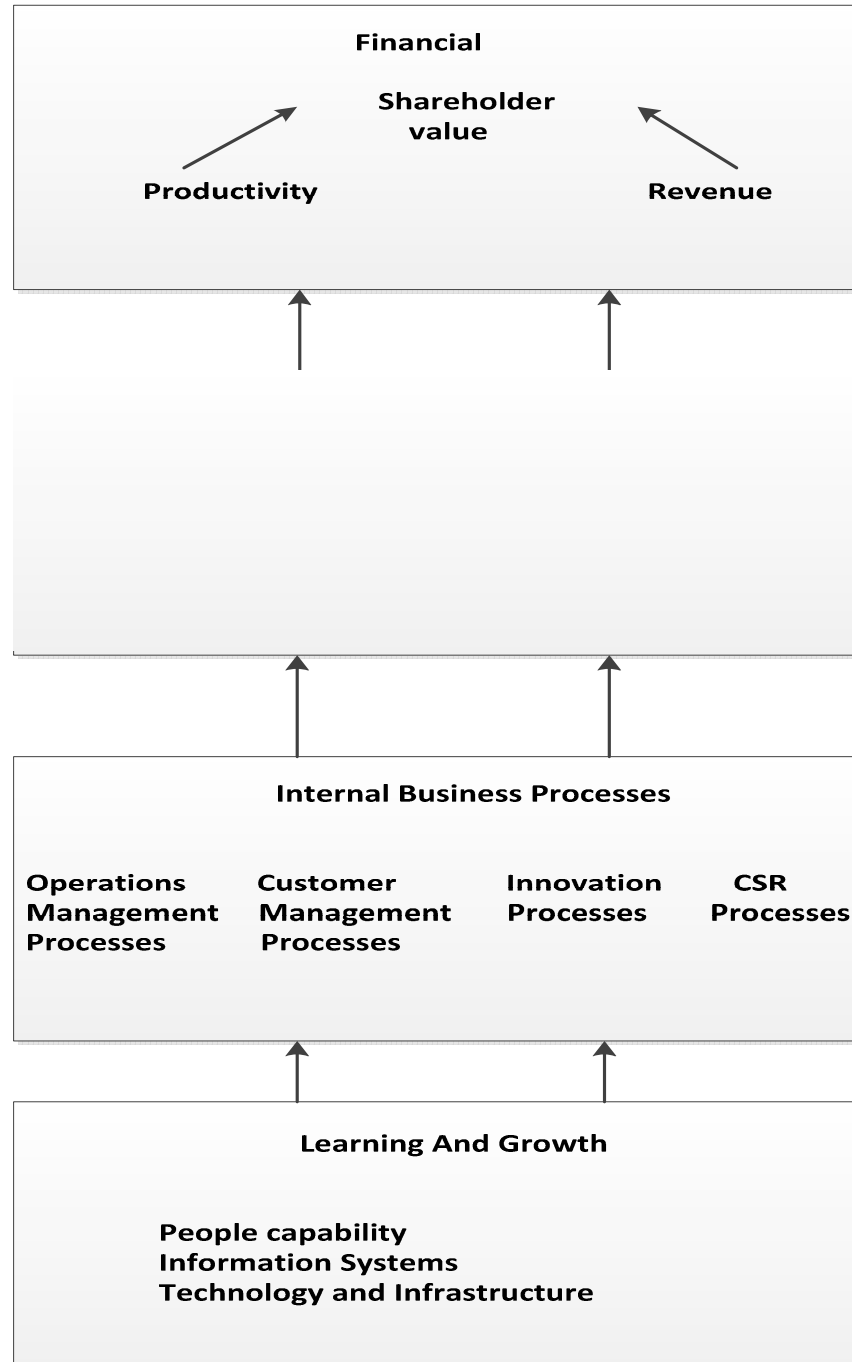
## The Balanced Scorecard

- **Financial perspective:** The financial perspective addresses the question of how shareholders view the firm and which financial goals are desired from the shareholder's perspective.
- **Customer perspective:** The customer perspective addresses the question of how the firm is viewed by its customers and whether the firm will be able to fulfil customers' expectations.
- **Internal business process perspective:** The business process perspective identifies the processes in which the organization must excel to satisfy its shareholders' expectations of good financial returns and also keep its customers happy and loyal.
- **Learning and growth perspective:** The learning and growth perspective identifies the competencies that the employees of the organization must acquire for long-term improvement, sustainability and growth.

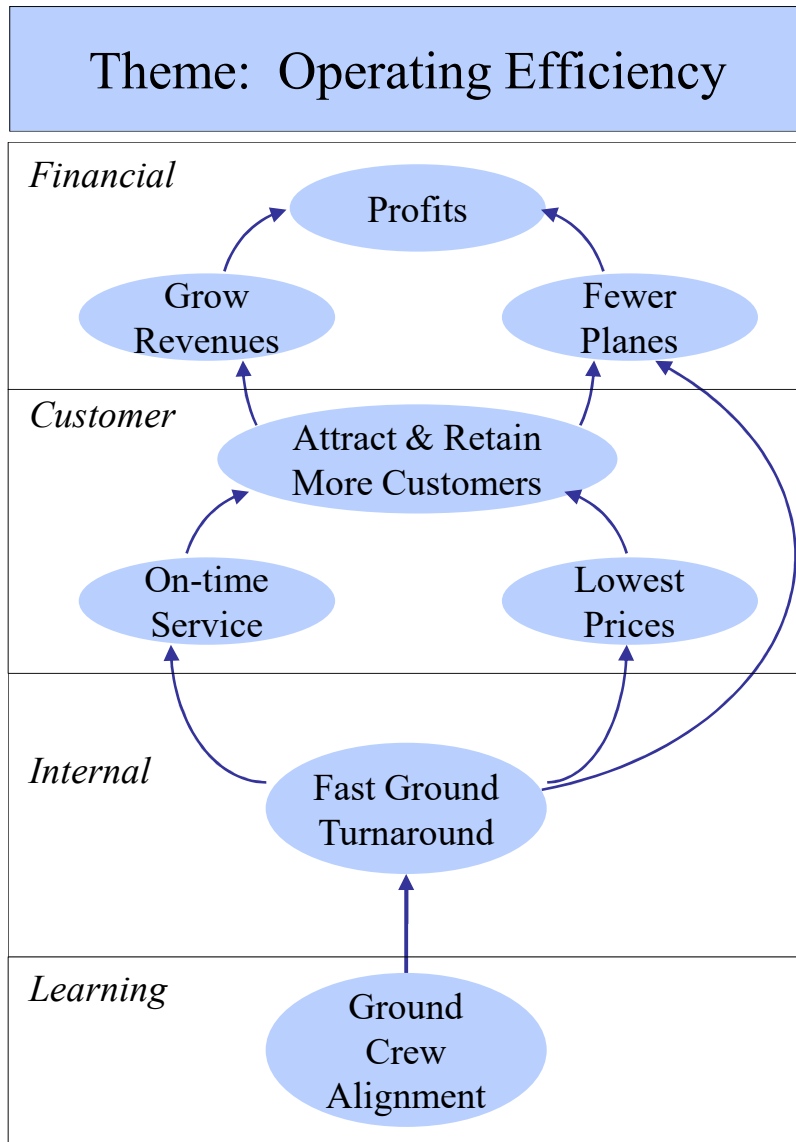


# Strategy Map

The Balanced Scorecard Strategy Map Describes How the Company Intends to Create Value for Shareholders and Customers



# The Measurement System



*What the strategy is trying to achieve?*

*How success or failure against objectives is monitored?*

*The level of performance Or rate of improvement needed*

*Key action programs required to achieve target*

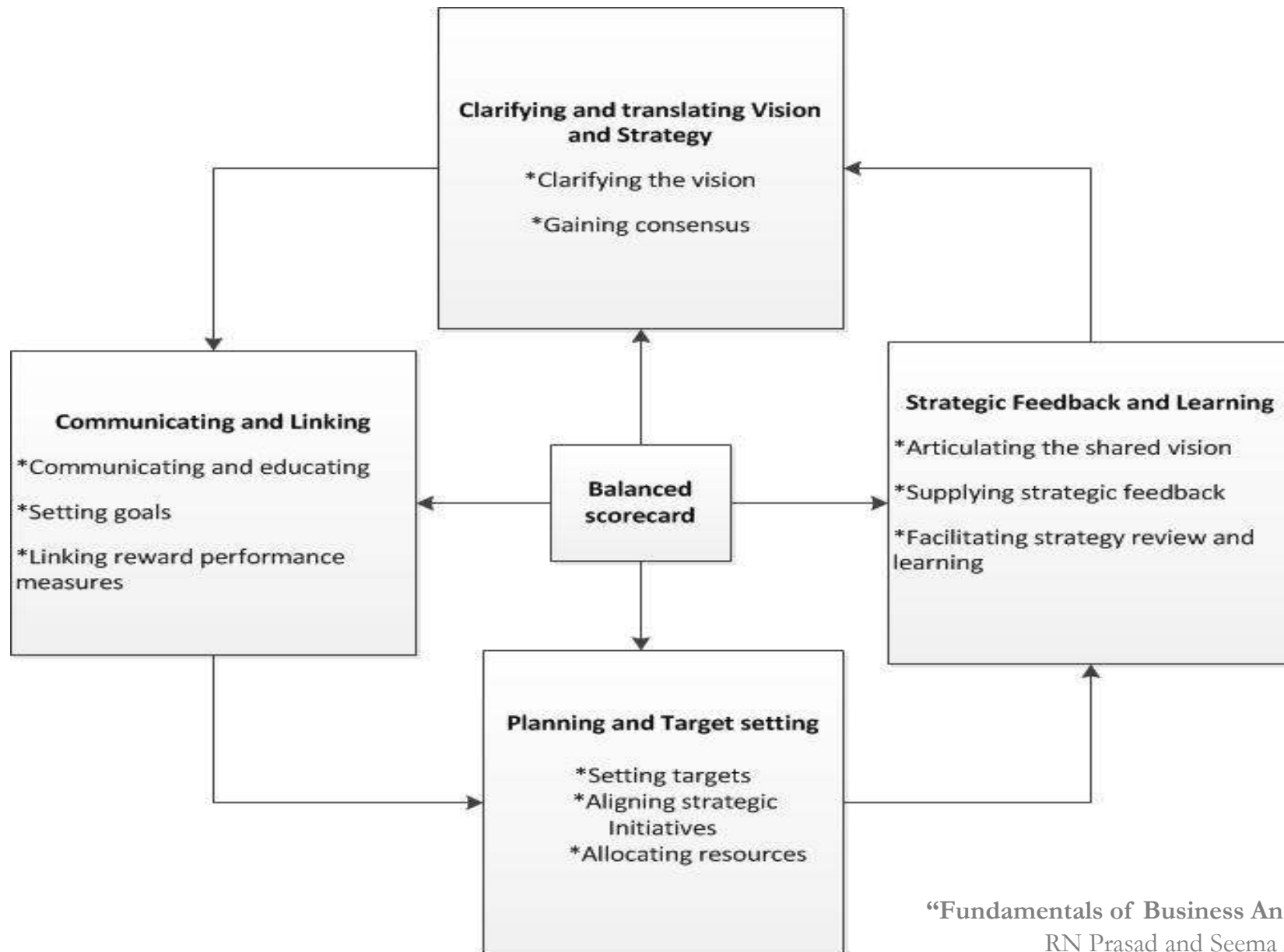
Objectives	Measurement	Target	Initiative
Fast Ground Turnaround	<ul style="list-style-type: none"> <li>On Ground Time</li> <li>On-time Departure</li> </ul>	<ul style="list-style-type: none"> <li>30 Mins</li> <li>90 %</li> </ul>	<ul style="list-style-type: none"> <li>Cycle Time Optimization</li> </ul>

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# Strategy Management Framework



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## Answer a Quick Question

Why does the balanced scorecard take into consideration the **non-financial measures** as well?

## Answer a Quick Question

Can the balanced scorecard be plotted only for the organization  
or  
can we plot it for a business unit as well?

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## Summary – Balanced Score Card

The Balanced Score Card (Kaplan & Norton's) proposes 4 generic perspectives:

- **Financial Perspective:** The focus is on financial objectives
- **Customer Perspective:** The focus is on customer satisfaction
- **Process Perspective:** The focus is on operational goals and the processes that will help realize the financial and customer objectives
- **Learning and Growth:** The focus is on building employee's competencies, training, organizational culture, leadership, value system, CSR (corporate social responsibilities), etc.

# Performance Dashboard

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# **Why do organizations need a dashboard?**

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# Corporate Dashboards

## Operational Excellence

**Corporate Dashboards** are changing the way we look at information and the way we analyze our business.

A well-constructed corporate dashboard answers four basic questions:

- Where
- What
- How
- Why

Instead of wading through pages of disparate operational data, dashboards portray critical operating and strategic information about an organization using a collection of powerful graphical elements.

# Corporate Dashboards

Enterprise dashboards may include:

- Bar Charts
- Maps
- Trend Lines
- Speedos
- Correlation

One quick glance at the dashboard tells users the key performance indicators and metrics used to measure and monitor the companies performance.

This contributes to:

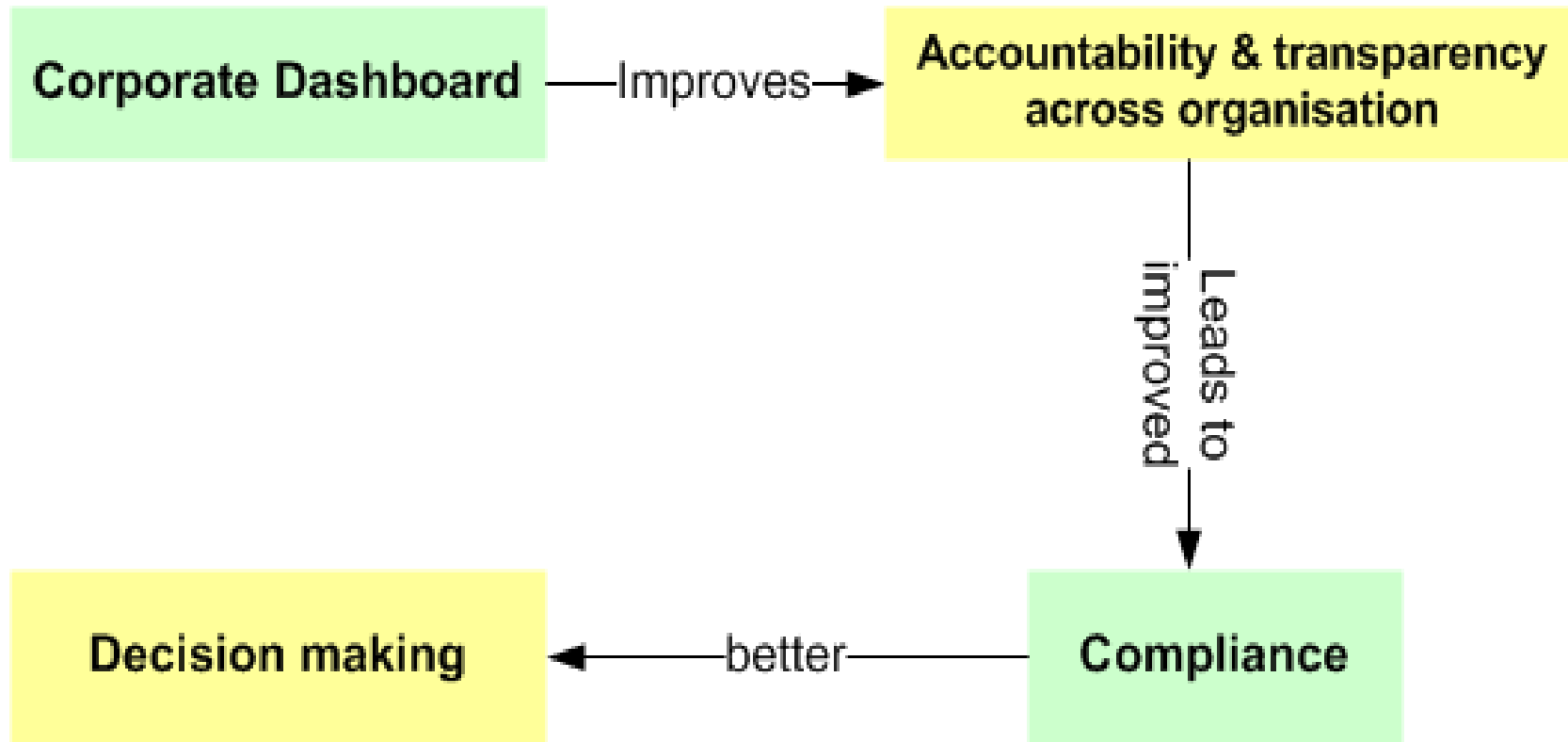
- Better Analysis
- Better Tracking
- Proactive Alerting

## Corporate Dashboards

When KPI's are exceeded, **visual and email alerts** can draw attention to the right area. Further drill down to root cause analysis instantly signals where the exception happened, and what triggered it.

**Trend Analysis:** It uses historical results to predict future outcome. This is achieved by tracking variances in cost and schedule performance.

# Why Corporate Dashboards?



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## Types of Corporate Dashboards

**Enterprise performance Dashboards** provide a overall view of the entire enterprise, rather than specific business functions.

Typical portlets in an Enterprise Performance Dashboard include:

- Corporate financials
- Sales revenue
- Business Unit KPI's [Key Performance Indicators]
- Supply chain information
- Compliance or regulatory data
- Balanced scorecard information

# Corporate Dashboards



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## Customer Support Dashboards

**Customer Support Dashboards:** Organizations provide such a dashboard to its customers as a value-add service.

They provide the customer with their personal account information as pertaining to the business relationship, such as:

- Online Trading
- Utility Services
- Entertainment
- B2B SLA Monitoring

## Divisional Dashboards

**Divisional Dashboards** are one of the most popular dashboards, used to provide at-a-glance actionable information to division heads, operational managers and department managers.

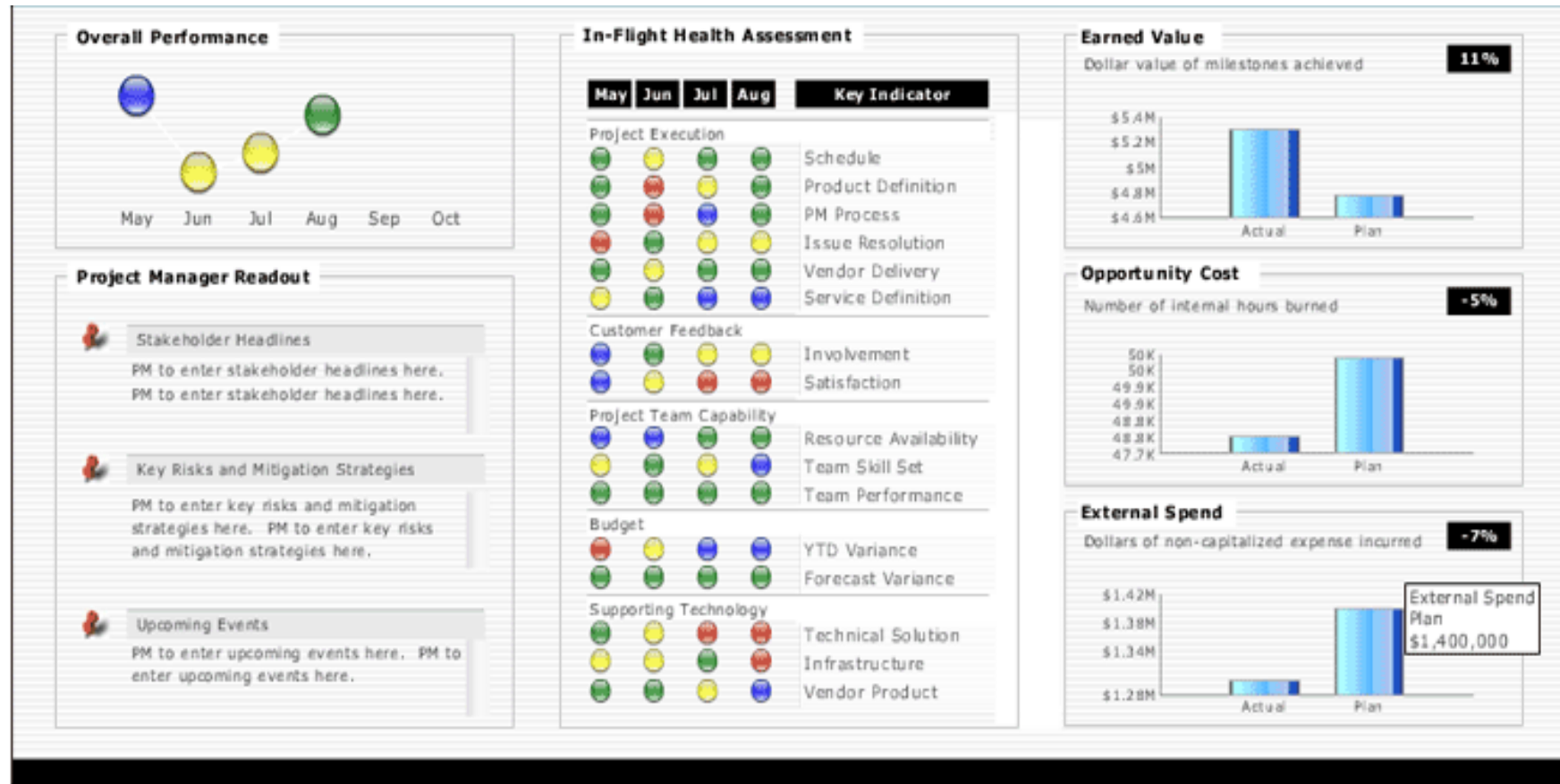
Each division has its own set of KPIs which can be visually displayed on the enterprise dashboard.

Typical Divisional Dashboards include:

- Purchasing Dashboards
- Supply Chain Dashboards
- Operations Dashboards
- Manufacturing Dashboards
- Quality Control Dashboards
- Marketing Dashboards
- Sales Dashboards
- Finance Dashboards
- Human Resources Dashboards



# Example: Project Management Dashboard



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# Benefits of Enterprise Dashboard

Dashboards have the following benefits:

- (a) Places all critical information in just one screen rather than flipping through the pages
- (b) Improved decision making
- (c) Rapid problem detection
- (d) Better analysis of performance
- (e) Identifies the trends and corrective actions to improve the performance of the organization

# Steps in Creating a Dashboard

## (a) Identify the data that will go into an Enterprise Dashboard

Enterprise Dashboards can contain either/both of the below mentioned data:

- Quantitative data
- Non-Quantitative data

## (b) Decide on the timeframe

E.g.: The various timeframes can be:

This month to date

This quarter to date

This year to date

Today so far

## (c) Decide on the comparative measures

E.g.: the comparative measures can be:

The same measure at the same point in time in the past

The same measure at some other point in time in the past

## (d) Decide on the evaluation mechanisms

E.g.: the evaluation can be performed as follows:

Using visual objects e.g. traffic lights

Using visual attributes e.g. red color for the measure to alert a serious condition

## Summary – Corporate Dashboard

- **Corporate Dashboards** are changing the way we look at information and the way we analyze our business.
- Corporate Dashboards contributes to:
  - Better Analysis
  - Better Tracking
  - Proactive Alerting
- Corporate Dashboards improves accountability and transparency across organization
- Corporate dashboards work effectively with **Balanced Scorecard** implementations

## Balanced Scorecard vs. Dashboards

	Balanced Scorecard	Dashboards
Business Use	Performance Measure	Monitor Operations
Users	Senior Executives	Operations Manager
Used by	Corporate/Unit	Corporate/Department
Data	Summary	Detail
Refresh	Monthly/Quarterly/Annual	Intra-day

## References

Check out the following sites for more information:

- [www.CustomerServiceGroup.com](http://www.CustomerServiceGroup.com)
- **The 10-day MBA by Steven Silbiger**  
<http://www.bettermanagement.com>
- [http://www.ap-institute.com/resources\\_casestudies.asp](http://www.ap-institute.com/resources_casestudies.asp)
- <http://www.enterprise-dashboard.com/2007/09/11/xcelsius-dashboard-project-management/>

## Answer a Quick Question

**What makes a dashboard good or bad?**

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## Summary please...

Ask a few participants of the learning program to summarize the lecture.