

Use A Balanced Scorecard - The Answer is CLEAR!

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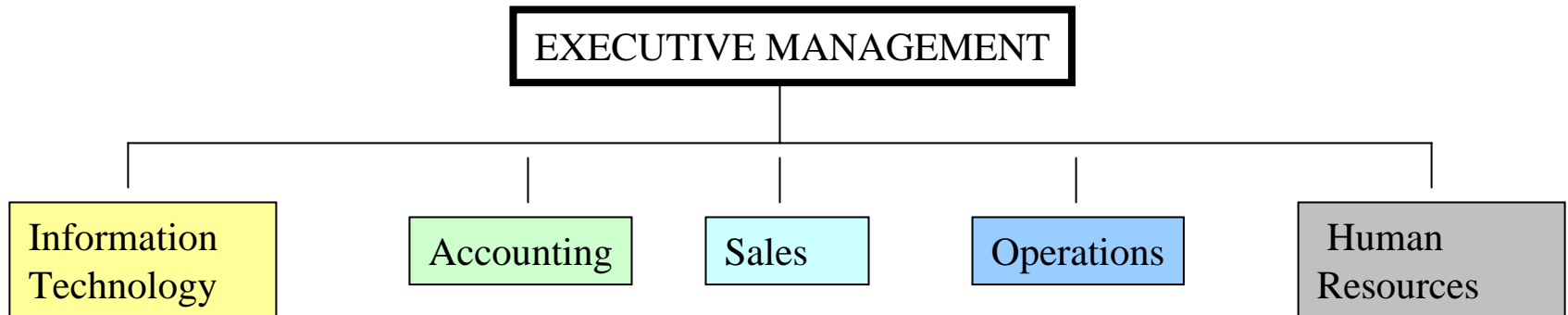
Order of Business

- ➔ • Overview of the Balanced Score Card (BSC)
- Benefits of using the BSC
- How Size Fits into the IT BSC
- CLEAR Approach to the BSC

BSC Overview

Balanced Score Card (BSC) is an actionable tool that provides senior management a comprehensive view of how the organization is progressing towards achieving its strategic goals.

- What it is?
- How does this work?
- Will this work for me?



- Typical Hierarchical Structure
- Each department may have own goals and targets
- Department goals and targets may or may not be in alignment with company vision, goals and targets
- Executive levels may have separate or different requirements (and may or may not support vision)

BSC Overview – Typical Measures

- Business based metrics – revenue, cost, profit
- Customer metrics – satisfaction, quality, defects
- Project metrics – size, effort, cost, duration
- Demand metrics – backlog, type of work

BSC Overview

Vision

What objectives does our company have?



Financial

What financial goals do we have to achieve to meet our objectives?



Customer

What goals do we need to achieve in our customer measures to reach our financial targets?



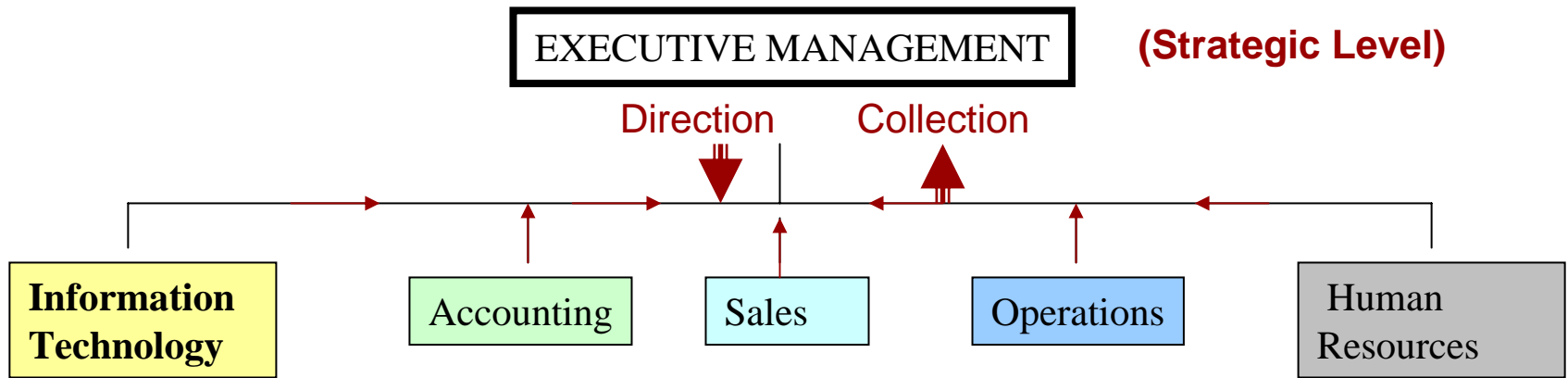
Internal Processes

What performance goals must our internal processes achieve to gain desired customer satisfaction?



Growth and Learning

What training must we provide to the organization to achieve the desired level of performance?



- Each site and/or department will feed into the organizational level BSC with a singular focus
- Departments have goals and targets that are in alignment and/or support company goals and targets
- Executive levels see a uniform, comprehensive and strategic view
- BSC will necessarily have corporate sponsorship

BSC Overview - Example

- Strategic Goal: To be in the top 10% of national companies in software quality

IT BALANCED SCORE CARD	
PERSPECTIVES	Metric
CUSTOMER	Customer Quality Survey - Product Score
FINANCIAL	Cost of Defect Removal in Production
INTERNAL PROCESS	Defects per function point delivered within warranty period
GROWTH & LEARNING	Number of project teams and/or individuals trained in quality reviews and code inspections

BSC Overview

Financial	Customer
Internal Process	Growth and Learning

Perspective

- Set of metrics supporting a strategic goal
- Each metric has a minimum specific set of attributes
 - defined measures
 - target
 - schedule

- Generally 3-5 metrics per perspective
- Usually designed to roll-up or flow-down within a perspective
- Provides a balance of measures
 - Long and short term metrics
 - Balances financial and non-financial metrics
 - Balances strategic and operational metrics
 - Future (Leading) and Past (Lagging) Metrics

BSC Overview - Example

- **Strategic Goal: To be in the top 10% of national companies in software quality***

IT BALANCED SCORE CARD			
PERSPECTIVE	Metric	Target	First Quarter
CUSTOMER	Customer Quality Survey - Product Score	95% or better	CQS Score/100
FINANCIAL	Cost of Defect Removal in Production	\$160/defect 1st qtr; \$145/defect 2nd qtr; \$125/3rd qtr; \$120/defect EOY	(Removal Effort/Defects) x Hrly Rate
INTERNAL PROCESS	Defects per function point delivered within warranty period	2.4 defects/1000 fp delivered	Warranty Defects/(Fps Delivered/1000)
GROWTH & LEARNING	Number of project teams (individuals) trained in quality reviews and code inspections	100% of teams trained in one year with at least 25% each quarter	Trainees/Yearly Projected Trainees

* 2.4 defects delivered/1000 fp; Production defect removal cost = \$120/defect (Assumption)

Benefits of the BSC Methodology (cont.)

- Can produce cost saving benefits by providing organization focus
 - Focus purposely limits number of metrics to implement
 - Streamline data collection
 - Eliminate non-supporting or non-operational metrics
 - Eliminate redundant and/or useless reporting
- Leverage your present measurement knowledge – *Not new metrics just a new way to view and report metrics (a tool)*
 - Common measurement formulas
 - Goal – Question – Metric (GQM) method
 - Practical Software Measurement (PSM)
 - Benchmarking initiatives

BSC Benefits – Reuse Knowledge

Example of using the Goal-Question-Metric paradigm

Goal

- Improve application development productivity by 15%

Question

- Do we have a methodology for tracking productivity (IP)?
- What is the effect on value to the customer versus profitability (C)?
- Do we have accurate time tracking capabilities (IP)?
- Do we want to collect size/or effort data on new and/or enhancement projects (IP)?
- Is cost data readily available and/or calculable (F)?
- Is training data available and reliable (GL)?

Metric

Metrics are derived using the answers to cause & effect questions.

Sizing in the IT BSC

- Organizations focused on managing costs and improving IT performance must rely on measured outcomes
- Typical measures in the BSC include cost, time to market and quality
- Accurate evaluation of these measures must include size as the common denominator
- Without size, a relative value can not be established
- Size is the natural output of an input process where effort is the input

Sizing in the IT BSC

Benefits of Sizing

- Quantitative (Objective) Measure
- Basis for Comparison - Industry
- Manage Expectations (Perceived Customer Value)
- Satisfies Software Process Improvement Requirements (relating to Internal Process perspective)
- Satisfies Practical Software and Systems Measurement (PSM) objectives or ISO standards

Sizing in the IT BSC

Characteristics of an effective IT BSC size component

- Meaningful to developer, user (customer), and other key members of the organization
- Defined (industry recognized)
- Consistent (methodology)
- Easy to learn and apply
- Accurate, statistically based
- Available when needed (early in the life cycle)
- Flexible – will normalize across the organization's platforms and development environments

We recommend the use of function points for the IT BSC.

- **Productivity Rate = Effort in Hours / Size in Function Points**
- Rework Percentage = Rework Hours / Total Project Hours
- Defect Removal Efficiency = Total Number of Defects Found Prior to Delivery / Total Number of Defects Discovered (before and after delivery)
- **Production Defect Rate = Total Production Defects / Function Points Installed**
- **Warranty Defect Rate = Defects during Warranty Period/Function Points Delivered**
- **Scope Creep = Add + Del + Chg Function Points / Original Function Point Count**
- **Cost Efficiency = Actual Cost / Function Points Installed**
- Project Duration = Project End Date – Project Start Date
- Estimated Project Duration = Estimated Project End Date – Estimated Project Start Date
- **Development cost = Effort*Hourly Rate (or Effort Costs)/Function Points Delivered**
- Cost Variance = Actual Cost - Estimated Cost / Estimated Cost
- Effort Variance = Actual Effort - Estimated Effort / Estimated Effort (in hours)
- Duration Variance = Actual Duration – Est. Duration / Est. Duration (in months)
- **Production Support Rate = Full time equivalent (FTEs)/Application Function Points Supported**

Development Scorecard

- Productivity Rate = Effort in Hours / Size in Function Points
- Scope Creep = Added + Deleted + Changed Function Points / Original Function Point Count
- Warranty Defect Rate = Defects during Warranty Period/Function Points Delivered
- Delivery costs = Project Costs (Effort)/Function Points Delivered

Application Support Scorecard

- Production Support Rate = Full time equivalent (FTEs)/Function Points (Installed) Supported
- Production Defect Rate = Total Production Defects / Function Points Installed
- Cost Efficiency = Actual Cost / Function Points Installed
- Application Portfolio Ratio = Total Application Counts (Installed) Before/Total Application Counts (Installed) After

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CLEAR Approach

- Phase 1 – Developing the BSC
 - Objectives
 - Measures
 - Metrics
- Phase 2 – Transitioning the BSC
 - Targets
 - Reporting
 - Maintenance

Developing the BSC – Phase 1

- **Create and/or review organizational strategic plans and vision.**
- **Link organizational strategy & goals to departmental and individual goals.**
- **Exercise cause & effect relationships.**
- **Articulate objectives for time, quality, performance and service.**
- **Rank and review measures.**

Transitioning the BSC – Phase 2

- **Choose appropriate targets for each measure.**
- **Link to other organizational scorecards/measures.**
- **Execute BSC implementation.**
- **Align BSC process with executive management oversight.**
- **Review and revise the performance management process.**

References

For more information:

- The David Consulting Group
 - www.davidconsultinggroup.com
- International Software Benchmarking Standards Group
 - www.isbsg.org.au
- International Function Point Users Group
 - www.ifpug.org