Webinar: Measuring & Managing Supply Chain Performance

with

Dr. Maria Rey-Marston

Lecturer, Georgia Tech Supply Chain & Logistics Institute

Managing Partner, MRM+ Partners LLP

COURSE INFORMATION	
DATE	November 5-7, 2014
LOCATION	Atlanta, GA
REGISTER	**www.scl.gatech.edu/mmpsclo**

Georgia Tech Supply Chain & Logistics Institute

Stewart School of Industrial & Systems Engineering

MEASURING AND MANAGING SUPPLY CHAIN PERFORMANCE

WEB.SESSION

SUPPLY CHAIN & LOGISTICS INSTITUTE
MARIA REY-MARSTON

09.25.2014

November 5-7, 2014 at Georgia Tech

Measuring and Managing Supply Chain Performance

MEASURES OF SUPPLY CHAIN OPERATIONS SUCCESS

01. RESOURCE LEVEL:
Cost and Productivity

02. PROCESS LEVEL:
Velocity and Quality

PROCESSES THAT DRIVE SUPPLY CHAIN PERFORMANCE

01.
MEASURES OF SUPPLY CHAIN OPERATIONS SUCCESS

RESOURCE LEVEL: COST AND PRODUCTIVITY
PROCESS LEVEL: VELOCITY AND QUALITY

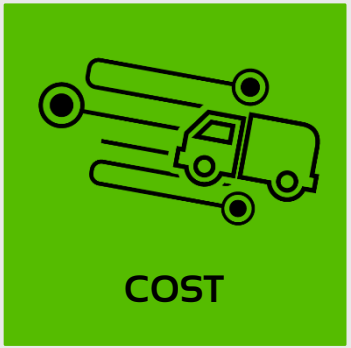
WHAT DO WE GET PAID TO DO?

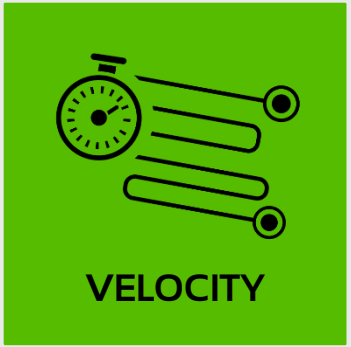
BUT IS MORE THAN THAT... LET'S GET BACK TO THE BASICS!

DO MORE	PRODUCTIVITY
WITH LESS	FINANCIAL
BETTER	QUALITY
FASTER	VELOCITY/TIME
SUCCESS	SATISFACTION

PORTER'S VIEW OF CREATING A COMPETITIVE ADVANTAGE!

SCM PERFORMANCE





SCM PERFORMANCE

COST

COST OF RESOURCES AND ACTIVITIES

Cost-to-Serve

Cost-of-Doing Business

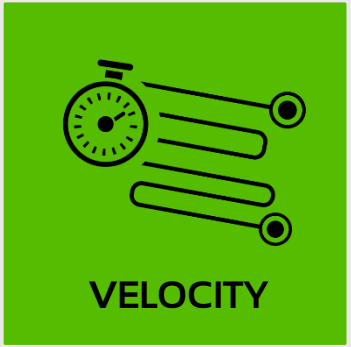
Total Supply Chain Management Costs

SCM PERFORMANCE

RESOURCE PRODUCTIVITY

- Warehouse Density
- Inventory Turns
- Man-Hour Efficiencies

SCM PERFORMANCE



ELAPSED TIMES FOR PROCESS EXECUTION

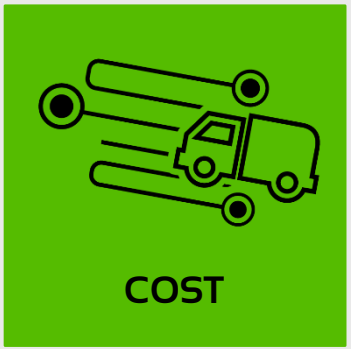
Customer Order Cycle Time

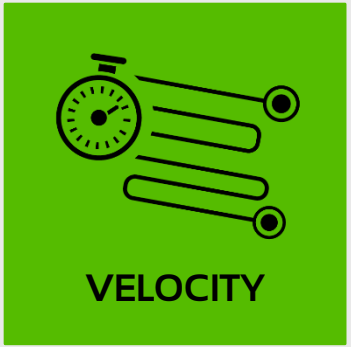
Sourcing Cycle Time

SCM PERFORMANCE

PROBABILITY OF SUCCESS
Perfect Order Percentage
Demand Forecast Accuracy
On-Time In-Full Delivery (OTIF)

SCM PERFORMANCE





02.
SCM PERFORMANCE SCORECARD DESIGN FOR SUPPLY CHAINS

01.
Indicators and Profiles

02.
Properties of Supply Chain Indicators

03.
Design of Supply Chain Scorecard

01.
Indicators and Profiles

Not everything that is quantitative is a performance indicator

Statistics
(Neutral)

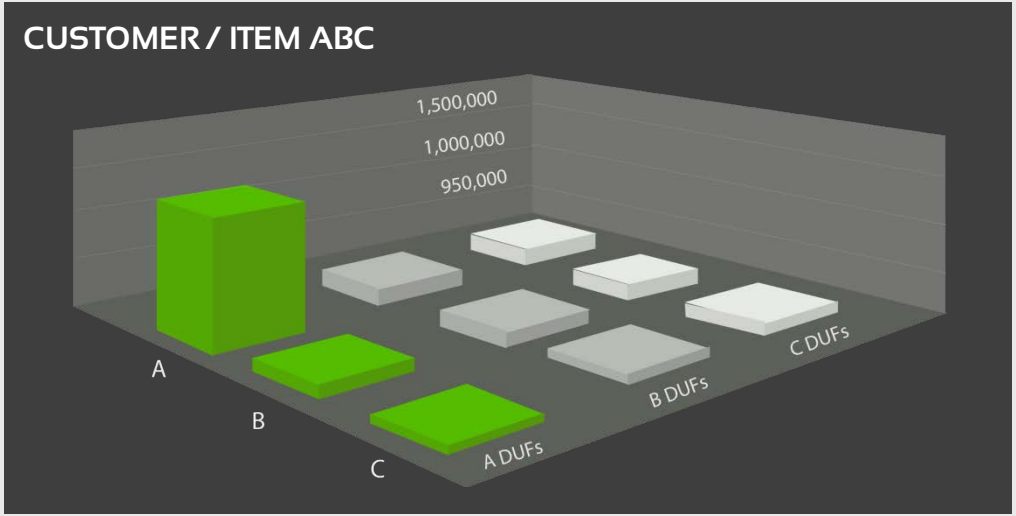
Profiles
(Behavioral but not Judgmental)

Performance Indicators
(Judgmental)

An example...

01.

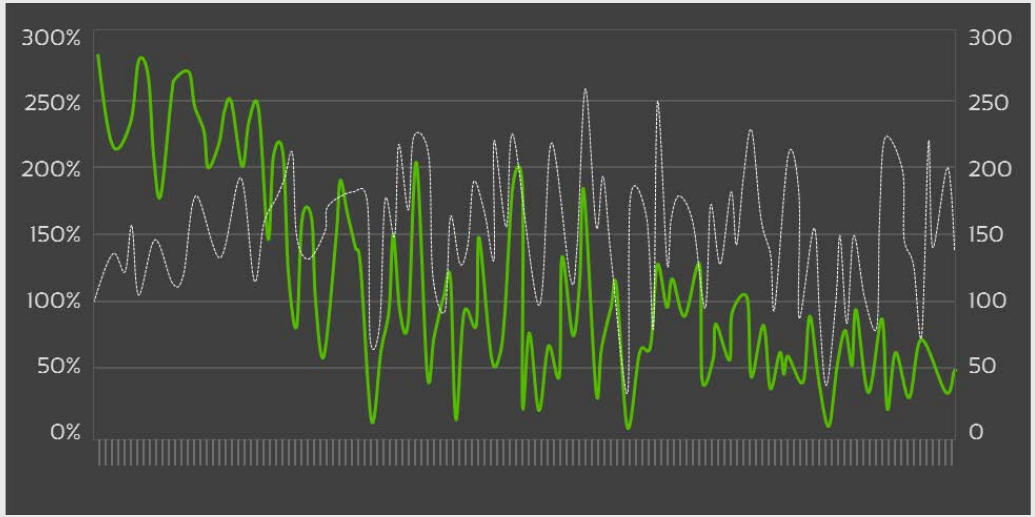
Indicators and Profiles



INDICATOR OR PROFILE?

01.

Indicators and Profiles



FORECAST PROFILE FOR 2 SKU'S

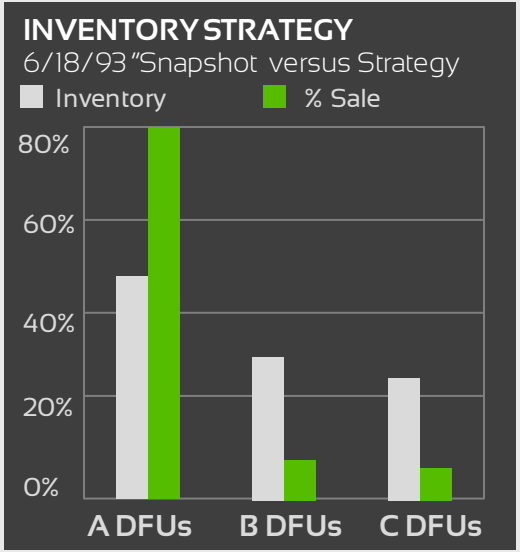
Indicator AND Profile

November 5-7, 2014 at Georgia Tech

Profiles Help Us Make Decisions

01.
Indicators and Profiles

- → Customer Response Measures
- → Customer Classifications
- → SKU Classifications
- → Customer-SKU Classifications
- → Customer Service Policy Design
- → Inventory Management Performance Measures
- → SKU Categories for Inventory Management
- → Forecasting Models by SKU Category
- → Inventory Turnover and Fill Rate Targets by Logistics Segments
- → Inventory Reduction Opportunities by Logistics Segment



02.

Properties of Supply Chain Indicators

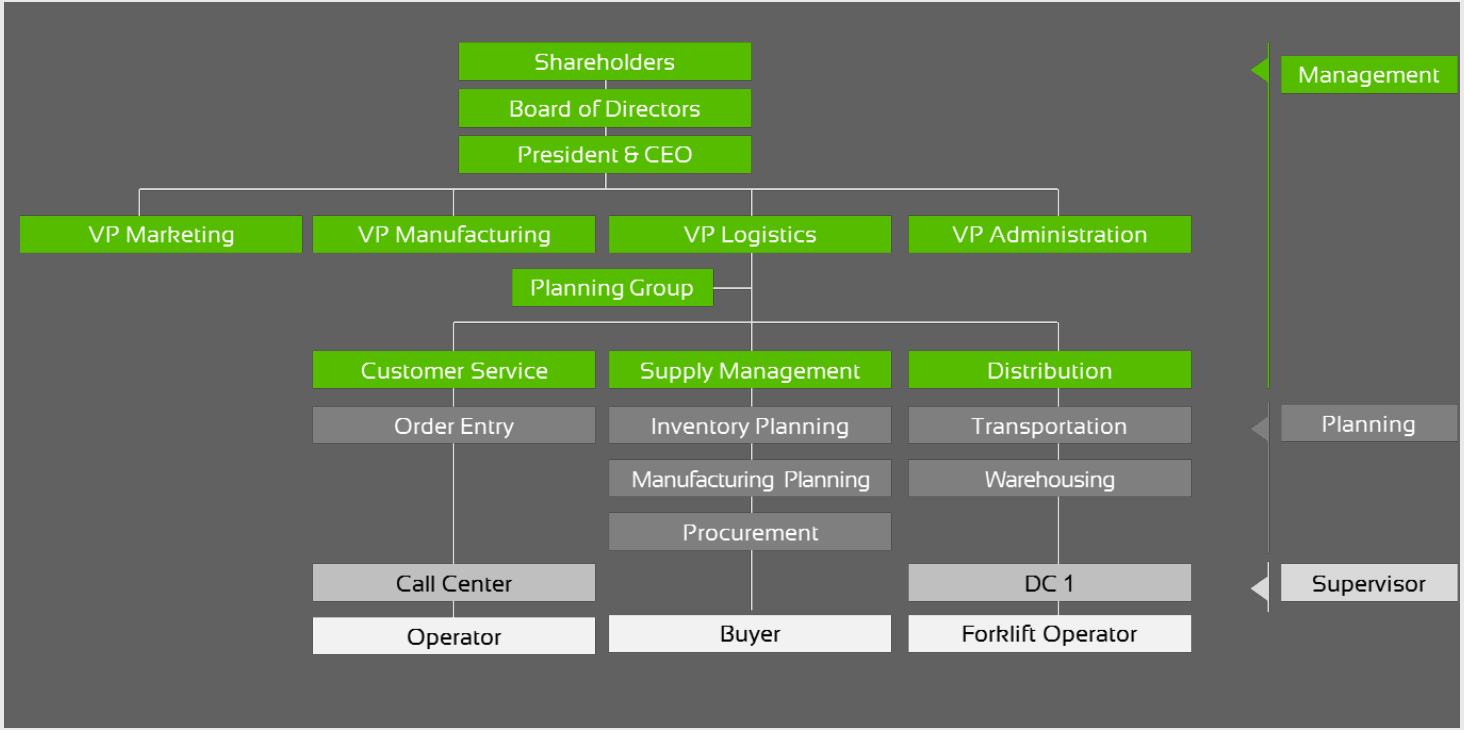
Key Principles

Top-Down Alignment	Control	Lateral Coherence	Bottom-Up Aggregation	Balance

Top-Down Alignment

SCM PERFORMANCE SCORECARD DESIGN FOR SUPPLY CHAINS

Control
Check
Roles &
Responsibilities



Lateral Coherence
Where is the problem?

SALES
Revenue Growth
Q x P

PLANNING
Inventory Turns
Q Sold/Q Held

PROCUREMENT
Unit Cost Reduction
Q (cost) x P (cost)

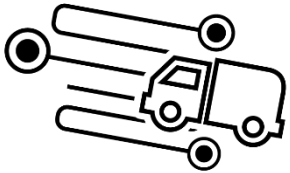
SCM PERFORMANCE SCORECARD DESIGN FOR SUPPLY CHAINS

Bottom-Up Aggregation

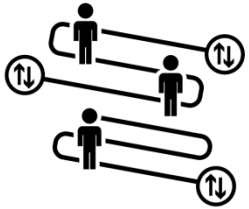
LOGISTIC PERFORMANCE SYSTEM

Customer Service	Inventory Planning	Supply	Transportation	Warehousing	Logistics
Entry Error % Status Error % Invoice Error %	Fill Rate% Forecast Accuracy%	Perfecto P/O%	On-Time% Damage-Free% Perfect Documentation %	Shipping Accuracy% Inventory Accuracy%	Perfect Order Percentage
Order Entry Time Order Processing Time	Days of Inventory	Purchase Order CT Supplier Lead Time	In-Transit Time Loading/Unloading Time	Warehouse Order Cycle Time	Logistics Cycle Time Cash-to-Cash Cycle Time
Customer Orders per Hour	Inventory Turnover	Purchase Orders per Hour	Fleet Utilization Shipments per Person - Hour	Unites per Man-hour Storage Density	Perfects Orders per logistics FTE, ROLA
Customer Service Costs	Inventory Carrying Cost Lost Sales Cost	Procurement Costs	Transportation Costs	Warehousing costs	Total Logistics Cost Logistics Value Added

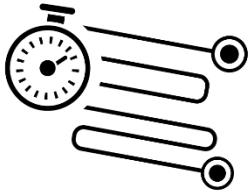
Balance
At least one of each!



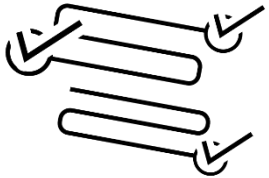
COST



PRODUCTIVITY



VELOCITY



QUALITY

03.

Design of Supply Chain Scorecard

The overall goal is alignment with corporate-level indicators

Design Features

Optimal Scope

Optimal Detail

Optimal Frequency

The Cube

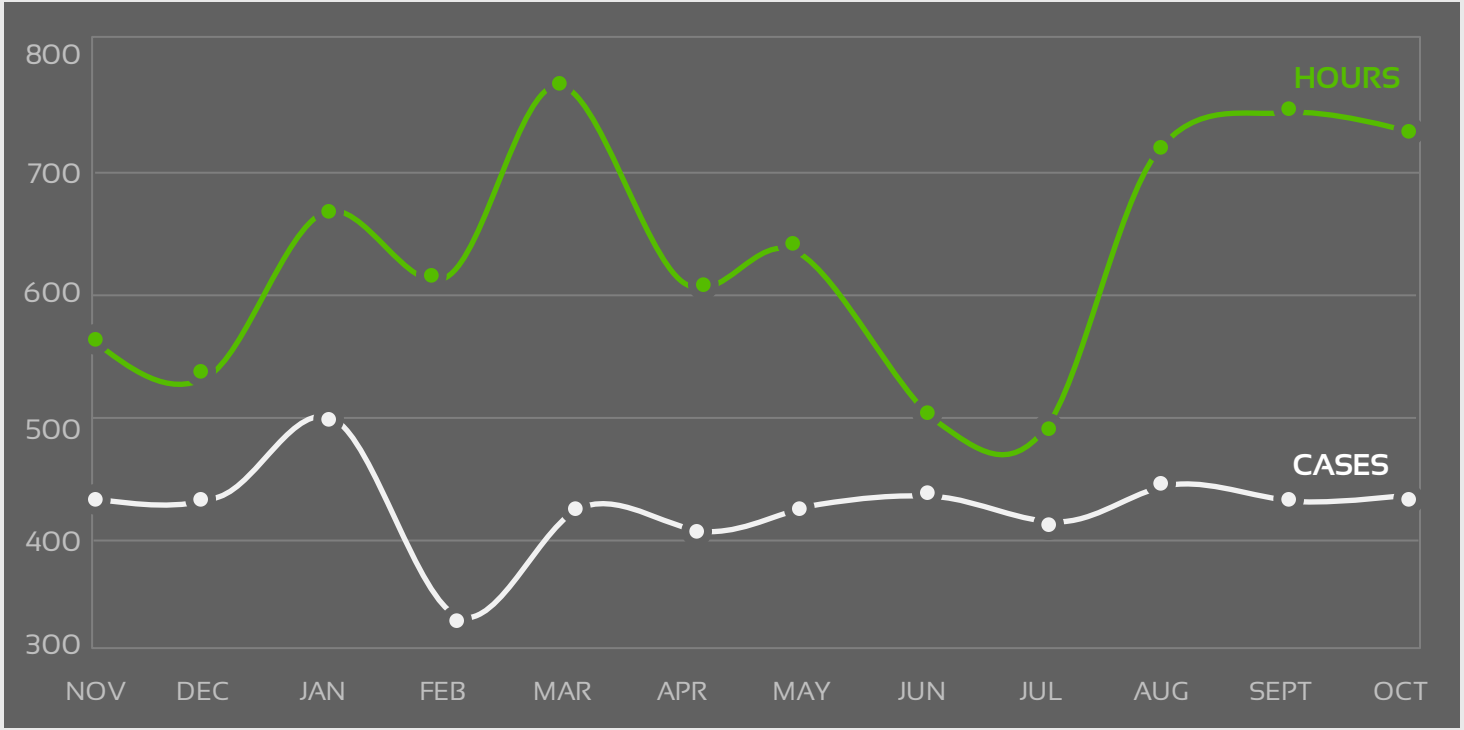
Decisions to Determine Optimal Design

Measurement Scope
Unit of Analysis

Level of Detail
Activity Being Measured

Frequency
Intervals between measurements

CASE 01.
Scope
Detail
Frequency



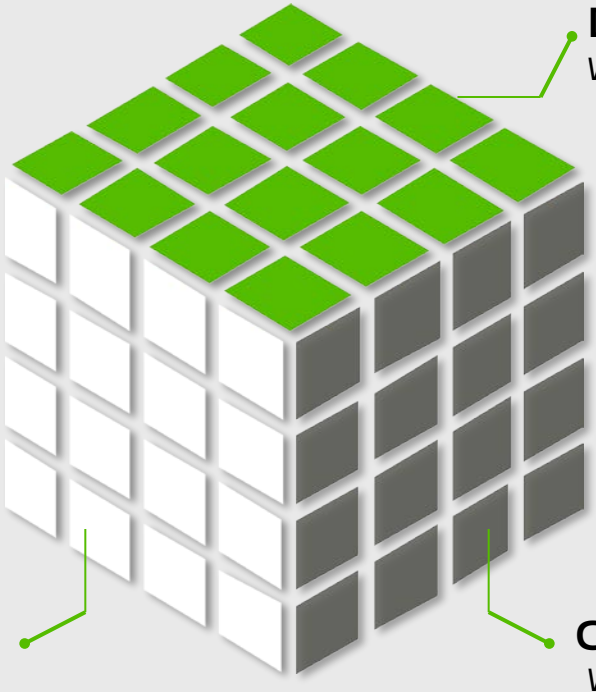
The Cube
Measures

DIMENSIONS

CONTEXTS

PERSPECTIVES

The Cube
of Supply Chain Performance Measures



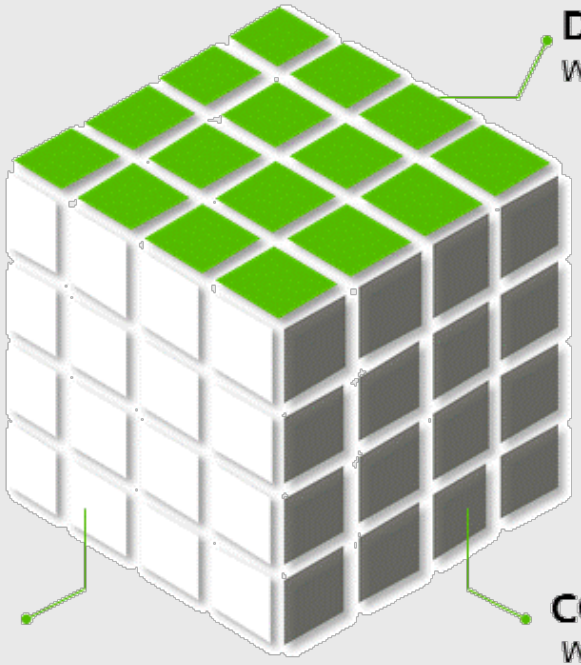
DIMENSIONS
What is being measured?

PERSPECTIVES
Who Cares?

CONTEXT
What, When and Where?

The Cube
Of Supply Chain Performance Measures

KPIs
3D view of success in SCM



DIMENSIONS
What is being measured?

PERSPECTIVES
Who Cares?

CONTEXT
What, When and Where?

One KPI example

D: Quality = Line Fill Rate
C: Project = Field01 Team
P: Supplier = XYZ33

TOTAL QUALITY MANAGEMENT

"Combination of Interdependent Events"

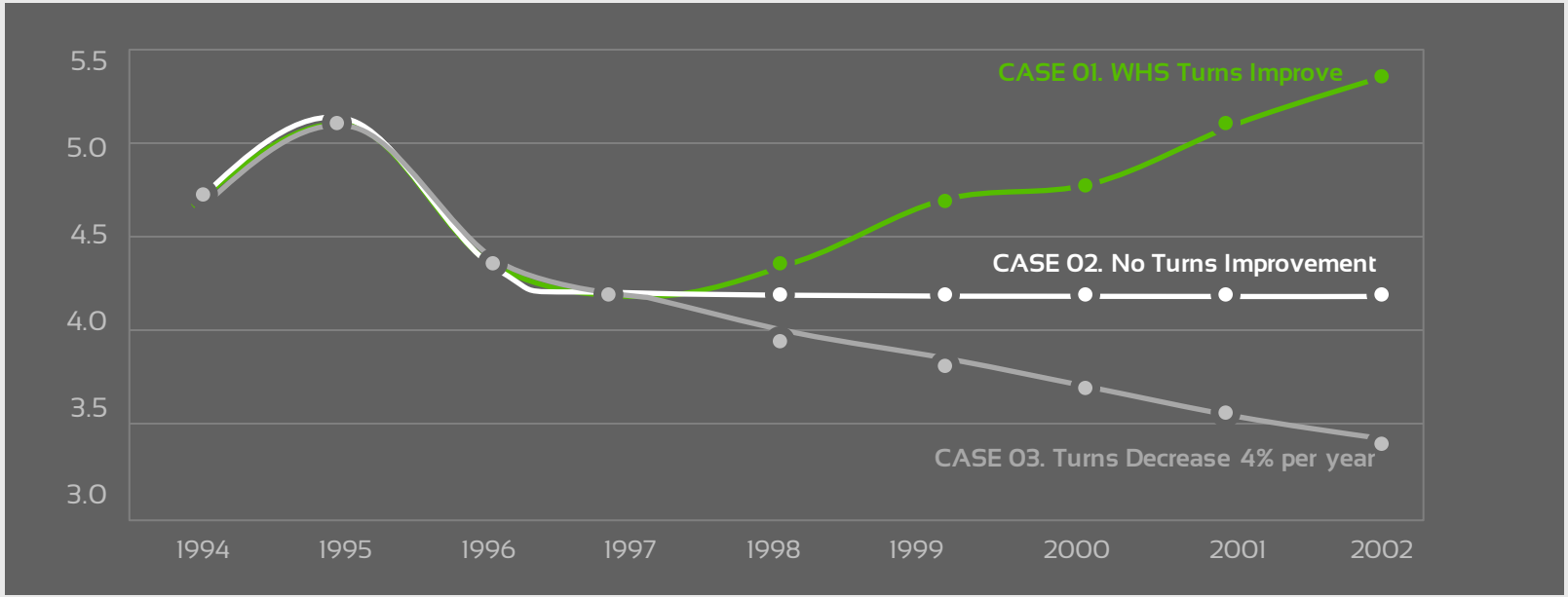
November 5-7, 2014 at Georgia Tech

The probability of experiencing a perfect order is the multiplication of the probabilities of the 8 independent events.

All SCM functions are represented in this KPI!

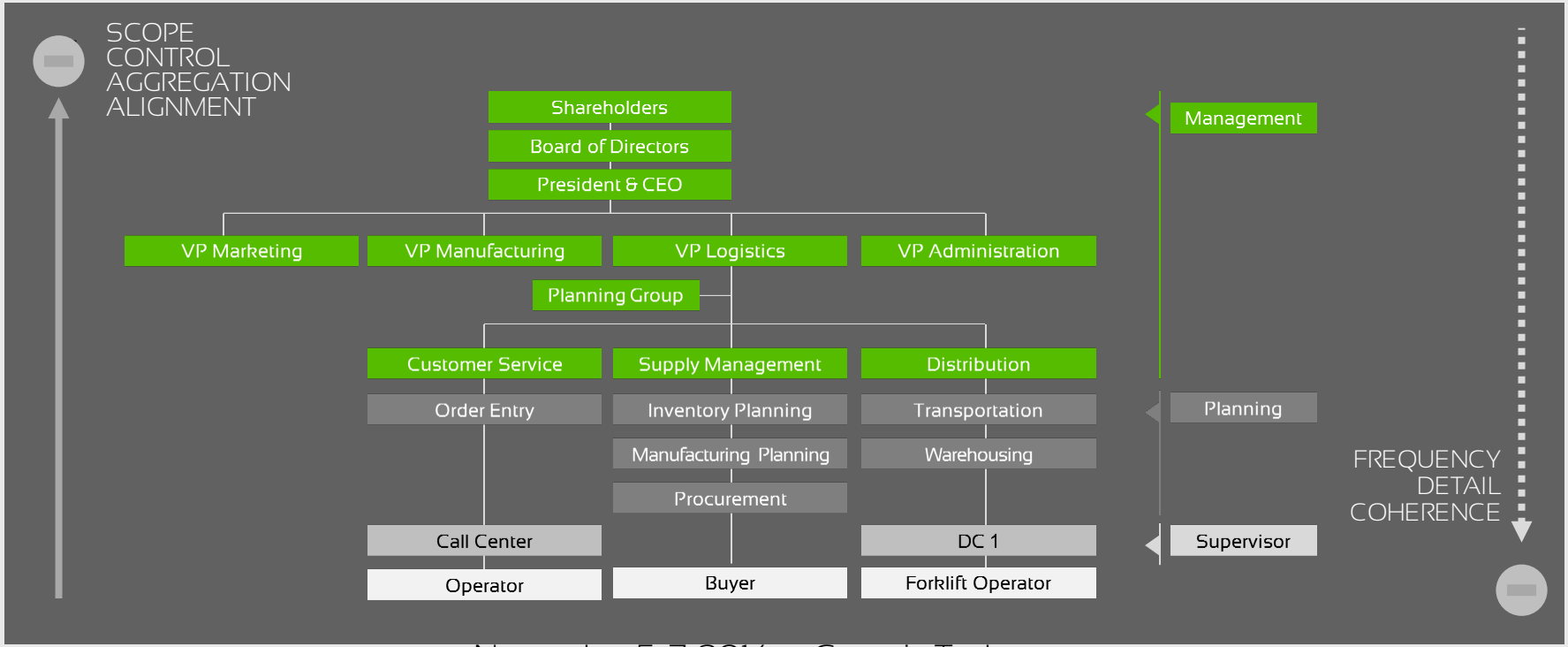
97% Is entered correctly	80% Has available inventory	95% Has the right amount of the right products
96% Is damage Free	72% Arrives On-time	94% Arrives at the right location
89% Is communicated electronically	93% Has no invoice/collection errors	48%

From Recording the past...
...to Anticipating the future

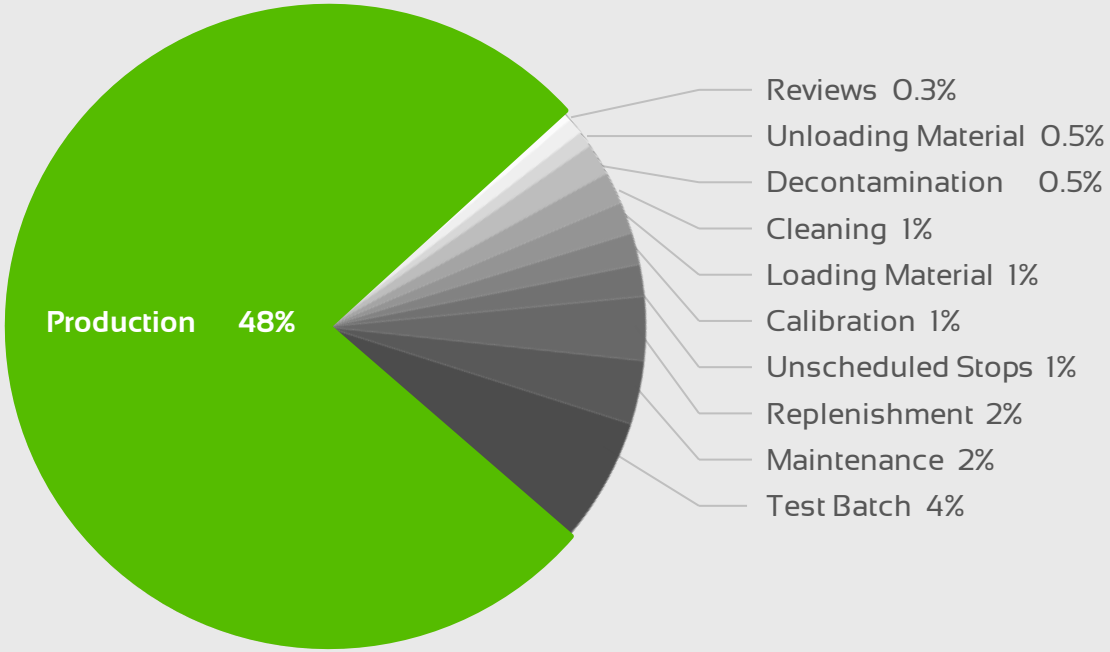


Disney World was predicting additional warehousing space requirements based on inventory turns reduction and equal storage density

CONTROL


SCOPE
CONTROL
AGGREGATION
ALIGNMENT
Shareholders
Board of Directors
President & CEO
VP Marketing
VP Manufacturing
VP Logistics
VP Administration
Planning Group
Customer Service
Supply Management
Distribution
Order Entry
Inventory Planning
Transportation
Manufacturing Planning
Warehousing
Procurement
Call Center
DC 1
Operator
Buyer
Forklift Operator
Management
Planning
Supervisor
FREQUENCY
DETAIL
COHERENCE

The Aggregation Property



Other obvious ones

S	M	A	R	T
Specific	Measurable	Action Oriented	Relevant	Timely

Be Cautious with the Calculations, the Time Periods and the Reporting – An Example

FILL RATE
(by Unit of Measurement)

Total Fill (Binary)
Unit Fill (Percentage)
Case Fill
Order Fill

FILL RATE
(by Location)

Global
Local

FILL RATE
(by Time Period)

Initial
At x hours
Final

MEASURING AND MANAGING SUPPLY CHAIN PERFORMANCE

WEB.SESSION

SUPPLY CHAIN & LOGISTICS INSTITUTE
MARIA REY-MARSTON

09.25.2014

November 5-7, 2014 at Georgia Tech

To learn more about our offerings, please visit www.scl.gatech.edu

facebook

GeorgiaTechSCL

twitter

@GTSCL

LinkedIn

Georgia Tech Supply Chain & Logistics Institute

YouTube

http://www.youtube.com/gtscl

Measuring and Managing Performance in Supply Chain and Logistics Operations

November 5-7, 2014

(Georgia Tech Campus)

www.scl.gatech.edu/mmpsclo