ABC – Activity Based Costing

DEVARAJAN SWAMINATHAN AND CO.

COST ACCOUNTANTS

3C’s in a good business strategy

There are three C’s in any good business strategy namely:

Company’s cost

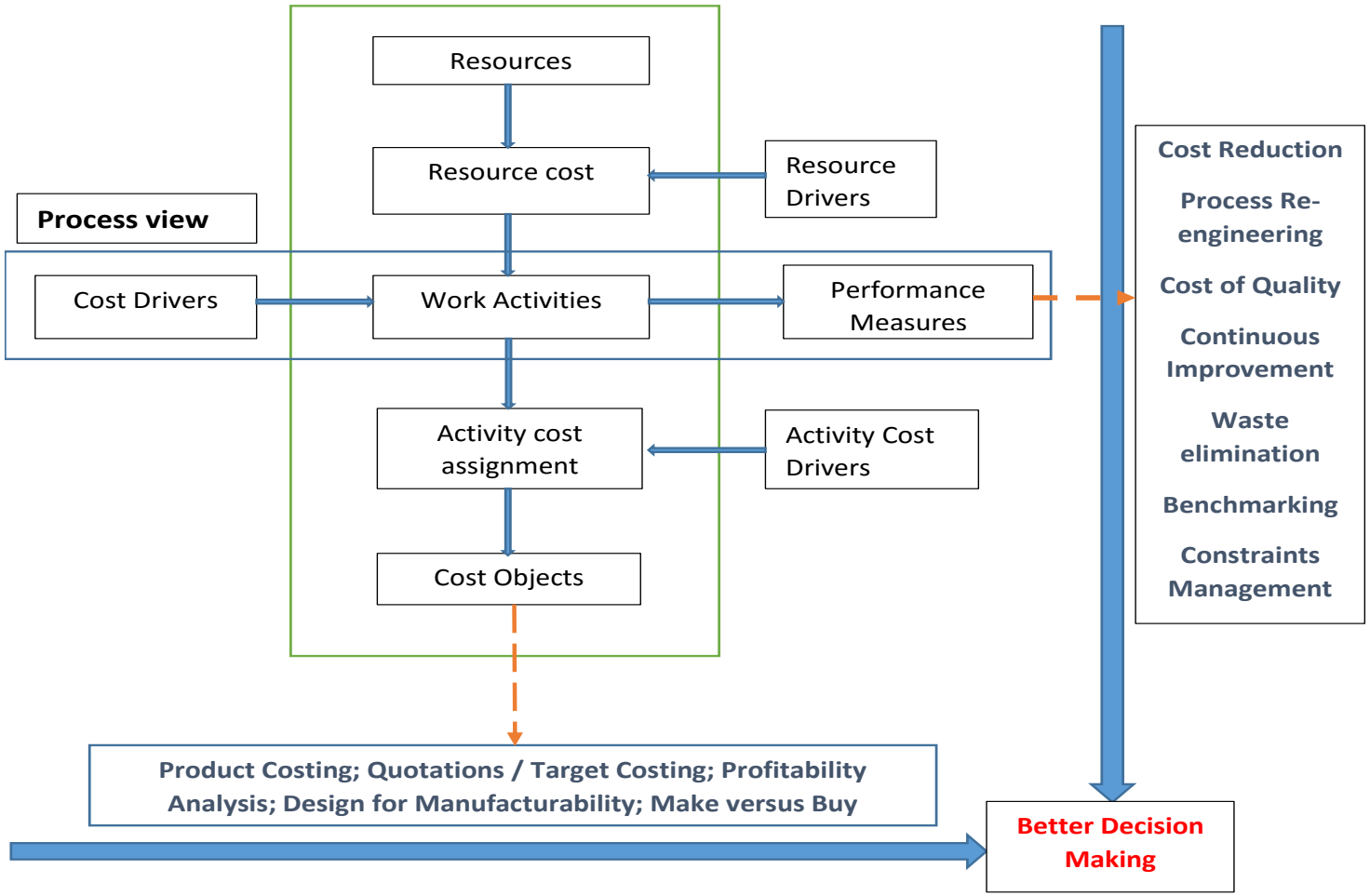
Competition

Customers

The ABCM Cross

CIS – Cost Information System

Product / cost assignment view



A flawed cost information system

Set the wrong prices

Sell the wrong products and services

Focus on the wrong markets

Serve the wrong customers

Design costly products and services

Make incorrect sourcing decisions.

Problem with conventional cost accounting

The underlying methodology of conventional cost accounting system is that they assume that products *cause cost*.

This is true for costs that are directly attributable to the product at the product unit level. E.g raw material consumption, direct labor. When the number of units go up, direct labor cost will also go up.

However, this assumption does not work where the activities are not performed directly on the product units. For. E.g when you set up a machine to produce a “type” of part, you produce a batch of parts rather than a single unit.

So the correct assumption that fits what's really happening is that products (or customers) create the need to perform activities and it’s the activities that cause costs.

Why do we need a good CIS?

We need a good CIS (Cost Information System) to facilitate effective decision making. Some examples of the use of cost information:

Managing the profitability of products and services

Managing the profitability of customers and markets

Managing the cost of processes

Identifying ways of reducing costs

Making decisions about outsourcing

Regulatory purpose

Welcome – Activity Based Costing

ABC is just such a Cost Information System (CIS)

ABC assumes that cost objects create the demand for activities, activities consume resources and thereby cause cost.

In the process ABC provides insights (business intelligence) about activities and cost objects.

Activities – Cost Objects - Defined

Activities: are descriptions of the work that goes on in an organization.

For e.g. entering the details of a customer order

Cost Objects: They are the reasons for performing the activities.

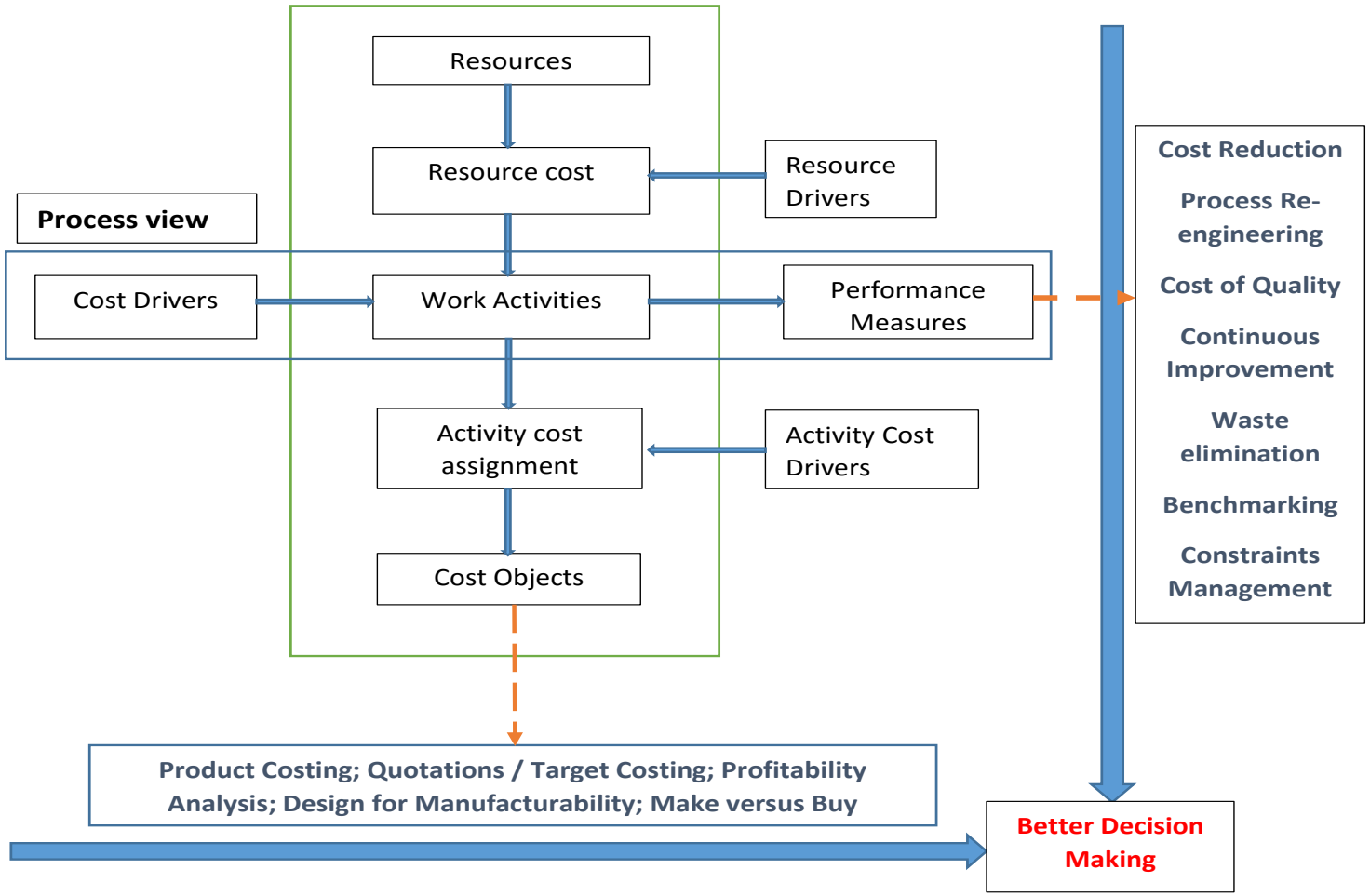
E.g. customers, products, services.

Entering details of a customer order (activity) is performed *because* a customer (cost object) wishes to place an order.

The ABCM Cross

CIS – Cost Information System

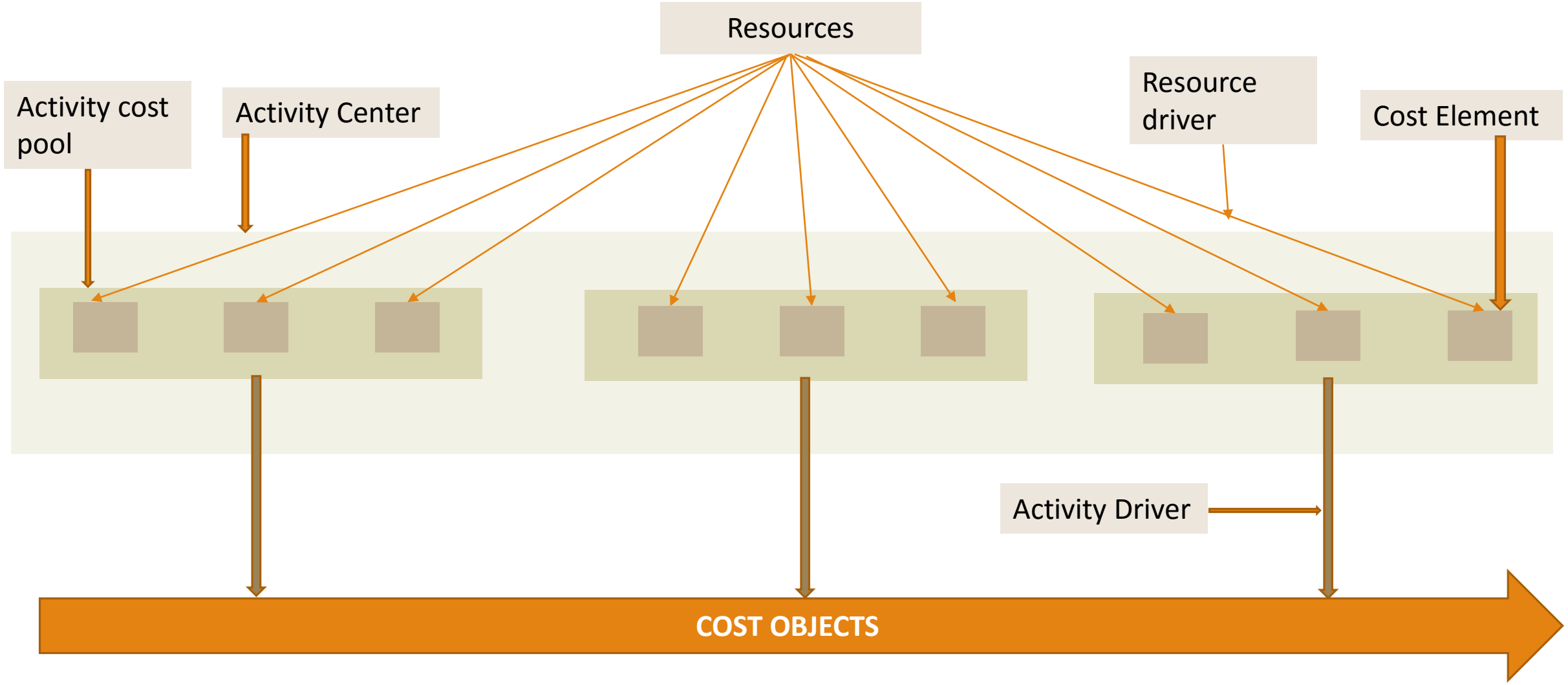
Product / cost assignment view



Product and Process view

The vertical view is the product view or the cost assignment view or the Activity Based Costing view. It reflects the organization's need to assign costs to activities and cost objects (including customers as well as product and services) in order to analyze critical decisions.

Process view or Activity Based Management view reflects factors that influence the performance of activities (cost drivers) and performance measures that show how well the work is being done.


Resources
Activity cost pool
Activity Center
Resource driver
Cost Element
Activity Driver
COST OBJECTS

Building Blocks of cost assignment view

Resources : The primary source of the information is the general ledger. E.g salaries, electricity, depreciation. The idea is to map the expenses in the GL to the activities in such a way that it reflects how much resources have been consumed by the activities.

Activities: They are the real work performed by organizations. They are the center piece of ABC. They must be defined *before* cost assignment. Activities can be core or enabling. Further one can attach attributes like unit level, batch level, product level or even cost drivers, performance measures, non value added to the activities. Core are mission critical, enablers e.g accounts dept, IT dept . Activities are listed in activity dictionary, with clear definition, a brief explanation and tasks associated with those activities.

Activity centers: Activity Centers, cost centers run parallel to the organization chart. Related activities are pooled together, like in a department. But it contains information on activities.

Building Blocks of cost assignment view..contd.

Resource drivers: Rate at which resources are consumed by activities. They are the link between resources and activities. The take costs from the general ledger and assign them to activities.

Cost elements: The part of each resource assigned to an activity is the cost element. Salaries, depreciation, consumables etc. A list of cost elements consumed by a activity is called a bill of costs. Activities with the largest bill of costs provide the greatest potential for cost reduction.

Activity cost pools: Cost assigned to each activities within the activity center. Activity cost pool is the total cost associated with an activity.

Activity drivers: Rate of consumption of activities by cost objects. It is used to assign resources from the activities to the cost objects.

Cost objects: They are the final point to which the costs are traced. A cost object is the very purpose why work is performed in an organization.

First Steps – Assigning resource costs to Activities

This assignment is based on measurements of resources used. These measurements of resource consumption / rate of consumption of resources are called *resource drivers.*

Cost of Activity – Auditing Product Quality	
Depreciation of Test Equipments	58000
Employee costs	88000
Space (proportionate depreciation or rent based on square feet)	61000
Consumables	6500
Fixtures	120000
Total Activity Cost	333500
Number of Boards Tested	667000
Cost per Board	0.50

Second Step – Assigning activity cost to cost objects

This assignment is based on consumption of activities. An activity driver is a measure of consumption of an activity by a cost object.

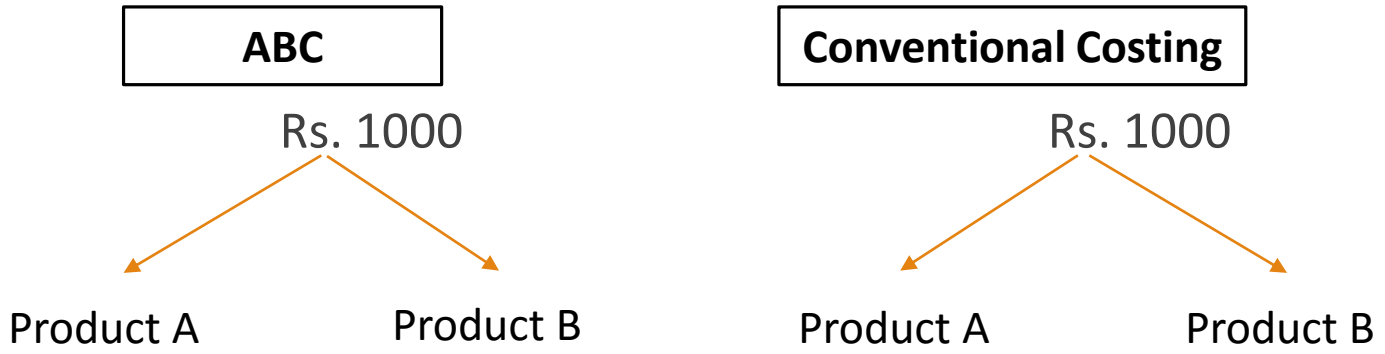
Auditing Product quality		
Cost per batch for both product	Rs. 50	
Cost per direct labor	Rs. 25	
	Product A	Product B
Number of Direct Labor Hours	4	4
Number of Batches produced	1	2
Conventional cost	Rs. 100 (25*4hours)	Rs. 50 (4 hrs/2batch*Rs25)
ABC Cost	Rs 50	Rs 100

Activity and Driver Levels

Level	Activity	Activity Driver
Unit Level		
	Assembly	Direct Labor Hours (touch labour)
	Stamping	Machine Hours
Batch Level		
	Moving Materials	Number of moves
		Time per move
	Inspection first piece per batch	Number of runs
		Time per inspection
Product Level		
	Modifying product design	Engineering hours
	Programming CNC machines	Programming hours

Cost Assignment – ABC vs Conventional

Making tools and dies



Cost per Product	Rs. 500	Rs. 500	Rs 800 (200*4)	Rs.200(50*4)
Volume	200	50	200	50
Cost per unit	Rs. 2.50 (Rs. 500/200 units)	Rs. 10 (Rs.500/50 units)	Rs. 4 (Rs1000/250 units)	Rs. 4 (Rs1000/250 units)

Resource Drivers

DRAWING COST														
MONTH		HSD Ltrs	LPG CYL Nos	DRG POWDER	COATING POWDER	CANT	SLRY	ELECT BILL16 A	MNT, ETC,	RENT		EXPNC Rs	PROD, Kg	PROD RATE Rs/Kg
APR-15	QTY	52	14	60	100									
	AMNT	2908.36	42523.46	14538	23389	3045	51813	22990	3000	40667		270668	151025	1.79
	RATE	55.93	3037.39	242.3	233.89									

Assigning resource drivers to activities

Drawing			Annealing				Pickling			Total	
Qty (Kgs)	Rate / Kgs		Qty (Kgs)	Rate / Kgs	Fuel ltrs per Tonne		Qty (Kgs)	Rate / Kgs		Qty (Kgs)	DAP Cost/Kgs
2,48,559	2.32		1,85,643	5.13	44.44		2,09,981	3.43		6,44,183	10.88

Activity drivers to cost objects

IT_TYPE	Description	Drawing	Annealing	Pickling	2.32	5.13	3.43	DAP
RM	SS WIRE DAP 12.00 MM 304Q	1	2	2	2.32	10.26	6.86	19.44
RM	SS WIRE PP 9.30 MM 204CHQ	2	2	2	4.64	10.26	6.86	21.76
RM	SS WIRE DAP 12.00 MM 304Q	1	2	2	2.32	10.26	6.86	19.44
RM	SS WIRE PP 7.40 MM 316L	2	1	2	4.64	5.13	6.86	16.63
RM	SS WIRE PP 7.40 MM 316L	2	1	2	4.64	5.13	6.86	16.63
RM	SS WIRE PP 7.37 MM 304L	1			2.32	-	-	2.32
RM	SS WIRE PP 7.37 MM 304L	1			2.32	-	-	2.32
	COST DRIVERS: THICKNESS OF THE WIRE CAN BE A COST DRIVER. COST DRIVER IS THE CAUSAL FACTOR THAT INFLUENCES THE LEVEL AND PERFORMANCE OF ACTIVITIES AND THE RESULTING CONSUMPTION OF RESOURCES , ELAPSED TIME AND QUALITY.							

Information about activities – why important?

Department view vis-à-vis Activity view

Department view is a functional or silo view and not a systemic view.

Department Engineering: This function/department was in designing new products speed to market and also to the company's ability to make improvements to existing products (in terms of manufacturability and marketability). Specifically comprising of Product design engineers.

Activities performed by product design engineers besides designing products was data entry, making copies, sending faxes, attending lots of long meetings, tracking down files, supplies, paperwork and many more taking away 40% - 50% of their time.

Resource (engineers in this case) efficiency is equivalent to system efficiency.

Information about activities…contd.

Activities can be tagged as under:

Core Activities – mission critical work

Enabling activities – activities that support core activities - opportunities for cost reduction

Attributes for cost drivers, performance measures and non value added can be added to each activity.

The quantum of effort that is required to perform an activity is called cost drivers

A non value added activity is one that *does not* contribute to the value received by the customer.

ABC provides as important link between strategy and operations. It reveals activities that are currently in place to execute strategy. A review of these activities helps identify those activities that are not supporting strategy and allows work effort to be redirected to activities that contribute to strategic success.

Management Buy in

1.Client realized that it is costlier to do DAP in house, ideally they should get it outsourced.

2. The have realized that on many occasions they do activities like polishing etc. more than once as per customer needs but do not charge the customer for that.

3. They have a policy only to take bulk and repetitive orders instead of one time orders. This is based on hunch and not data, ABC is now providing them with insights that if there is idle capacity it makes sense to not let go of such one time orders.

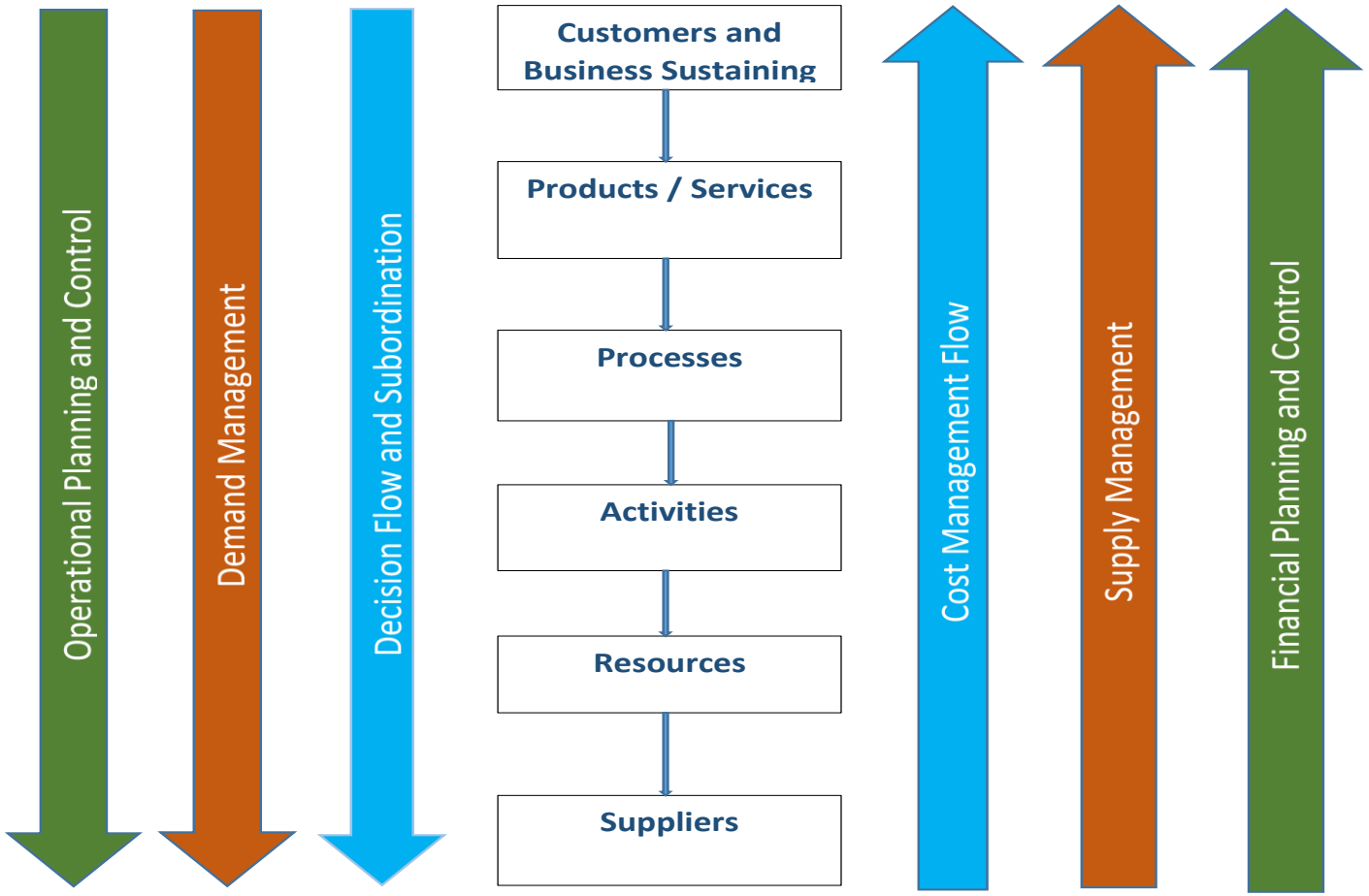
4. Since ABC needs Data they have realised that there are many activities that are still kept in notebooks and have not been entered into their ERP systems.

5. Capacities are lying idle occupying space.

6. They are now in the process of upgrading their ERP and transforming operations to increase throughput.

Operational Data and Cost Measurement Data Flow

(In each decision domain, data is needed for operational planning and cost measurement)



Questions

Thank you

DEVARAJAN SWAMINATHAN AND CO.

9892860244; CMADEVARAJAN@GMAIL.COM

WWW.CMA-DS.COM