4.InformationandSystemConcepts

Information:Informationisdatathathasbeenconvertedintoamoreusefulorintelligibleform.It isthesetofdatathathasbeenorganizedfordirectutilizationofmankind,asinformationhelps humanbeingsintheirdecisionmakingprocess.Examplesare:TimeTable,MeritList,Reportc ard,
Headedtables,printeddocuments,payslips,receipts,reportsetc.Theinformationisobtained by
assemblingitemsofdataintoameaningfulform.Forexample,marksobtainedbystudentsand theirrollnumbersformdata,thereportcard/sheetisthe.information.Otherformsofinformatio n
arepay-slips,schedules,reports,worksheet,barcharts,invoicesandaccountreturnsetc.Itm ay benotedthatinformationmayfurtherbeprocessedand/ormanipulatedtoformknowledge. Informationcontainingwisdomisknownasknowledge.

TypesOfInformation

Information,asrequiredatdifferentlevelsofmanage¬mentcanbeclassifiedasoperational, tacticalandstrategic.

1.Operationalinformation:
Operationalinformationrelatestotheday-to-dayoperationsoftheorganisationandthus,is usefulinex¬ercisingcontrolovertheoperationsthatarerepetitiveinnature.Sincesuchactiviti es
arecontrolledatlowerlevelsofmanagement,operationalinformationisneededbythelower management.

Forexample,theinformationregardingthecashpositiononday-to-daybasisismonitoredand controlledatthelowerlevelsofmanage¬ment.Similarly,inmarketingfunction,dailyandweekl y

salesin¬formationisusedbylowerlevelmanagertomonitortheperform¬anceofthesalesforce.

Itmaybenotedthatoperationalinforma¬tionpertainstoactivitiesthatareeasilymeasurableby specificstandards.Theoperationalinformationmainlyrelatesto currentand historical performance,andisbasedprimarilyoninternalsourcesofdata.Thepredictiveelementin operationalinformationisquitelowandifatallitisthere,ithasashorttermhorizon.

2.Tacticalinformation:

Tacticalinformationhelpsmiddlelevelman¬agersallocatingresourcesandestablishingcontrols toimplementthetoplevelplansoftheorganisation.Forexample,informationregardingthe alternativesourcesoffundsandtheirusesintheshortrun,opportunitiesfordeploymentofsurplus fundsinshort-termsecurities,etc.mayberequiredatthemiddlelevelsofman¬agement.

Thetacticalinformationisgenerallypredictive,focusingonshort-termtrends.Itmaybepartly currentandpartlyhistori¬cal,andmaycomefrominternalaswellasexternalsources.

3.Strategicinformation:

Whiletheoperationalinformationisneededtofindouthowthegivenactivitycanbeperformed better,strategicinformationisneededformakingchoicesamongthebusi¬nessoptions.

Thestrategicinformationhelpsinidentifyingandevaluatingtheseoptionssothatamanager makesinformedchoiceswhicharedifferentfromthecompetitorsandthelimita¬tionsofwhatt he rivalsaredoingorplanningtodo.Suchchoicesaremadebyleadersonly.

Strategicinformationisusedbyman¬agerstodefinegoalsandpriorities,initiatenew programmesanddeveloppoliciesforacquisitionanduseofcorporateresources.Forexample , informationregardingthelong-term needsoffundsforon-goingandfutureprojectsofthe companymaybeusedbytoplevelmanagersintakingdecisionregardinggoingpublicor approachingfinancialinstitutionsfortermloan.

Strategicinfor¬mationispredictiveinnature,reliesheavilyonexternalsourcesofdata,hasa long-term perspective,andismostlyinsummaryform.Itmaysometimesinclude'whatif' scenarios.However,thestrategicinformationisnotonlyexternalinformation.

Forlong,itwasbelievedthatstrategicinformationarebasicallyinformationregardingthe externalenvironment.However,itisnowwellrec¬ognisedthattheinternalfactorsareequally responsibleforsuc¬cessorfailuresofstrategiesandthus,internalinformationisalsorequired for strategicdecisionmaking.

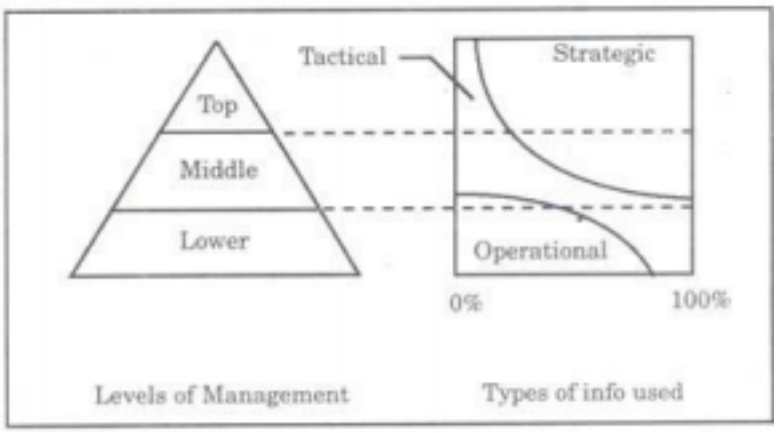

Fig. 1.2 Types of information and levels of management

Itmayberememberedthateachtypeofinformationhasitsroletoplayinmanagerial effectiveness.Eachtypeofinformationisneededwithvaryingdegreebythemanagersatall levels.Thus,apartofoperationalinformationmaybeusedevenbythechiefexecutiveof¬ficero f acompany.

Thedifferenceliesintheproportionofeachtypeofinformationinthetotalinformationneedsof managersatdifferentlevelsofmanagerialhierarchy.

InformationQuality:

Qualityofinformationisanimportantconcept.Informationqualityisamulti-attributeconcept.If theattributesthatdefinequalityofinformationareofgoodqualityorofhighvaluethenthe informationissaidtohavegoodquality.Theattributesofqualityofinformationare:

1. *Timeliness-Thespeedatwhichtheinformationisreceived.Normally,fastertheinformationbett er isitsquality.*

2. Appropriateness - is the suitability matching of the receiver and the information, more the suitability of the information to the receiver, better its quality.
3. Reliability - the reliability of information is a key attribute of quality. Only if the information is reliable is it of any use. The understanding of reliability comes from past experience, the standing/reliability of the source, the methodology adopted to acquire and process the information and the channel of delivery.
4. Accuracy - is the correctness of the information. Normally, the higher the accuracy of the information, the better is its quality.
5. Completeness - is the measure of comprehensiveness. It is required to ensure that the information provided gives the complete picture of reality and not a part of the picture.
6. These attributes define the quality of information. A high score on each of the attributes indicate that the quality of information is good.

Dimensions of Information

Information may be understood to have various dimensions. However, for our purpose, the following dimension of information will be of interest.

i) Economic dimension,

ii) Business dimension, and

iii) Technical dimension.

Economic Dimension

This dimension of information refers to the cost of information and its benefits.

Cost of information

It may include

i) Cost of acquiring data,

ii) Cost of maintaining data,

iii) Cost of generating information, and

iv) Cost of communicating information.

The cost is related to the response time required to generate information and communicate it. For systems with low response time, cost is high.

Value of information

Before a particular piece of information is acquired, decision-makers must know its value. In decision theory, the value of information is the value of the change in decision behavior because of the information. The change in the behavior due to new information is measured to determine the benefits from its use. To arrive at the value of new information, the cost incurred to get this information is deducted from the benefits.

BusinessDimension

Thisdimensionrelatestothebusinessangleofinformation.Itsvaluetotheorganization, sustainabilityofgettingtheinformationfromamanagerialstandpoint,accuracyandreliabilityo f theinformation,scopeand appropriatenessoftheinformationaretheparametersfor understandingthebusinessdimensionoftheinformation.Thisdimensionhasgotmoretodowi th the'what'oftheinformationratherthanthe'how'.Businessdimensionofinformationcanhavet he followingparameters:

1.Timedimension-informationhastobetimelytobeofanyvalue.Thebasicutilityofinformation withinanorganizationisindecision-making.Iftheinformationisnottimelythenthedecisions derivedoutofitwillhavepoorquality.Hence,timeisanimportantdimensionofinformation.
2.Accuracydimension-informationhastobeaccuratetosatisfytheuser.Againthisisan importantdimensionasinaccurateinformationleadstobaddecision-making.
3.Reliabilitydimension-informationhastobereliablesothatusershaveconfidence.
4.Appropriatenessdimension-informationmustberelevanttothereceiver.Itmustbeappropriat e tohisneeds.
5.Scopedimension-informationshouldbewithinthescope.
6.Completenessofcontentdimension-informationshouldbecompleteandnotinbitsandpieces.

TechnicalDimension

Thetechnicaldimensionrelatestotheinformationgathering,summarizing,storingandretriev al, analysisandcostaspectsofinformation.Itcanhavethefollowingparameters:

1.Informationgathering-themeansofcapturingthedataandstoringit

2.Analysismethodology-thedataprocessingmethodology

·Costsofinformation–

1.Costofdataacquisition-thecostofdataacquisitionfromthepointofviewoftimeandresource (technical)costs.Apieceofdataissupposedtobecostlytoacquireifsay,itisrecoveredfroma secondarysourceafterprocessingitforalongtime.Ontheotherhandthecostofacquisitionof dataislowforsuchcaseswhen(say),thecustomerishimselfputtingsuchdataintothesystem (likeinthecaseofATMsoronlinebanking,thesystemscostofacquiringdataisverylowissuch cases)
2.Costofdatamaintenance-isthecostofmaintainingthedataintermsoftechnicalcostsof spaceandefforts(technical)inmaintainingit.Adatasourcethatrequiresalotoftechnical effortslikeindexing,etc.,andrequireshugestorage(forsaystoringimages,etc.),issaidtobe morecostly.
3.Costofdataaccess-isthecostintermsofresourcerequirements(bothprocessingandnetwork) foraccessingthedata.Datathatcanbeaccessedafterutilizingalotof CPUandnetwork resourcesissaidtobecostlytoaccess.

System:ADefinition,KindsOfDefinition

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“Informationsystems(IS)isthestudyofcomplementarynetworksofhardware and softwarethatpeopleandorganizationsusetocollect,filter,process,create,and distributedata.”

- *“Informationsystemsarecombinationsofhardware,software,andtelecommunications networksthatpeoplebuildandusetocollect,create,anddistributeusefuldata,typically inorganizationalsettings.”*

- *“Informationsystemsareinterrelatedcomponentsworkingtogethertocollect,process, store,anddisseminateinformationtosupportdecisionmaking,coordination,control, analysis,andviualizationinanorganization.”*