Innovation matrix for new Ideas

Special Project
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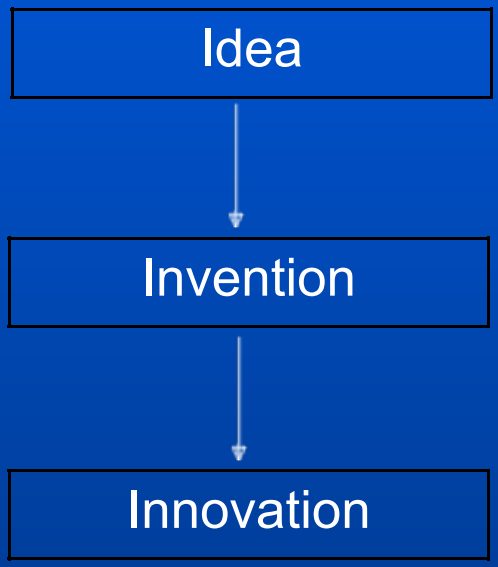
Innovation

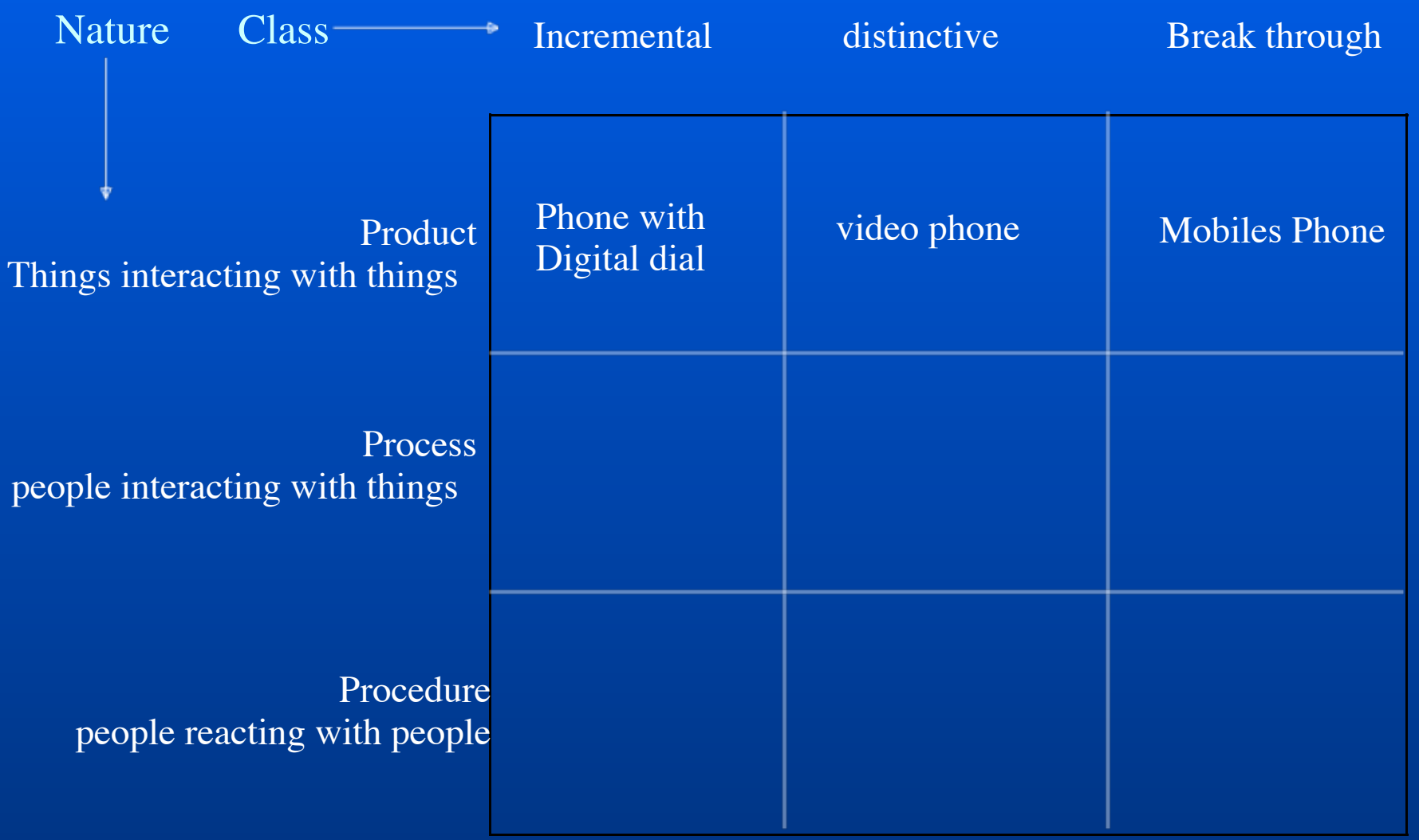
"Invention is the instantaneous creation of an idea, innovation is the process that converts that idea to marketable product and takes it to market place"

"Innovation may be product, a process, a method or a system
but it is more than an idea: it has to be converted from idea to action."



Innovation

The innovation Grid



Creativity

Three components of Creativity

Expertise:

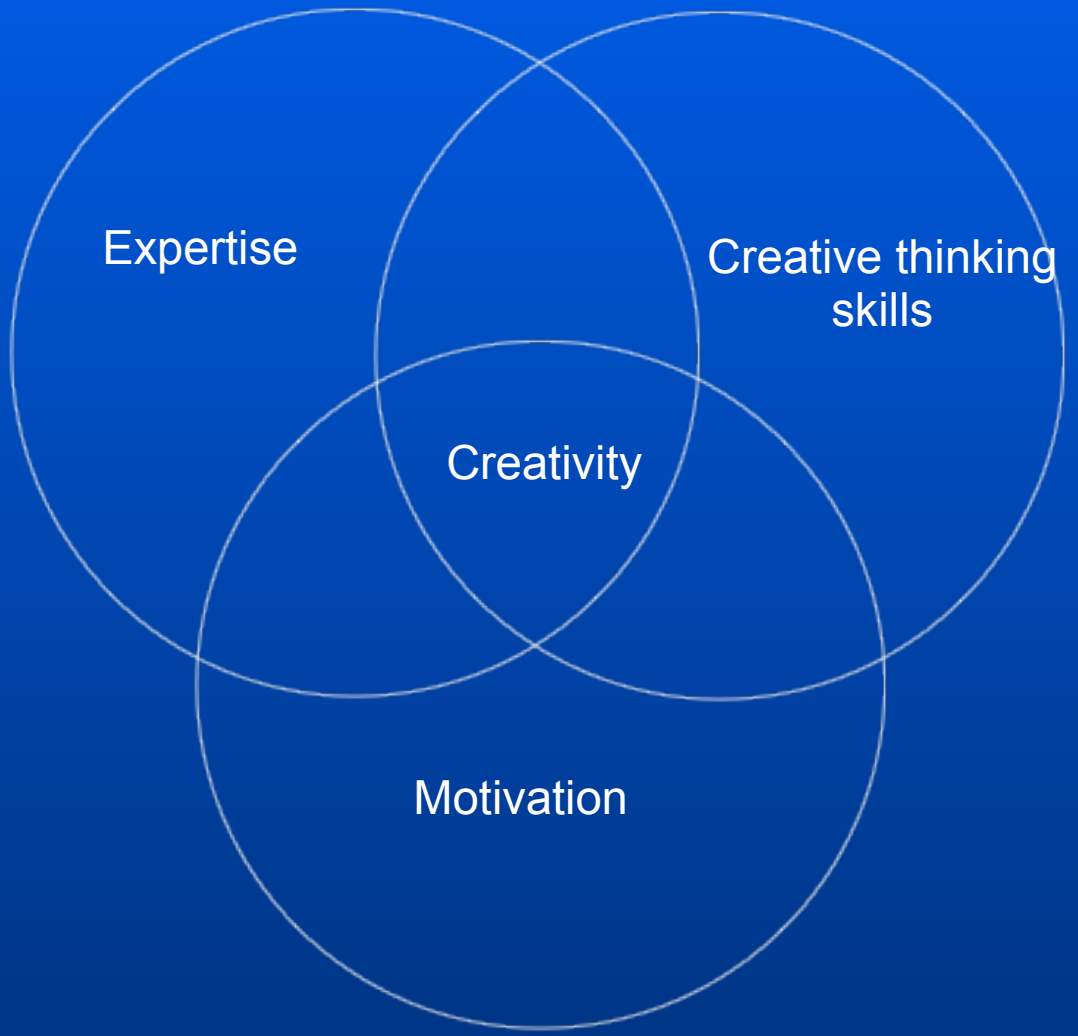
expert in technical, procedural and intellectual areas.

Motivation:

External or internal motivation

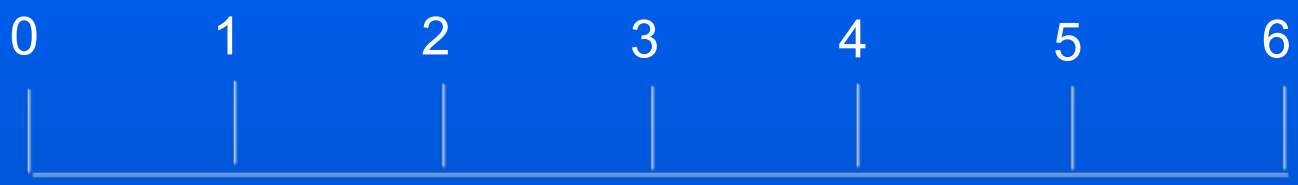
Creative thinking skills :

flexibility and imagination to approach problems.



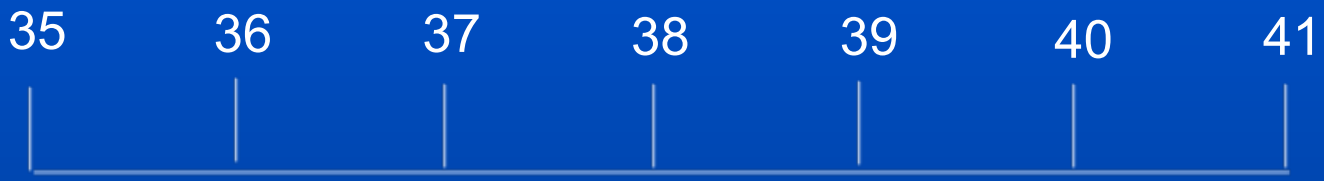
Ranking scales

Ratio scale: Normal scales



Ratio scale 3:1=6:2

Interval scale :Subjective assessment



Interval equal 38-36=40-38

Ordinal scale : sequence of order

Numbers in ascending order e.g. 5 greater than 4

Ref: “How Designers Think”

Ranking methods

Direct Ranking

Innovation factors	Direct ranking	Weights
Color	3	0.5
Shape	1	0.16
Size	2	0.33
Total	6	

Ranking is done in order of importance

When the number of factors is not large

Ranking methods

Pair wise comparison

Innovation factors	Color	Shape	Size	Totals	Weights
Color	---	5	3	8	0.44
shape	1	---	5	6	0.33
size	3	1	----	4	0.22
			Total	18	

The factors are compared one to one

Number of factors more

Advantage: Easier to compare two parameters instead of all of them together

What is QFD?

Quality Function Deployment (QFD) is a systematic process for motivating a
business to focus on its customers

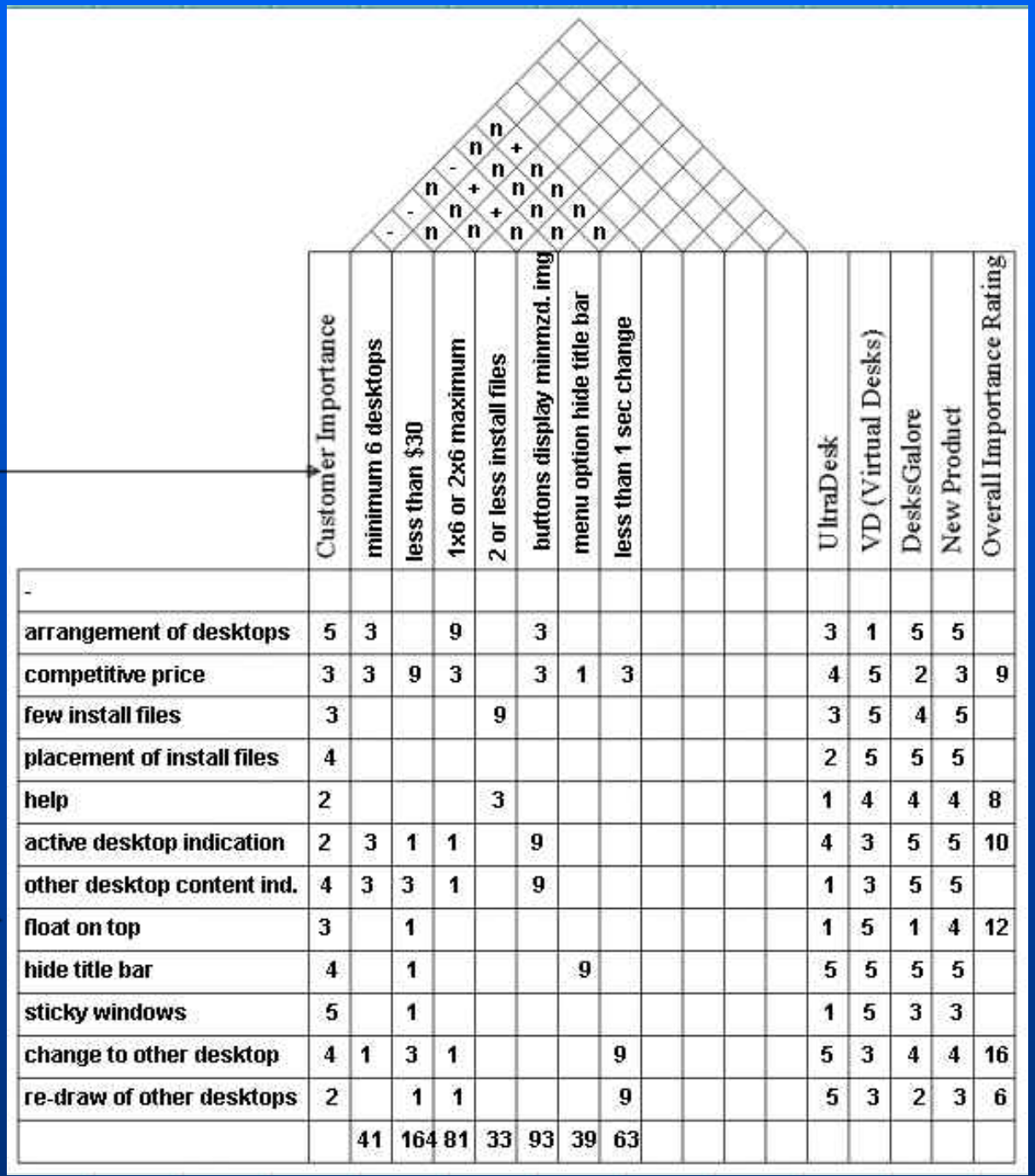
It identifies and resolves issues involved in providing products, processes, services
and strategies considering customers satisfaction.

QFD matrix

QFD matrix

Company's factors

Customer requirements



-	Customer Importance	minimum 6 desktops	less than $30	1x6 or 2x6 maximum	2 or less install files	buttons display minmzd. img	menu option hide title bar	less than 1 sec change					UltraDesk	VD (Virtual Desks)	DesksGalore	New Product	Overall Importance Rating
arrangement of desktops	5	3		9		3							3	1	5	5	
competitive price	3	3	9	3		3	1	3					4	5	2	3	9
few install files	3				9								3	5	4	5	
placement of install files	4												2	5	5	5	
help	2				3								1	4	4	4	8
active desktop indication	2	3	1	1		9							4	3	5	5	10
other desktop content ind.	4	3	3	1		9							1	3	5	5	
float on top	3		1										1	5	1	4	12
hide title bar	4		1				9						5	5	5	5	
sticky windows	5		1										1	5	3	3	
change to other desktop	4	1	3	1				9					5	3	4	4	16
re-draw of other desktops	2		1	1				9					5	3	2	3	6
		41	164	81	33	93	39	63									

Innovation factors

The innovation factors are

Company's point of view

1. Lowering cost
2. Manufacturing techniques
3. Technology
4. Distribution
5. Miniaturization
6. Marketing
7. Materials
8. New management
9. New working environment
10. Assembly
11. packaging
12. advertising
13. reducing number of parts
14. longer life of product

Customer's point of view

1. User interface
2. Attributes
3. New area of application
4. Packaging
5. User segment
6. After sales Services
7. Aesthetics

Innovation matrix

What is innovation matrix?

It's a new concept in which one can get innovation index for new ideas generated as compared to the products present in that product category.

Use of this matrix?

(1) We can compare the New idea with present product. In which innovation factor , the new idea is lagging behind

(2) Innovation matrix shows how much innovation has happened as compared to other products

(3) It shows the innovation factors which are lagging behind the top concepts

4 Set of matrices can be developed for particular product ideas in various cost and user category range.

5 using the top concept in innovation matrix and the new idea rankings-QFD matrix can be developed which again shows the important innovation factors in user's point of view and company's point of view.

6 The innovation matrix directly reflects the customer voice.

Innovation matrix

Problems faced in generating matrix

Main aim was to generate a matrix for generic products for example electronics product

1. Different products like television, mobile, cd player have different attributes, different features, different functions and targeted for different user segment. It becomes difficult to compare and rank on same level

2. User cannot compare mobile phone with television set for any innovation factors like aesthetics as they are two different products.

3. some innovation factors like aesthetics may play important role in mobile rather than in television which is very functional product.

4. While choosing product users have different weightage for different innovation factors for different products.

5. The cost of television approximately starts from Rs 15000 to Rs 40000 and more than that while in mobile the cost ranges from 4000 Rs to 20000 Rs .So television of 15000 Rs and mobile of Rs 15000 may have been targeted for different market sectors which again becomes difficult to compare.

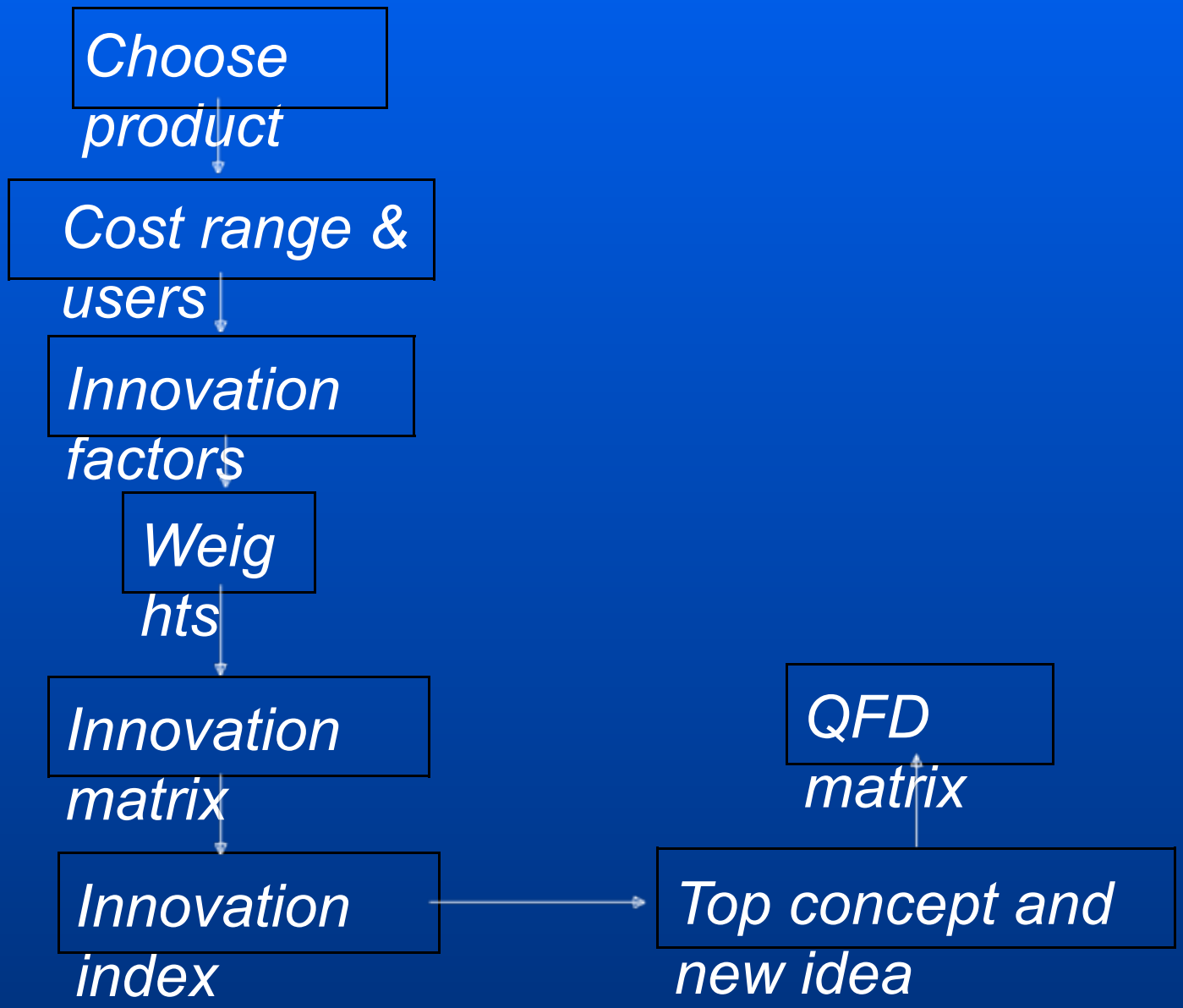
Innovation matrix

Focus to create innovation matrix

1. Matrix will be developed for particular product for example mobile.
2. Cost range will be considered that is Rs 5000.
3. Particular user group will be considered for example youth segment.

Innovation matrix

Method



Innovation matrix

Mobiles

Since last five years the mobiles have undergone lot of innovation in the area of technology, form, materials, miniaturization etc.

Some considerations to be taken :

Mobiles come in the cost range of Rs 5000 to Rs 15000 which are targeted for different users sectors. Different users will give different preference to innovation factors while choosing them. Mobiles will be taken from same price range.

one category of users will be considered because again different users will have different priorities.

Mobiles of cost range around Rs 5000 will be considered also the user segment considered will be youth segment.

Innovation matrix

Mobiles

Mobile 1

Siemens C35i

Mobile 2

Nokia 3110

Mobile

Samsung S600

Mobile

Sony t100

Innovation matrix

Mobiles

Idea 1

Innovation matrix

Mobiles

Innovation factors identified

Customer's view	*Company's view*
Color	Manufacturing
Shape	Assembly
Size	Material
Grip	
Buttons	

Innovation matrix

Pair wise comparison

User no 1

	color	shape size	grip	button	Total	weight		Direct ranking
color		0	1	1	1	5	8	0.131	3
Form/shape		5	0	1	1	5	12	0.197	4
size		5	5	0	3	5	18	0.295	5
grip		5	5	3	0	5	18	0.295	5
buttons		1	1	1	1	0	5	0.082	2
					Total		61		

Innovation matrix

Weights for innovation factors

user number →	1	2	3	4	5	6	7	8	9	10	Total	average 1
color	0.131	0.133	0.067	0.133	0.150	0.200	0.150	0.133	0.183	0.100	1.381	0.138
Form/shape	0.197	0.200	0.267	0.250	0.200	0.217	0.267	0.300	0.150	0.300	2.347	0.235
size	0.295	0.300	0.200	0.233	0.117	0.200	0.200	0.267	0.150	0.267	2.228	0.223
grip	0.295	0.300	0.333	0.317	0.317	0.283	0.283	0.200	0.283	0.167	2.778	0.278
buttons	0.082	0.067	0.133	0.067	0.217	0.100	0.100	0.100	0.233	0.167	1.265	0.127

user number →	11	12	13	14	15	16	17	18	19	20	Total	average 2
color	0.217	0.133	0.250	0.267	0.167	0.167	0.217	0.200	0.133	0.167	1.917	0.192
Form/shape	0.217	0.233	0.200	0.100	0.250	0.233	0.267	0.233	0.233	0.300	2.267	0.227
size	0.150	0.267	0.267	0.267	0.133	0.267	0.233	0.150	0.183	0.167	2.083	0.208
grip	0.250	0.233	0.100	0.217	0.283	0.217	0.200	0.283	0.267	0.200	2.250	0.225
buttons	0.167	0.133	0.183	0.150	0.167	0.117	0.083	0.133	0.183	0.167	1.483	0.148

Aveg1	Avg2	Total	Weight
0.138	0.192	0.330	0.165
0.235	0.227	0.461	0.231
0.223	0.208	0.431	0.216
0.278	0.225	0.503	0.251
0.127	0.148	0.275	0.137

Innovation matrix

Calculating Innovation Index

user 1

Preference 4

Weights		siemens c35 Mobile1	nokia3310 Mobile2	Samsung s600 Mobile3	Sony Mobile4	Idea1	Remark
0.16	color	7	8	4	8	6	color
0.23	shape	6	8	6	7	6	shape
0.22	size	7	6	7	7	7	
0.25	grip	7	6	6	6	8	
0.14	button	6	7	6	7	6	button
innovation rank		6.63	**6.93**	5.89	6.91	**6.72**	

User gave preference to Mobile number 4

Idea gets innovation index 6.72

Top concept gets 6.93

Innovation factors –Color, shape, Button got less ranking for new idea compared to top concept

Innovation matrix

Calculating Innovation Index

Out of 20 user rankings

Top concepts from innovation matrix and user preference

	From inno matrix	From users
Mobile 1	7	7
Mobile 2	3	4
Mobile 3		
Mobile 4	10	9

QFD matrix

How it can be used in innovation matrix??

1. As an extension to innovation matrix results
2. Relationship between innovation factors in customer's view and company's view
3. Can be used as confirmation to results drawn from innovation matrix

QFD matrix in Innovation matrix

Use of QFD matrix as an extension to innovation matrix

Company's requirements → / Customers view ↓	manufacturing		assembly		material		Total	Direct	Top mobile	idea	Ratio	Weights	Ab.weight	Demanded
	X	X*DW	Y	Y*DW	Z	Z*DW		Ranking(A)		(B)	C=A/B	(W)	AW=A*B*W	Weight DW
color	9	252	3	84	9	252	588	5	8	6	1.33	0.16	1.10	28
shape	9	261	3	87	1	29	377	5	8	8	1.00	0.23	1.15	29
size	1	14	3	42	1	14	70	3	7	8	0.88	0.22	0.57	14
grip	3	66	9	198	9	198	462	4	7	8	0.88	0.25	0.88	22
buttons	9	63	9	63	9	63	189	2	7	7	1.00	0.14	0.27	7
Total		656		474		556						Total	3.97	

1 — Possible correlation

3 — Some correlati

9 — Strong correlati

QFD matrix in Innovation matrix

From innovation matrix

inno factor	Remark
color	18
shape	9
size	4
grip	5
buttons	10

From QFD matrix

Color is important innovation factor in customer's view

Manufacturing is important innovation factor in company's view.

QFD matrix in Innovation matrix

From innovation matrix

inno factor	Remark
color	18
shape	9
size	4
grip	5
buttons	10

From QFD matrix

Color is important innovation factor in customer's view

Manufacturing is important innovation factor in company's view.