

THE VOICE OF THE CUSTOMER

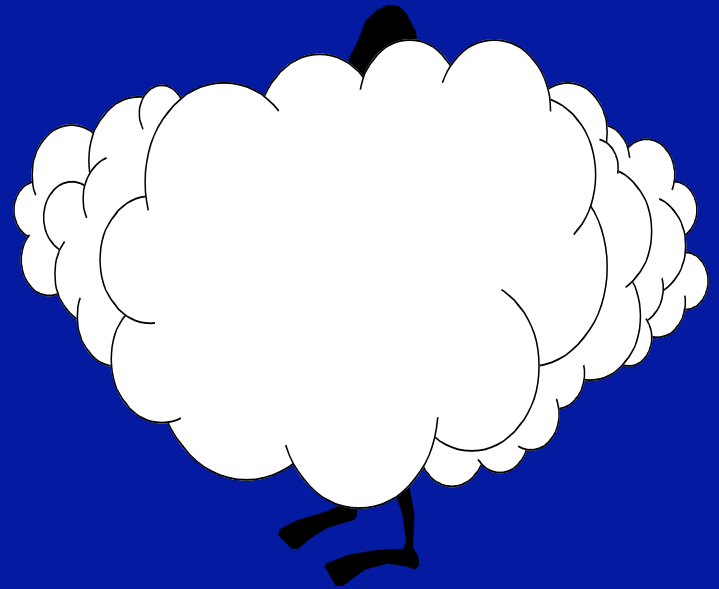
PART TWO

NEW YORK CITY SPIN
B OF A BUILDING
NEW YORK CITY
APRIL 1, 2009

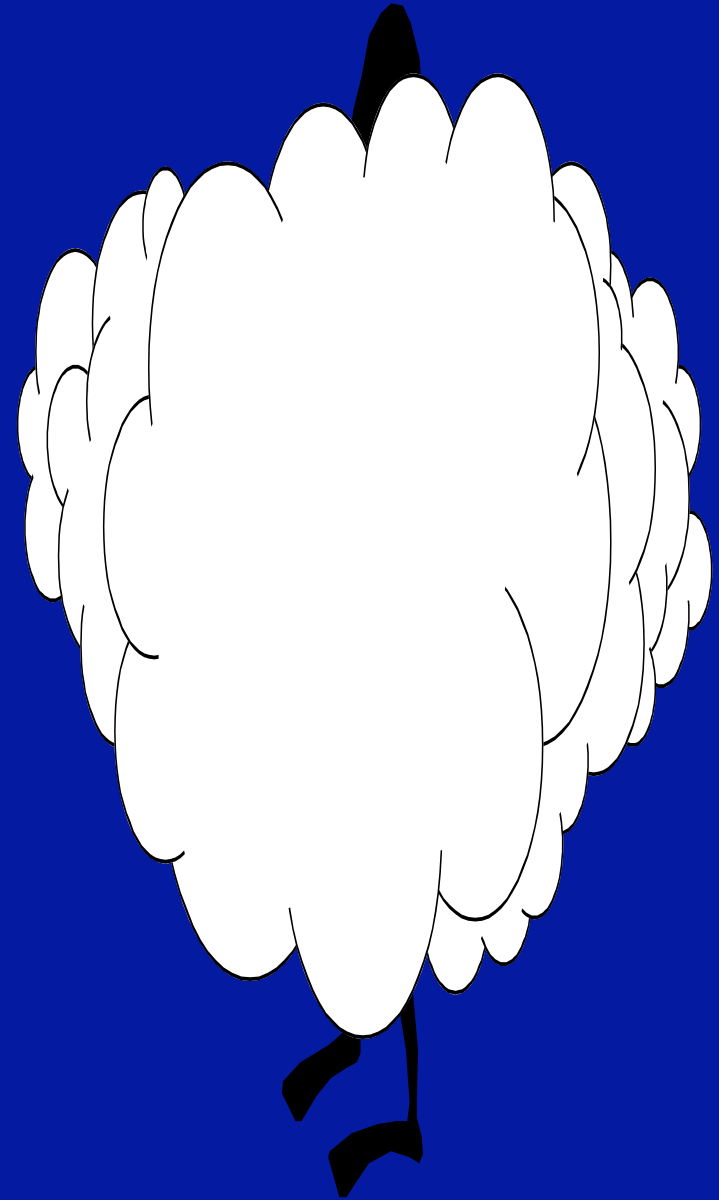
Donald C. Gause, Professor
Thomas J. Watson School
Binghamton University
Principal, Savile Row, LLC
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... but

Just who IS the
customer?

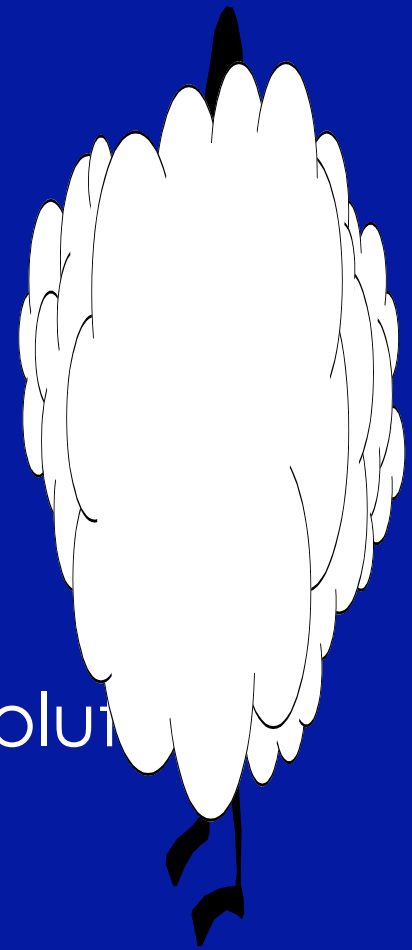


... actually
Who ARE the
customers?



And besides customers:

- ❑ Don't know it all.
- ❑ Suffer from their own biases.
- ❑ May occasionally pass on these biases to their designers.
- ❑ Have been known to define the solution rather than the problem.





HOW LONG
should an 11
story
apartment
building last?

PRUITT-IGOE PUBLIC HOUSING



PRUITT-IGOE PUBLIC HOUSING



PRUITT-IGOE PUBLIC HOUSING



DEFENSIBLE SPACE

“A surrogate term for the range of mechanisms –

- + real and symbolic barriers*
- + strongly defined areas of influence*
- + improved opportunities for surveillance*

These combined factors bring an environment under the control of its residents.

Defensibility adds to the enhancement of lives by providing security for families, neighbors, and friends.”

Oscar Newman, architect, city planner, author of *Creating Defensible Space*.

ONCOLOGY CLINIC

“The problem is that our patients are having to wait too long to see their doctors. Could you do a simulation study of the clinic, find out where the bottle necks are and recommend a solution?”

Dr. A. Browne, M.D., Clinic Director

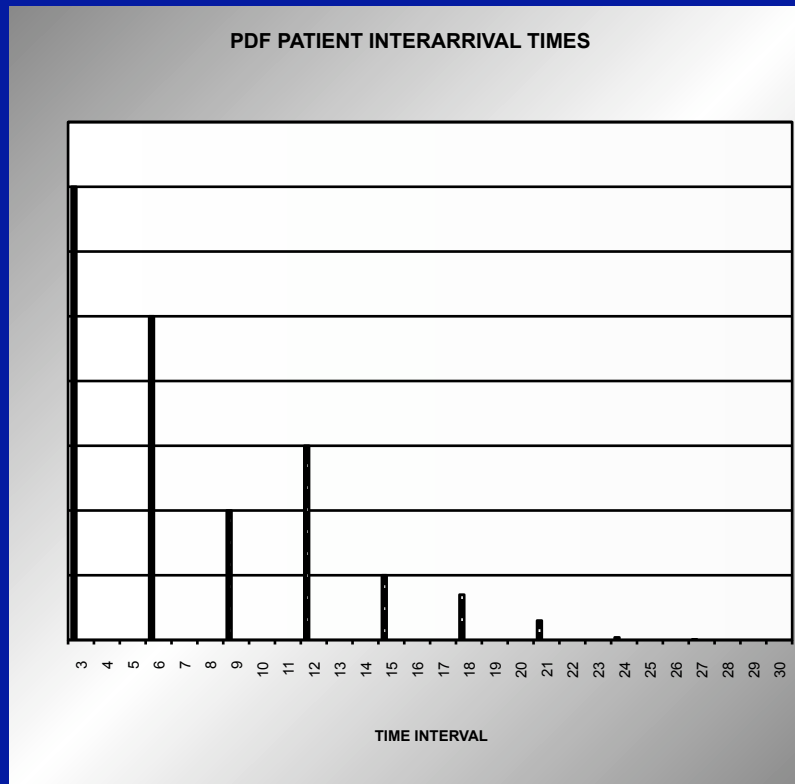
A few facts of the case:

- Dr. Browne is the Clinic Director.
- He is active and well-known in the community.
- There are three other Board Certified oncologists in the Clinic.
- Patients come, by appointment, regularly to the Clinic.
- Patients come within a 75 mile radius.

Strategy and discoveries

SIMULATION SIDE

LEFT BRAIN



USER DRIVEN SIDE

right brain

- Patients were waiting too long
- Had to wait to give blood
- Had to wait to see doctor
- Not enough doctors
- Had only old magazines
- Only medical magazines
- Cigarette machines in lobby
- Need more than one doctor.

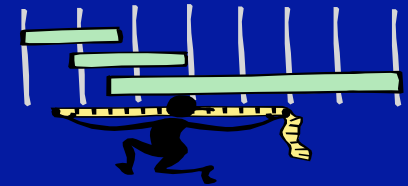
Oncological remedies

- ⚡ Place the doctors' photos along with their biographical sketches in the waiting room.
- ⚡ Stop taking appointment patients on a first-come, first-served basis.
- ⚡ Lose the cigarette machines.

Universal Furniture Design I

Design a piece of furniture that can be manufactured by individuals who have physical or mental impairments, disabilities or conditions. The piece must satisfy the following requirements:

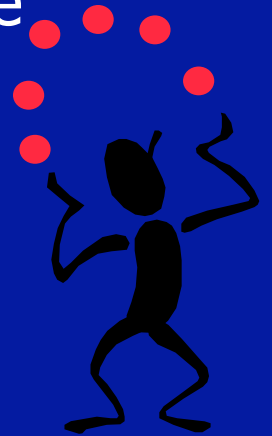
- It must sell for under twenty dollars.
- It can be shipped unpackaged without fear of damage.
- It can serve as a chair, footstool, room divider, coffee table, book shelf, and end table.



Universal Furniture Design II

Design a piece of furniture that can be manufactured by individuals who have physical or mental impairments, disabilities or conditions. The piece must satisfy the following requirements:

- It must sell for under twenty dollars.
- It can be shipped unpackaged without fear of damage.
- It can be used to sit on, prop feet on, divide rooms, put drinks, magazines, books, and lamps on.

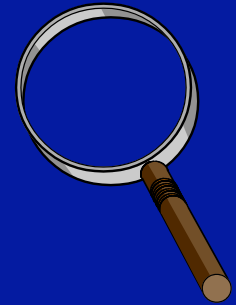


THE SOCIAL DIMENSION

Design a piece of furniture that can be manufactured by individuals who have physical or mental impairments, disabilities or conditions. The piece must satisfy the following requirements:

- It must sell for under twenty dollars.
- It can be shipped unpackaged without fear of damage.
- **It can serve as a chair, footstool, room divider, coffee table, book shelf, and end table.**
- **It can be used to sit on, prop feet on, divide rooms, put drinks, magazines, books, and lamps on.**

THE SOCIAL DIMENSION



RESULTS

NAME

FUNCTION

(chair, ...)

(sit on, ...)

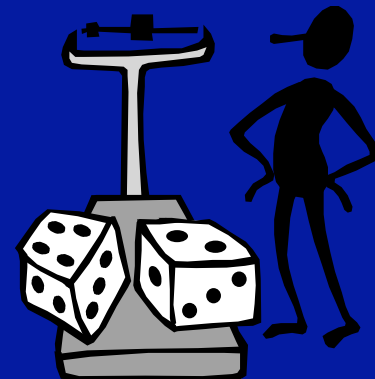
* Social behavior

?

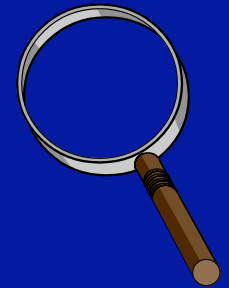
?

* Presentations

* Highly innovative



THE SOCIAL DIMENSION



RESULTS

NAME

FUNCTION

(chair, ...)

(sit on, ...)

* Social behavior

Contentious

Frivolous

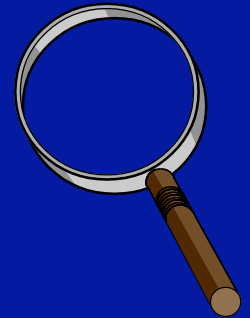
* Presentations

?

* Highly innovative



THE SOCIAL DIMENSION



RESULTS

NAME

FUNCTION

(chair, ...)

(sit on, ...)

* Social behavior

Contentious

Frivolous

* Presentations

3 out of 10

10 out of 10

* Highly innovative

?

?



THE SOCIAL DIMENSION



RESULTS

NAME

FUNCTION

(chair, ...)

(sit on, ...)

* Social behavior

Contentious

Frivolous

* Presentations

3 out of 10

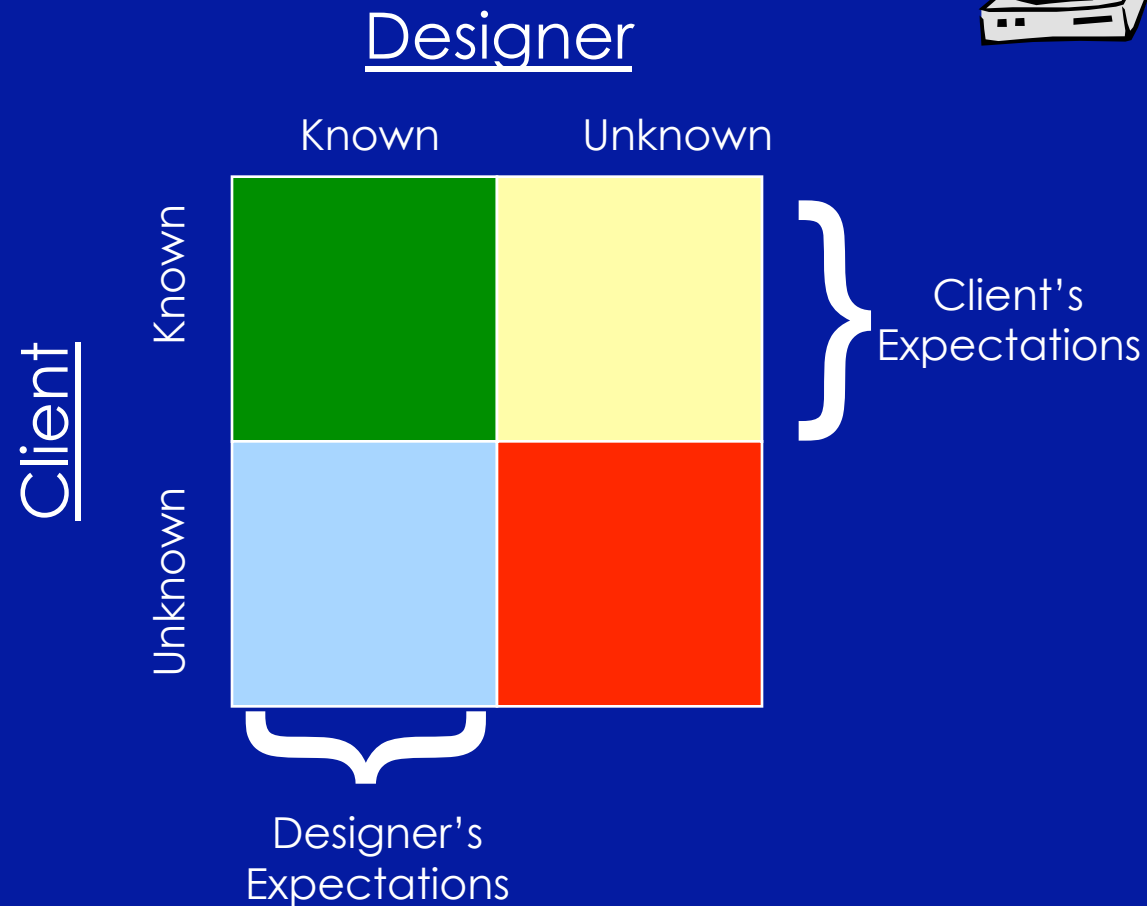
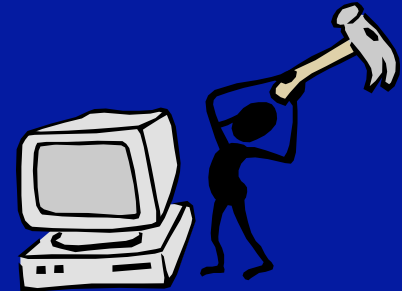
10 out of 10

* Highly innovative

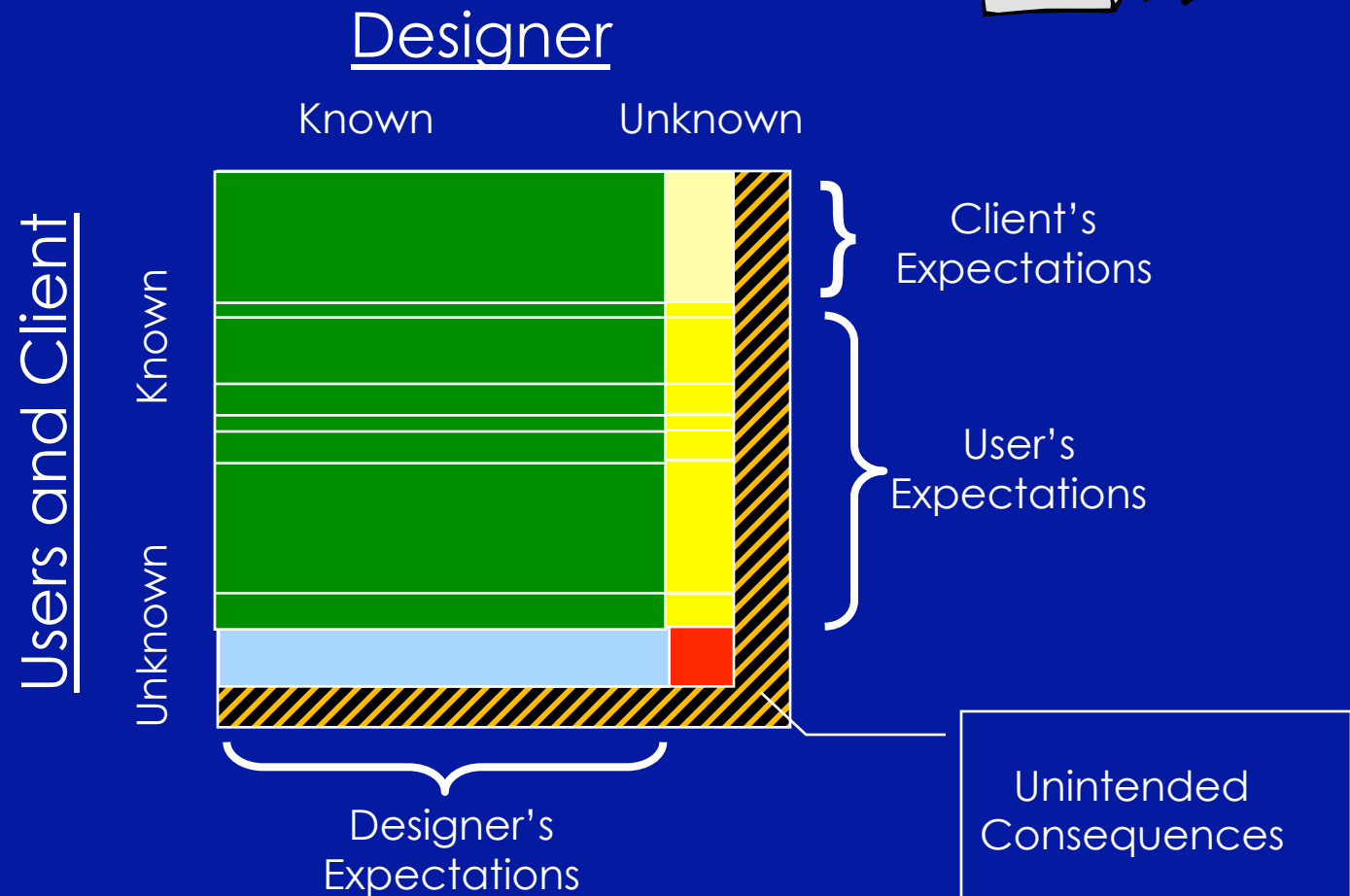
none out of 3

3 out of 10

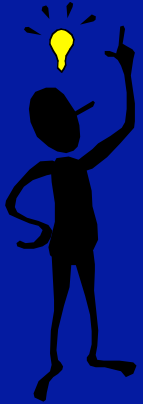
DESIGN WINDOW



DESIGN WINDOW



EXPAND THE CONCEPT OF USER



A user is anyone whose life will be affected in any way by the system about to be designed. This includes the:

- ✦ **CLIENT** - controls project via allocation or resources
- ✦ **DESIGNER** - creates the product specification
- ✦ **END USER** - directly uses the product

Critical thinking and critical users (no more than about 20)

$$* U = (u_1, u_2, u_3, u_4, \dots, u_n)$$

$$* u_i = \begin{cases} + , & \text{Favored (12 to 18)} \\ 0 , & \text{Ignored (hundreds)} \\ - , & \text{Disfavored (at least 3)} \end{cases}$$



* Design possibilities with respect to U : 3^n

AUTOMOTIVE DESIGN

auto electronics systems

- ❑ Expensive radio thieves
- ❑ Lurkers
- ❑ Parallel parkers
- ❑ People who want auto pilots for autos

GLOBAL FINANCE SYSTEM

- ❑ Inexperienced, high turnover, data entry people
 - ✓ Out of range data checking
 - ✓ Index-based data checking
 - ✓ Self-correcting, “Do you mean?” functionality

GLOBAL FINANCE SYSTEM

- ❑ **Hackers** - Interested in bragging rights
- ❑ **Embezzlers** - don't want activity to be known
- ❑ **Disgruntled employees** - want to make the bank look foolish
- ❑ **Corporate terrorists** - Want to call world attention to the greed in banking
- ❑ **Corporate spies** - Want to take advantage of proprietary information.
- ❑ **Stock manipulators** - Want to make money by short term trading, buying long and selling short
- ❑ **"True believer terrorists"** - Want to bring the entire global banking system down

MEDICAL APPLICATIONS

- ❑ Traumatic Brain Injury Clinical Treatment Management
 - ✓ Insurers
 - ✓ Treating physicians
 - ✓ Neuroscientists
 - ✓ Physical therapists
 - ✓ Family members
 - ✓ Malingerers

CLINICAL MEDICAL APPLICATIONS

- ❑ Primary care physician, in her office, is required to approve of emergency patient treatment in trauma but unable to access the patient's clinical record from her office terminal.

A fail soft system is being considered for situations such as this with full tracking and after the fact reporting.



Design is the process of:

FLOATING LIKE A
BUTTERFLY



STINGING LIKE A BEE

FEATURE CLASSES

ESSENTIAL - These are the features that must be present in the product for the product to be recognized by the name it is given. They are part of the *essence* or *essentials* of the product.

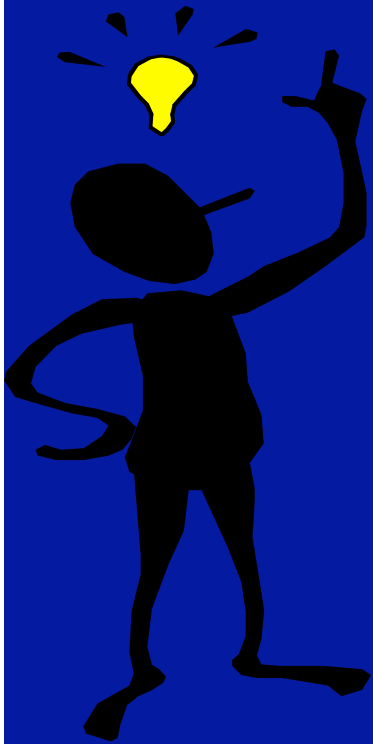


FEATURE CLASSES

EXPECTED - These are the features that have grown to be *expected*, but not necessary, features for the named product. These features tend to be optional features so customers can decide which of these features are important enough to be purchased.



FEATURE CLASSES

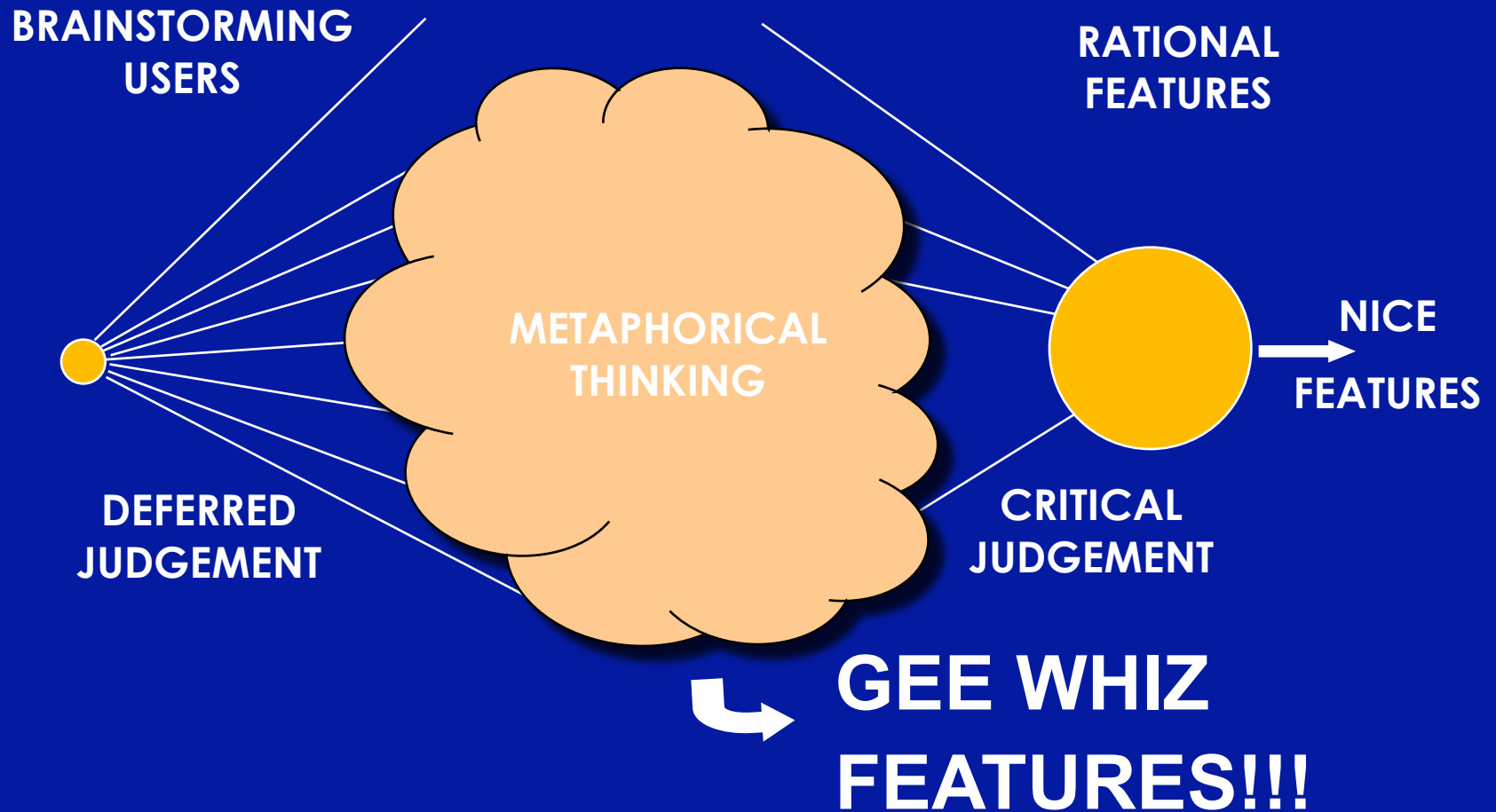


GEE WHIZ - These are the features that are conjured up as some miraculous flash of insight. When customers and competitors, alike, see them, they bang themselves on the head and excitedly mumble “Gee whiz. Why didn’t I think of that?!!!” Even more colorful statements are sometimes uttered.

BRAINSTORMING



BRAINSTORMING



The metaphorical part – *Wubbulous*

EXPLORING WUBBULOUS

- * I don't know what it is.
- * Sounds mysterious.
- * Lots of **wobbul**.
- * Wonderful **wobbul**.
- * **Wobbul** is soft and **maleable**.
- * Wonderfully mysterious.
- * Productively mysterious.
- * Like silly putty.
- * See-thru silly putty.

BACK TO THE PROBLEM

- * What about desktops?
- * **Wubbulous** desktop.
- * **Wubbulous** desktop feature.
- * **Wubbulous** productivity feature.
- * Feature to remove mystery.
- * I never know what files are open or where they are on the screen.

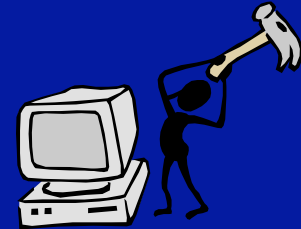
© See-thru files

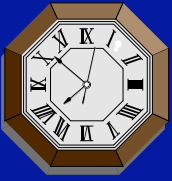


Brainstorming

all conceivable users (desktop - 114 users)

1. **Night cleaning crew**
2. Office workers
3. Supervisors
4. Network administration
5. Kids
6. Students
7. Teachers
8. Machine tool operators
9. Administrators
10. Web masters
11. Web page creators
12. Secretaries
13. Aliens
14. Changelings
15. Klingons
16. **Spies**
17. Bajorans
18. Tennis players
19. Video game players
20. **Hackers**
21. Web surfers
22. **Virus creators**
23. Application developers
24. **Dogs**
25. **Spouses**





REQUIREMENTS TEMPLATE

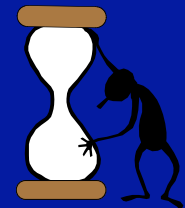
**BUSINESS
REQUIREMENTS**

**SYSTEM
REQUIREMENTS**

**FUNCTIONAL
REQUIREMENTS**

**FUNCTIONAL
SPECIFICATIONS**

- o **Statement of the Problem**
- o **Context-Free Questions**
- o **USERS**
- o **ATTRIBUTES**
- o **Constraints**
- o **Use Scenarios**
- o **Features**
- o **Test Cases**
- o **Functions**
- o **Data Elements**
- o **User Expectations**
- o **Limitations**



Brainstorming

- Likes
- Dislikes
- Users
- Attributes

