IS DESIGN INTUITIVE or CONSTRUCTIVE?

WorldUsabilityDay
UXPA-DC

HELLO!

I am Mohit Gupta

Certainly an Explorer,
Definitely a Traveler,
Probably a Reader, &
Surely Adventurous....

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WHAT IS THIS

Take a quick guess and tell me what it is…

THIS IS LOVE

Heart / Emotion / Emoticon / so on…

THIS IS ~~LOVE~~ DESIGN

This is actually the power of design which influences you to think it as love / heart / emotion / …

1.

WHY ELDERLY?

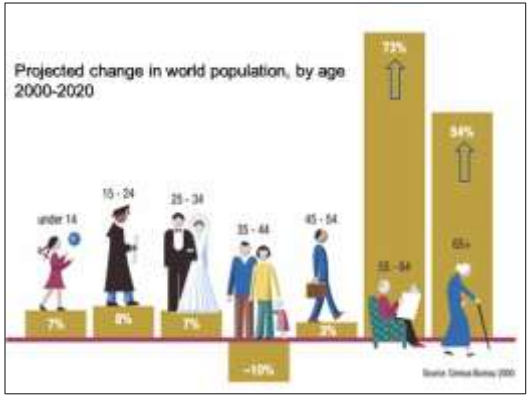
Case study :
Designing for elderly

ELDERLY – A POTENTIAL MARKET

- Elderly Population has **increased eleven fold** between 1900 and 1999 while nonelderly increased only threefold.
- The rate of growth of the elderly population has greatly exceeded the growth rate of the population of the world as a whole.
- The oldest old is the **fastest growing segment** of the elderly population.

PROJECTED ELDERLY POPULATION CHARTS

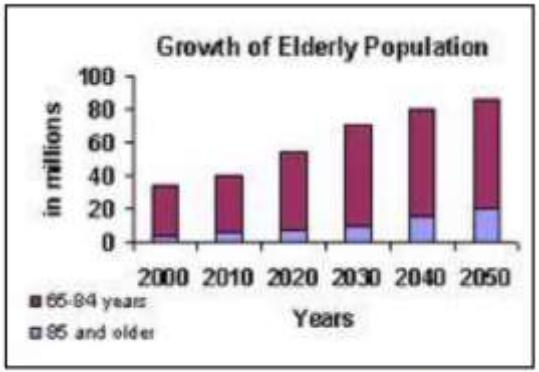
Today, the elderly market is the largest market there has ever been.



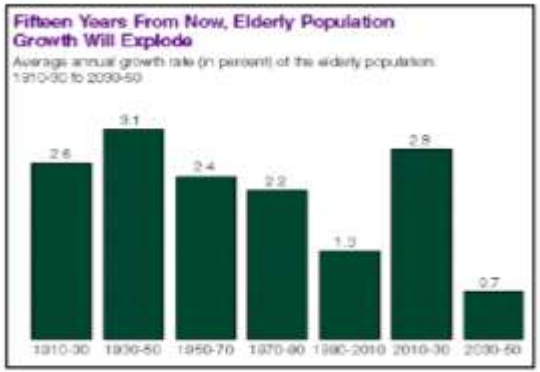
International Comparison of Indicators of Population Aging

Countries	Percent of elderly aged 65+		
	1990	2030	2050
China	5.6	15.7	22.6
India	4.3	9.7	15.1
Korea	5.0	18.1	24.7
Mexico	4.0	19.9	18.6
Canada	11.2	22.6	23.8
France	14.0	23.2	25.5
Germany	15.0	26.1	28.4
Italy	15.3	29.1	34.9
Japan	12.0	27.3	31.8
UK	15.7	23.1	24.9
USA	12.4	20.6	21.4

Source: UN Population Division (1999)



Source: *http://sakinsur.com/press/19.html*



Source: http://horizon.unc.edu/projects/issues/papers.html

ELDERLY MARKET- **COMMERCIAL SIGNIFICANCE**

Early retirement and the **growth of pensions** mean that a sizeable part of the new market is commercially significant and has the money to pay for design.

More People grow elderly now-a-days due to decreasing birth rates and Increasing life spans

NEED FOR A SPECIALIZED PRODUCT

The product should enhance and not degrade their health.

2.

UNDERSTANDING THE USERS

Supported by
Medical Centres & NGOs

WHO ARE **ELDERLY**

MEDICAL CENTRES

- Max HealthCare
- AIIMS
- Standsford Biomedical Centre
- VM Medical College
- IITD Hospital

NGOs

- HelpAge India
- Gharauna Society
- Sukhdham OldAge Homes

THE
CONVEXOCONCAVE
DESIGN APPROACH

PROBLEMS VERSUS OPPORTUNITY AREAS

- Leisure / Social
- Bedroom Safety
- Daily Living
- Bathroom safety
- Mobility
- Fitness

LEISURE/SOCIAL RELATED ISSUES

- Using remote control &other electronic home based appliances
- Problem in signing
- Use of mobile handsets, camera
- Making cash payments
- Problems at reservation counters, post offices, banks and other consumer service authorities
- Lack of communication with outside world

BEDROOM SAFETY RELATED ISSUES

- Turn downs from both sides of bed
- Reach ability of things
- Removing / putting blankets
- Emergency help
- Spitting issue
- Dry mouth often occurs
- Change of bed sheet & user clothes
- Need for bedside bathroom
- Change of postures

DAILY LIVING RELATED ISSUES

- Difficulty in turning door knobs / latches
- Difficulty in eating
- Identifying correct medicine & dosage
- Identifying switch buttons
- Self body lift from relaxed posture
- Problems in reading and writing

MOBILITY RELATED ISSUES

WHEEL CHAIR

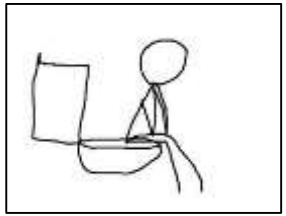
- Customization with respect to living space
- Limits the productivity

PERSONAL MOBILITY VEHICLES / WALKERS

- Usage technique
- Ergonomic and anthropometric requirements
- Designed as what body can do

CANE STICK

- Leaning cane against wall or other surface
- Brings unwanted attention
- Difficulty to get back the cane once laid on ground
- Lifting body from relaxed posture



BATHROOM SAFETY RELATED ISSUES

WHEEL CHAIR

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FITNESS RELATED ISSUES

Physiotherapy Session

WITH CARETAKER

- Interest in exercise
- Required output
- Feel of importance

SELF EXERCISE

- Output less
- Forgetfulness
- Lack of interest

BASIC GUIDELINES WHEN DESIGNING FOR THE ELDERLY

- Do not design 'special' products for elderly people.
- The conventional approach to design through style or materials is obsolete.
- Physical independence is the treasure. Design should encourage the body to work in a healthy way.
- Find the balance between under support and over support.
- Understanding good body use (what we should do) is far more important than data on what we can do.

3.

IDENTIFYING THE REAL PROBLEM

Helps designers to have empathy, sensitivity and care while designing

BUT WHAT IS THE
REAL **BIG** PROBLEM?

A TYPICAL DAY IN **THE LIFE OF ELDERLY**

Pray

Yoga / Exercise

Eat Meals

Rest

Entertainment

Read

Chit-Chat

BUT WHAT IS THE MISSING PIECE?

THEIR **SMILE**

A healthy **mind** leads to a healthy **body**.

4.

DERIVING PROBLEM STATEMENT

Focus on the scope of work

ELDERLY **HEALTH** PROBLEMS

Musculo-skeletal changes

Cardio muscular Changes

Gastro-intestinal changes

Sensory System

Endocrine changes

Neurological changes

↓

Psychological changes

↓

Anger , Isolation , Irritation , Depression

ACTIVITIES WHICH MADE **ELDERLY SMILE**

Playing Cards

Chess

Carom board

Ludo

Local Games

THINK ALOUD
ACTION BASED
WORD CLOUD

We need to exercise.

We love fun.

Often exercise is a medical requirement…
Can we make it fun ?? …

BRIEF

TO DESIGN A GAMING INTERFACE FOR ELDERLY
TO PROVIDE FUNCTIONAL INDEPENDENCE

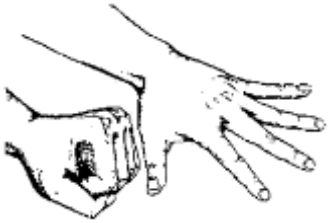
Gaming Console

Remote Control

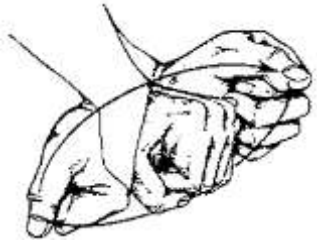
Synchronizer
& modulator

Equipment with
sensors attached

FEW COMMON **HANDS** EXERCISES



Wrist Stretch



Wrist Rotation

EXERCISING EQUIPEMENTS FOR **HANDS**

Our hands do so much for us. They are capable of a wide variety of functions: touching, grasping, feeling, holding, manipulating, caressing, and even when we talk. We caress the hair of a loved one (touch therapy).

The term "hand-eye coordination" describes the ability of the body's visual system to process information received through the eyes and use it to direct the movements of the hands.

5.

ITERATIONS & REFINEMENT

Designing concepts and iterating based on the user feedback

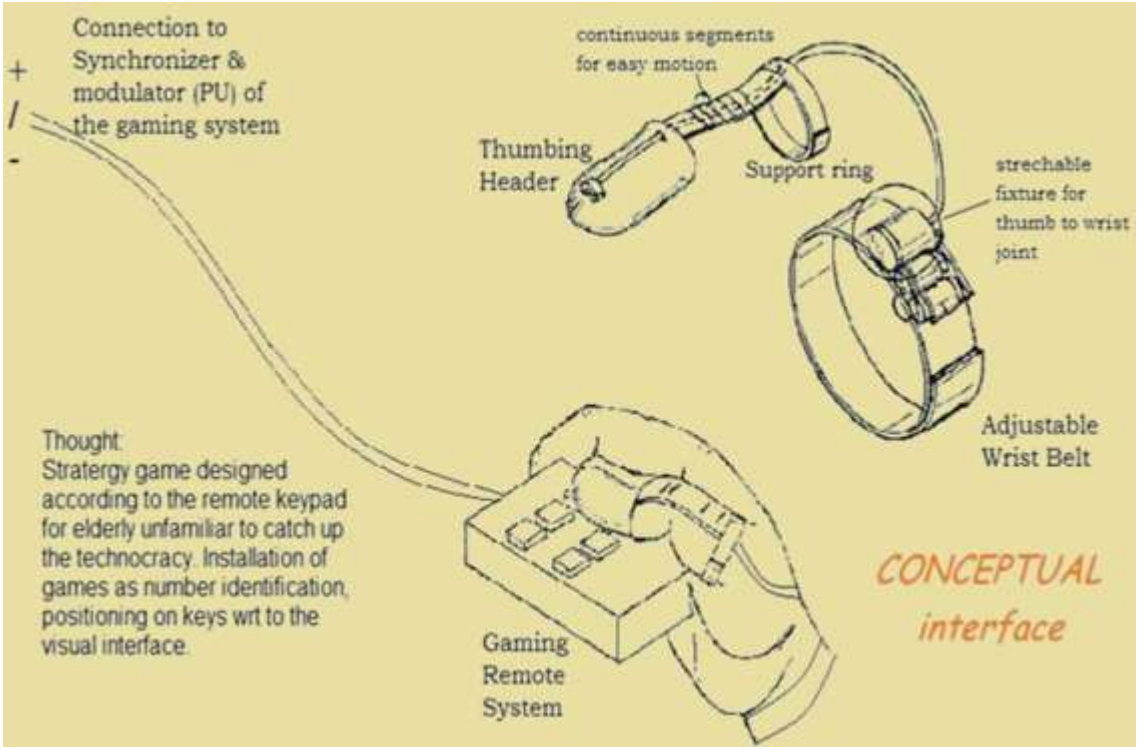
PROTOTYPING **BLUEPRINTS** - 01

Pressure points on hands

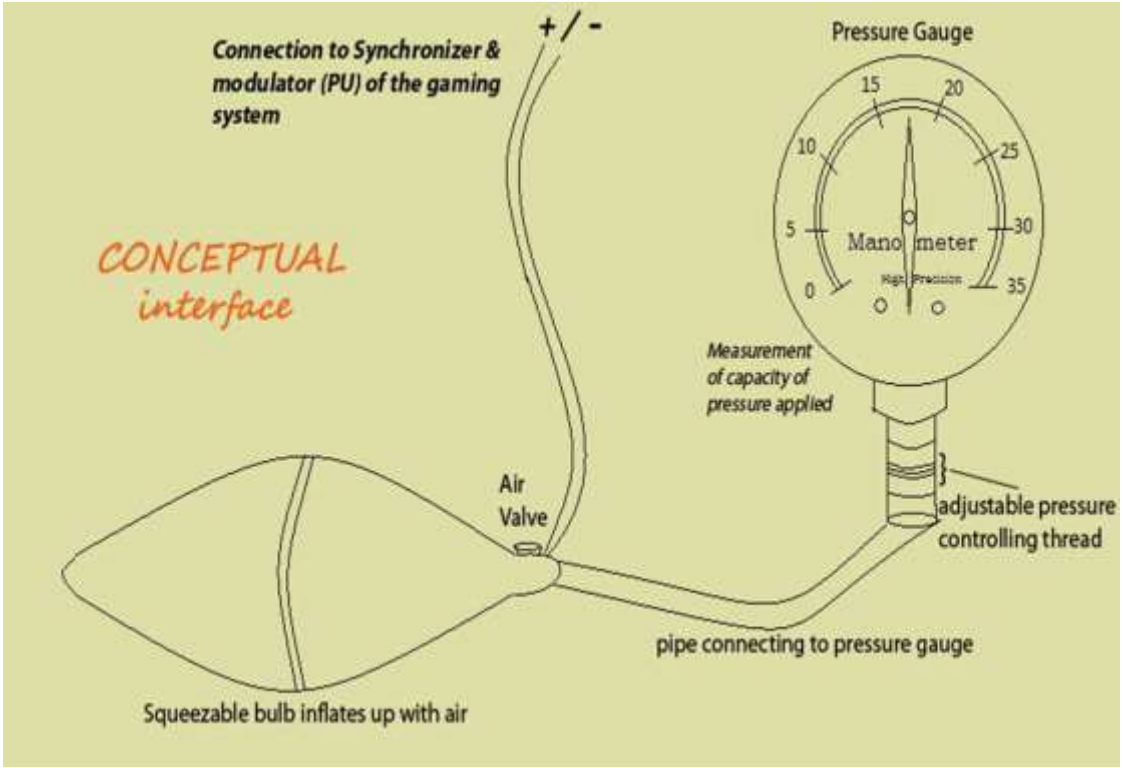
Problems in existing gaming control:

- Difficulty to operate
- Learning required
- Easily retire
- Similar to the interface (look wise)

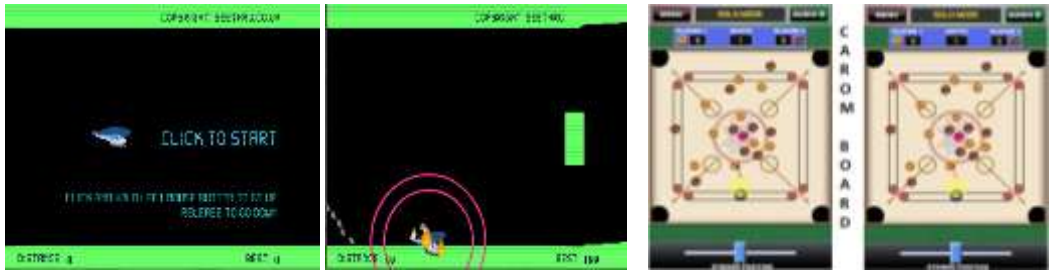
PROTOTYPING **BLUEPRINTS** – 02



PROTOTYPING **BLUEPRINTS** – 03



INTEGRATED GAMING CONSOLES



6.

USABILITY TESTING & IMPACT

I hear, I forget;
I see, I remember;
I do, I understand…

FINAL MOCKUP

USABILITY TESTING

CONCLUSION

- Bring back their smiles and happiness
- Motivate them from their minds to souls
- Improves hand-eye co-ordination ,thus providing brain exercise
- Enriches the social life & increase interactivity with surroundings
- Reduce stress and strain
- Helps in reducing aging effect & provides mind exercise, which in turn, reduces the possibility of memory loss
- The user is always in active state during the gaming as he/she is unconsciously doing exercise at the same time which solves the problems faced by user in physiotherapy session

DOCTOR's RECOMMENDATIONS

" Has great potential & can help people suffering from chronicity of illness "
- Dr. Alaknanda Banerjee, Max Hospital

" Will surely increase the holding grasp & thus, show improvement in patients in all pinches – tip to tip, point to point & lateral pinch "
- Dr. Devendra Ramteke, AIIMS

IS DESIGN INTUTIVE OR CONSTRUCTIVE ?

IS DESIGN **INTUTIVE** OR **CONSTRUCTIVE** ?

ITS **“BOTH”** .

“ Design is all about **connecting the dots**

& building **meaningful relationships** ”

THANKS!

Any questions?

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CREDITS

- Siva Raju, S. 2002: "Health Status of the Urban Elderly: A Medico-Social Study", Delhi, B. R. Publishing Co.
- Government of India, 1999, National Policy on Older Persons, Ministry of Social Justice and Empowerment.
- Lawson, B., 1990, How designers think: the design process demystified (2nd ed.), Butterworth, London.
- R. Keith Sawyer, 2006,"Explaining Creativity: The Science of Human Innovation", Oxford University Press
- Catherine Courage and Kathy Baxter, 2008, "Understanding Your Users: A Practical Guide to User Requirements Methods, Tools, and Techniques", Morgan Kaufmann Publishers
- Alan Tye, 1991, Design and elderly people, RDI, RSA Journal
- Irudaya Rajan, S., 24 February 2001: Social Assistance for Poor Elderly: How Effective? Economic and Political Weekly, 613-617
- Vijay Kumar, S. 2003: "U", An Aging India: Perspectives, Prospects and Policies, The Haworth Press p.45-65, New York.
- Rani Lueder, July 2008 "Walking in their shoes: Teaching elder design", 2nd Intl. Applied Human Factors & Ergonomics Conference, Las Vegas, USA.
- Kees Dorst, "The Problem of Design Problems"
- •Moalosi, Richie and Popovic, Vesna and Hudson, Anne and Kumar, Krishan Lall, 2005, "Integration of culture within Botswana product design" In Proceedings 2005 International Design Congress, National Yunlin University of Science and Technology-Yunlin,Taiwan.
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