



M a k i n g I T e a s y t o u s e

T h e s t a n d a r d a p p r o a c h

J E a r t h y , P r i n c i p a l H u m a n F a c t o r s
S p e c i a l i s t

Marine Product Development
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Lloyd's
Register

Overview of presentation

- What's the problem ?
- Usability – what is it?
- How to achieve it
- A standard approach
- Roles and responsibilities



What is the problem ?

Dear CEO,

I use an IT system to do my job. However this IT system is very inefficient; it's almost unusable. I don't perform as I should and the IT system is the main cause.

I ask a better IT system or another job.

Sincerely,

The elephant in the living room

Ever had a letter like this from your employee?

Employees have learned to do as told to the best of their abilities. They don't express this kind of feelings. Users rightfully demand better tools to do their jobs, except if these tools are IT systems. This is not right and does not help the business to achieve better results.

Manhaeve 2004

Business risks of using IT systems

- Low quality of information and hence low quality of decisions
- Waste of investment
- Loss of productivity
- Loss of control (of business/organisation)
- Loss of effectiveness
- Waste of operational costs
- Waste of training and support costs
- Health and safety endangered
- Unhappy users
- Low image of IT.



Risk change

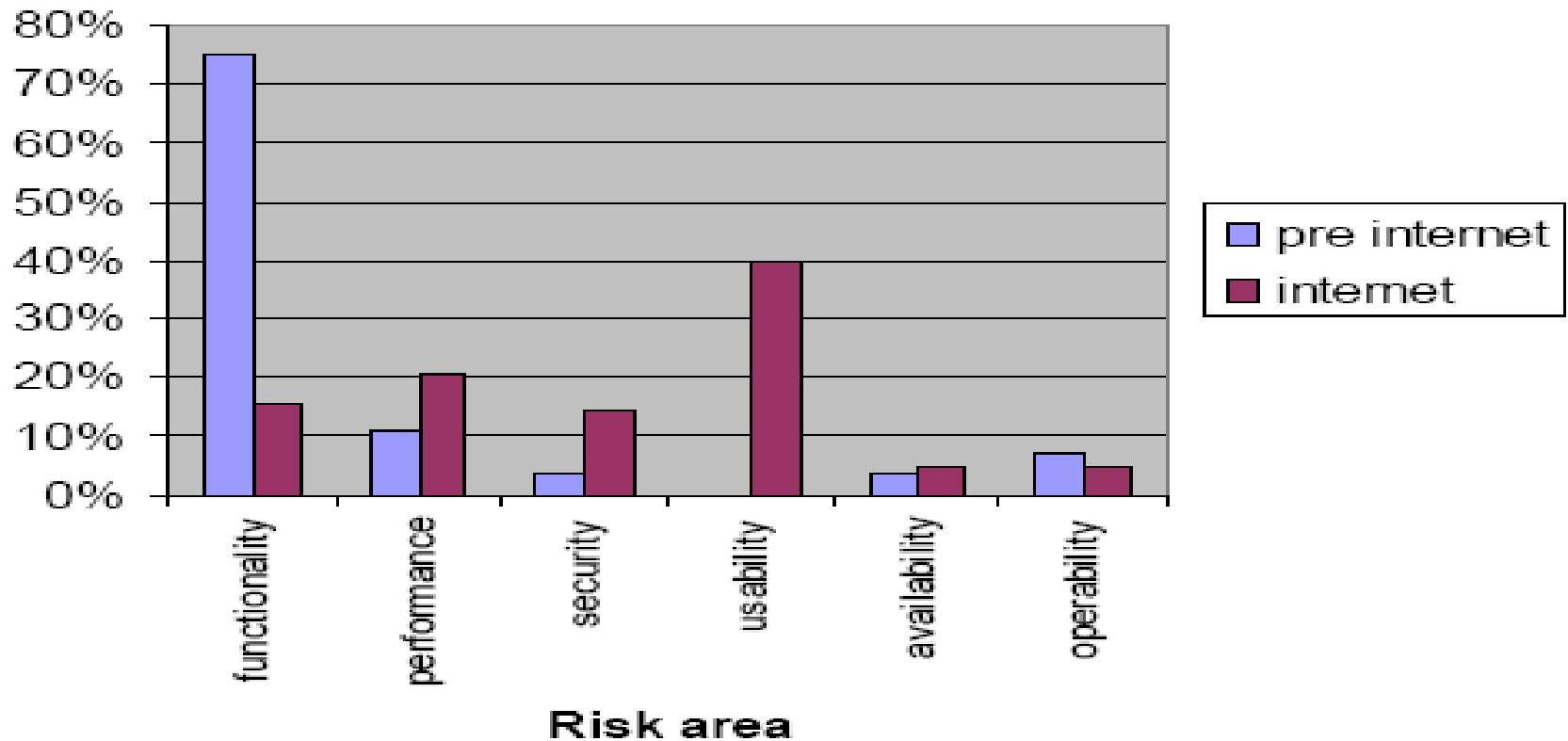


Figure 14: Risk shift

A Human-Centred Approach

Alert!

- Contributes to business success in a number of sectors of industry
- Structure for the consideration of Human Element issues
- Fits systems and software to people and tasks
- Design and operation of effective systems of work
- Improves job satisfaction, staff recruitment and retention
- Supports the development of a safety culture - helps the crew to act as a “safety barrier” (rather than seen as a source of error).

Usability – a measure of success

The capability of a system to enable specified users

to achieve specified goals

with:

- effectiveness,
- efficiency and
- satisfaction

in specified contexts of use.



Context of Use

Users,
tasks,
equipment (hardware, software and
materials),
and the physical
and social environments
in which a product
is used.



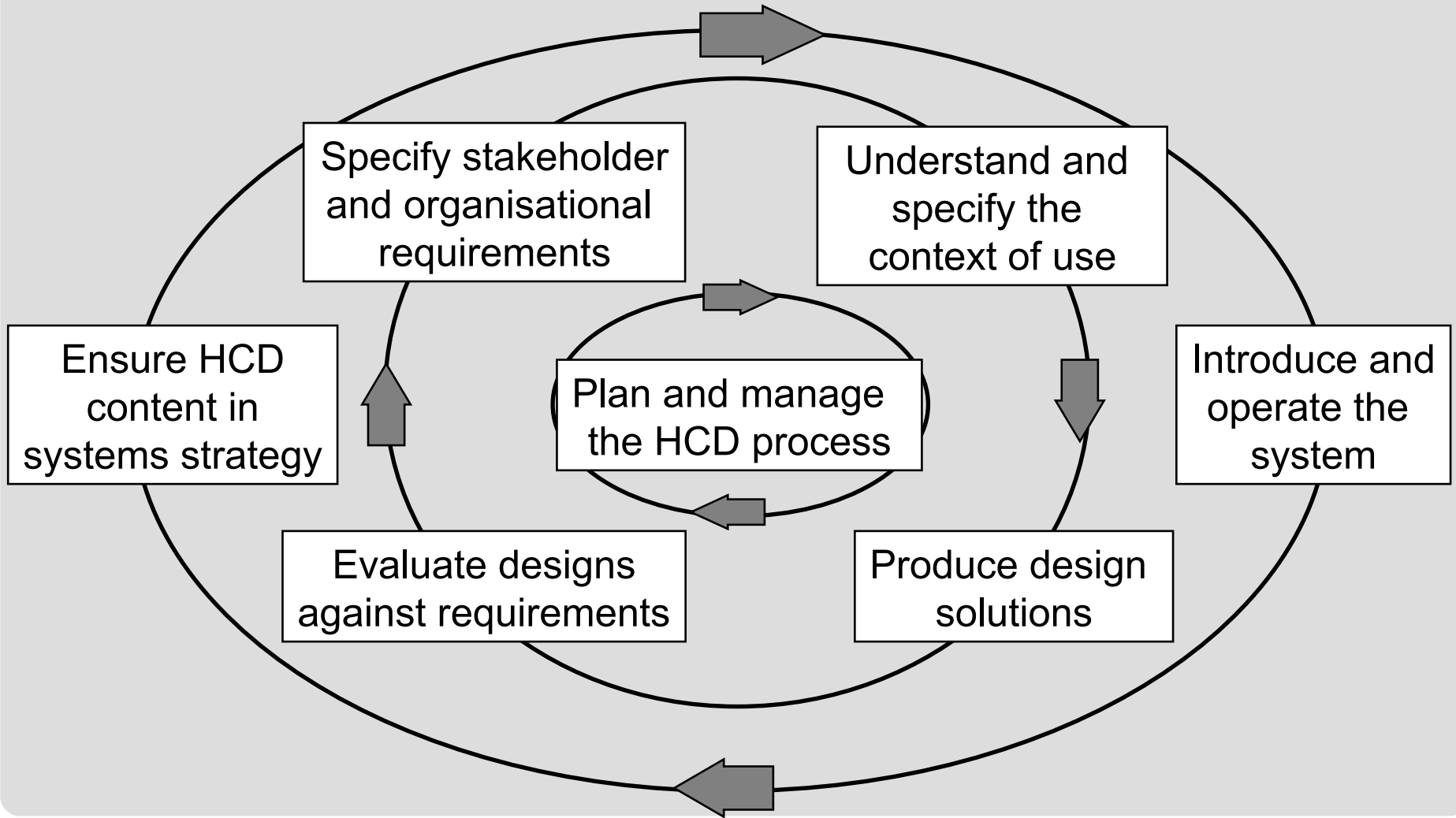
ISO 13407 *Human-centred design processes for interactive systems*

Principles:

- Active involvement of users & clear understanding of user and organisational requirements
- Appropriate allocation of function between user and technology
- Iteration of design solutions
- Multi-disciplinary design



Human Centred Design (HCD) Activities



Key points about HCD for purchasers of IT

- Iteration – checking it's the right thing and continuing to check
- Plan to throw the first one away – you will anyway
- Need to manage usability – and integrate this into the project
- Define use, usability and support requirements
- Specify, communicate and use the context of use
- Evaluation with users as appropriate at all stages.



Usability methods

- Listening and watching
- Showing
- Trying out
- Understanding
- Measuring
- Simulating
- Communicating the results

- Understanding that programmers are not users
- neither are managers
- or purchasing staff.



Useful standards

ISO 13407 *Human-centred design process for interactive systems*

ISO 9241-11 *Guidance on Usability*

ISO /IEC 25062 *Common industry format for usability reports* (CIF)

ISO 9241-110 & 12 collectively *Principles of software ergonomics*

ISO TR 16982 *Usability methods supporting human centred design*

ISO TR 19528 *Human-centred lifecycle descriptions*

ISO /IEC 20000 *Service management*



What to look for in a supplier

- Willingness to listen and act
- Understanding of the ISO standards
- Knowledge of the context of use
- Planning for human-centred activities
- Understanding of iteration
- Ability to provide training
- Ability to manage IT services.

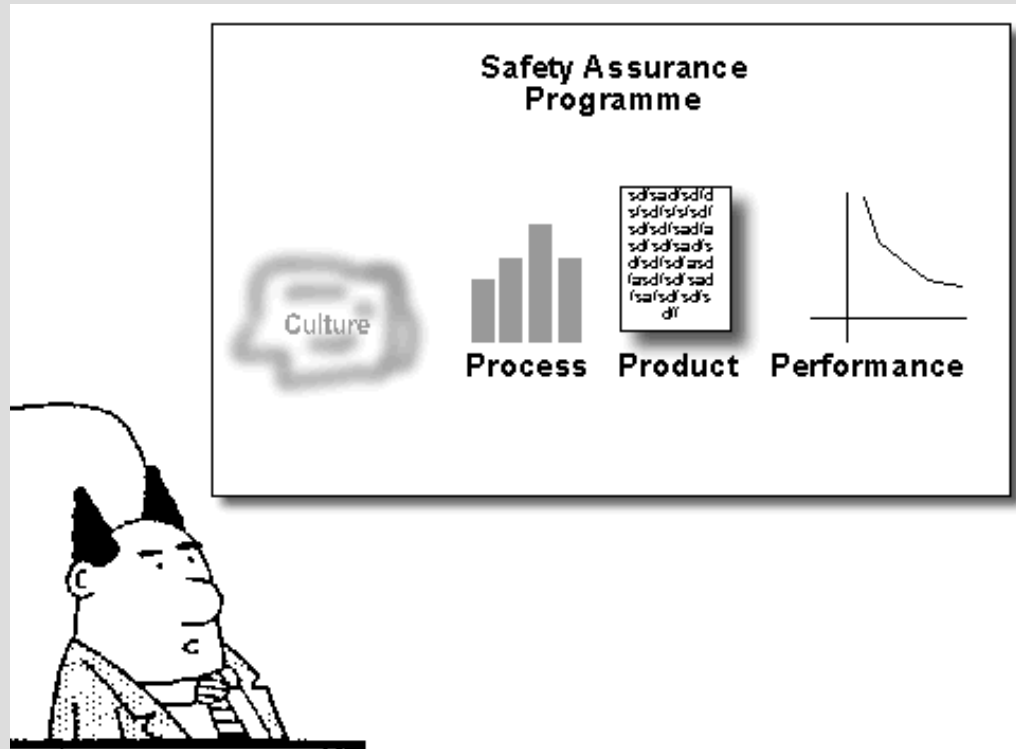


What informed purchasers need to do

- Start early
- Define business goals for the project and requirements for the service through life
- Put values on data and availability
- Acknowledge training and support costs
- Make the best users available “off the production line”
- Try to involve all staff
- Test and review, and keep on testing
- Own the result
- Integrate the service with procedures.

Possibilities for control

- Testing and quality of report
 - use of the CIF
- Feedback of context of use
- Clarity and precision of requirements
- Use of recognised methods
- But really need lead indicators, i.e. process and service quality management
- Put ISOs in the contract?



Conclusions

- Businesses have information needs, but
- People do the work
- Define the users, the job and the resulting needs and
- Plan to support the users in their work
- If not the:
 - Training costs will be undefined
 - The support costs will be greater than expected
 - There will be errors and inefficiencies in use
 - The system may not be used at all.



