Human Centred Design and assurance of ease of use

What is it that leads to ease of use, known as Quality In Use (QIU)? The answer is Human Centred Design (HCD).

The principles of HCD are:
- The active involvement of users and a clear understanding of user and task requirements.
- An appropriate allocation of function between users and technology.
- The iteration of design solutions.
- Multi-disciplinary design.

A simple subjective assessment of an organisation against these principles can be very revealing.

An organisation that has well-defined processes for HCD can be fairly sure of producing a usable system. An organisation with ad hoc processes is likely to produce a system that is hard to use.

For organisations that wish to improve the usability of their systems or services, then Process Improvement of HCD processes is the way ahead.

Customers, regulators, investors, and other stakeholders frequently need assurance that a proposed system or service will provide Quality In Use. The problem they face is gaining an early insight into potential risk; once a system is designed, it may be easy to find out how easy it is to use, but it is usually too expensive or time-consuming to make significant improvements.

An assessment of an organisation's HCD processes can provide assurance of Quality In Use *before* resources are committed. The findings can be used for Process Improvement or for contractor selection. Open literature resources are available for assessments from the informal to the very formal.

Human Centred Design (HCD) Processes
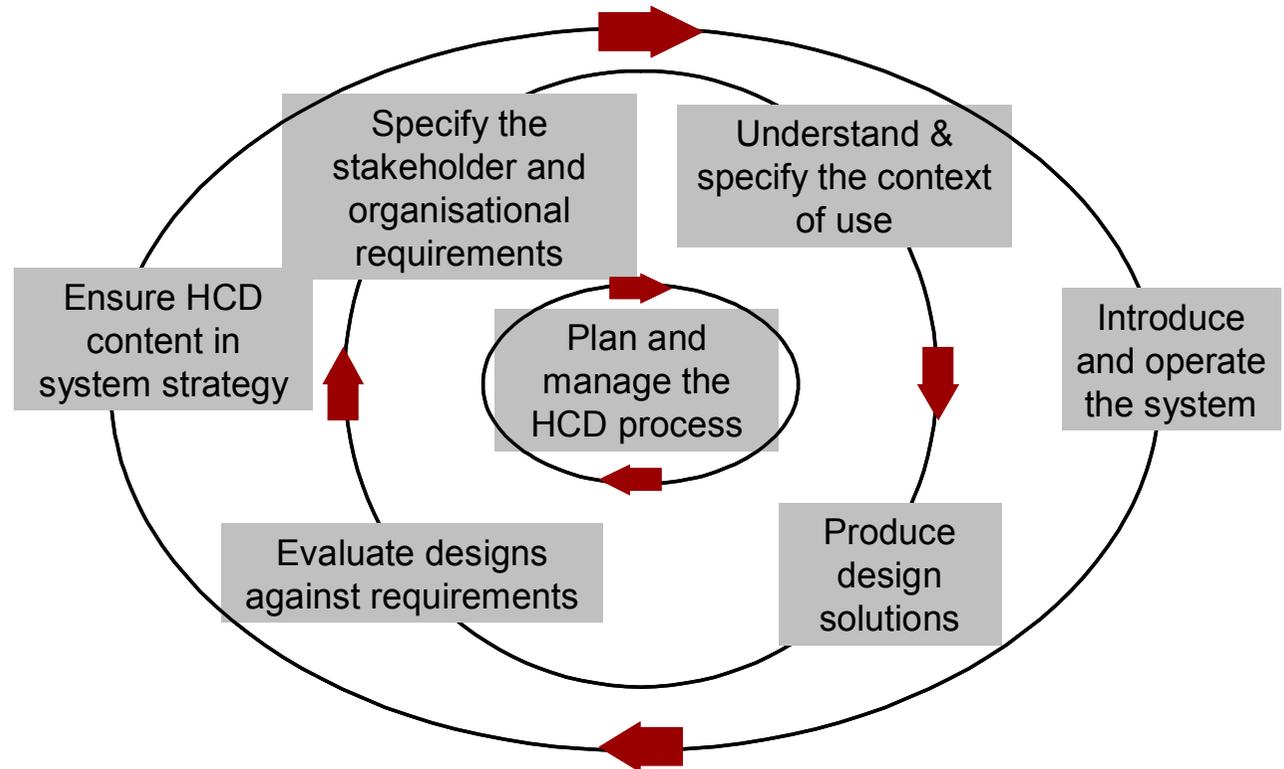
The HCD processes shown here represent the Usability Maturity Model, from ISO TR 18529 *Human-centred lifecycle process descriptions.*

HCD processes are fully defined in the ISO standard, and are well-supported with open literature tools and methods. As with all organisational processes, it is important to have clear process ownership and a focus on outcomes.

HCD processes are not themselves difficult to integrate with system development or service delivery processes. Their introduction may require considerable changes to ways of working. It is considered most effective to change processes first and let attitudes and culture follow, rather than the other way round.

For major turnkey systems, or for full organisational coverage, the larger process model, ISO PAS 18152 – *Specification for the process assessment of human-system issues* may be more appropriate, perhaps with tailoring.

Ease of use – Quality In Use

It is easy to know whether something is easy to use or not. It is less easy to include ease of use in contracts, regulations and other formal agreements. There are now standard definitions of usability and Quality In Use that can be incorporated into formal agreements, supported by metrics, tools, methods, process descriptions, competence definitions etc.

Quality In Use
The capability of a system
to enable specified users
to achieve specified goals with
effectiveness, productivity, safety and satisfaction
in specified contexts of use.

Simply put:
Who uses the system or service?
What are they trying to do?
What is important to them?
What is their situation?

It is easy for product development organisations to become hypnotised by technical priorities such as 'technology push' and 'feature creep'. The resulting product may just baffle the user and detract from the user experience.

Service providers may find that an emphasis on 'service delivery' approaches and Service Level Agreements lead to a frustrating and unproductive user experience.

Problems such as these can be overcome by a focus on Quality In Use (QIU) as an outcome to be achieved, and the use of Human Centred Design (HCD) as the means of achieving it.

Further Information

For designing systems or services with Quality In Use, the key standard is ISO 13407 - *Human centred design processes for interactive systems*, supported by ISO TR 18529 *Human-centred lifecycle process descriptions.* For large turnkey systems, there is ISO PAS 18152 – *Specification for the process assessment of human-system issues.* These standards are being re-numbered in the ISO 9241 200 series. Standards can be obtained from ISO or national standards bodies.

Useful websites include:

http://www.processforusability.co.uk

http://www.usabilitynet.org

http://www.tol.oulu.fi/~tjokela/

http://www.nigelbevan.com

Brian Sherwood Jones
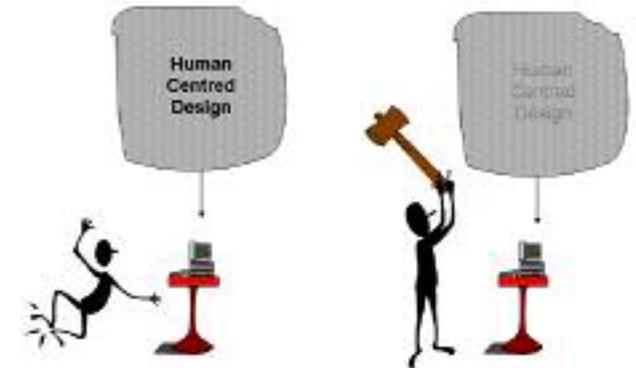Process Contracting Limited
"Providing assurance that systems and services meet user needs".
v1.0 05 May 2009

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Human Centred Design

Using Human Centred Design to achieve Quality In Use.

Providing assurance that systems and services meet user needs.

An introduction to using International Standards and open literature resources to deliver safe and effective operation.

http://www.processforusability.co.uk