

### Leonard W.M Verhoef

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#### Speaker Qualifications

Leonard Verhoef (1950) performed research on human thinking. As a psychologist he was involved in the development of several systems (electronic mail, traffic control, process control, public transport, public information, software design, web). He also investigated how to apply psychological knowledge in the design process (master thesis: "Why designers can't understand their users, development of a systematic approach using cognitive psychology). Now he is working on "How to unenslave

Windows users" and "How to organise our lives in a technical future". More on [www.humanefficiency.nl](http://www.humanefficiency.nl) (most in Dutch).

#### Passenger reactions and passenger actions: Improving public transport

In a reaction or user experience approach opinions of passengers are measured. In an actions approach performance is measured of passengers using timetable boards and payment systems.

Four theoretical criteria for design knowledge are used to establish the value of these two approaches for improving public transport.

- 1) The knowledge an approach provides, should be objective. Science can provide objectivity. For these approaches there is information in philosophy, physiology, psychology and marketing.
- 2) The knowledge should be an integration of synthetic and analytic knowledge. Humans and interfaces both are a synthesis of separate elements.
- 3) The knowledge should enable comparison, e.g. of design solutions.
- 4) The knowledge should provide standards to enable designers to apply the knowledge without study of several sciences.

Two investigations are used for an empirical validation of the reactions and actions approach: the Dutch public transport barometer (5000 interviews each month) and a recent investigation of experience and performance of users of the National Dutch Public Transport smart card (n=1413).

It is concluded that knowledge of passenger actions enables design of public transport information at lower costs, higher passenger experience and improvement of the product (less errors, shorter travel times). Knowledge of passenger reactions is used to determine how much to pay for the transport concession and the bonus of the manager.