

## The 'wow' experience – Conceptual model and tools for creating and measuring the emotional added value of ICT

Paper presented at COST269 conference Good Bad Irrelevant, Helsinki, Sept 3-5, 2003

Marc Steen, TNO Telecom, Leidschendam, The Netherlands,  
tel +31 (0)70-44 62280, fax +31 (0)70-44 63206, m.g.d.steen@telecom.tno.nl

Nicole de Koning, TNO Telecom, Leidschendam, The Netherlands,  
tel +31 (0)70-44 63994, fax +31 (0)70-44 63206, n.m.dekoning@telecom.tno.nl

Liliane Hoyng, TNO Telecom, Leidschendam, The Netherlands,  
tel +31 (0)70-44 61328, fax +31 (0)70-44 63206, l.l.m.l.hoyng@telecom.tno.nl

### Abstract

People are sensitive to unique, memorable experiences. That is why companies which develop or market ICT products and services are looking for ways to offer *wow* experiences – this will help them to increase market share, capture margins or retain customers. This research aims to develop two tools: one tool which will help to measure the *wow* experience triggered by ICT, and one tool that will help to create ICT with (more) *wow*. The research questions posed are: When do people experience *wow*? What does this *wow* consist of? How can ICT products or services deliver *wow*? An explorative, qualitative methodology was chosen, including explorations of *wow* experiences and literature, and group discussion sessions with consumers. It was found that there are many different kinds of *wow*, depending on qualities of the person and context, and qualities of the ICT product or service. *Wow* happens when these qualities match. A provisional list of *wow* factors that characterise these qualities was developed and tested: *nostalgia, fantasy, sensorial experience, amazement, surprise, beauty, exclusivity, budget, comfort, mastery, connectedness, own world, care, competition* and *inspiration*. The authors recommend further research into *one time wow* versus *ongoing wow* and further research into market segmentation.

### Introduction

People are sensitive to unique, memorable experiences. People don't forget a *wow* experience easily. If a product or service offers a 'wow' experience, people are more likely to buy it and use it, and buy it and use it again. That is why companies are looking for ways to offer such *wow* experiences with their products and services. Recently researchers and authors started to address this emotional added value, e.g. as experience economy, in product and interaction design of pleasurable products and in branding (Pine & Gilmore, 1999; Fogg, 2002; Marcus, 2002; Jordan, 1999; Rijkenberg, 2001). This is especially relevant for companies in the ICT industry, where increasing market share, capturing margins and retaining customers are crucial and technology is becoming a commodity. Providers of ICT products and services that are basically useful and usable can only differentiate their offers with experiences and emotional value. However, there seems to be a lack of tools that help to measure whether ICT products or services offer *wow*, or create ICT products or services with (more) *wow*.

#### *Definition of 'wow'*

One of the essential qualities of *wow* is that it is a subjective and fuzzy concept. For the clarity of our research it is however necessary to define the *wow* experience. The authors

propose to define it as a *strong, positive emotional experience, surpassing basic experience*. In this paper this definition is further focused on *wow* experience that are enabled, facilitated or stimulated by ICT products or services. It is assumed that *wow* can happen only when functionality and user interface of the product or service are useful and usable, and when possible dissatisfying factors have been erased. In a sense, the concept of *wow* builds upon the concept of *adoption of innovations* (with central concepts: compatibility with daily life, relative advantage, complexity, visibility and triability, e.g. Rogers, 1983), and the concept of *usability* (with central concepts: effectiveness, efficiency and satisfaction, e.g. Nielsen, 1994; Dix e.a., 1998)<sup>1</sup>.

#### *Research goal and ambition*

The ambition of the research described in this paper is to develop two tools that will help people in market research and product development to create ICT products and services with (more) *wow*. The first tool is meant to help to measure the *wow* experience triggered by ICT products or services, e.g. during market research, expert reviews, interviews, focus groups or questionnaires. The second tool is meant to help create ICT products and services with (more) *wow*, e.g. as inspiration for developing or (re)designing products, functionalities or marketing propositions. These tools are meant to supplement current practices of market research and product development.

#### *Research questions and method*

This research addresses three questions: When do people experience *wow*? What does *wow* consist of? How can ICT products or services trigger *wow*? Because of the innovative character of this research, an explorative methodology is followed. Firstly the team members explored their own *wow* experiences in general, and with ICT specifically. Based on these findings a conceptual model was developed and literature was studied in order to further detail the conceptual model. Finally group discussion sessions with consumers were executed in which consumers told about their *wow* experiences in general and with ICT specifically.

### **Subjective exploration**

In order to explore the *wow* experience, the team members (with backgrounds in market research and concept development) explored their own *wow* experiences. Each team member told about his or her *wow* experience, with or without an ICT product or service. The *wow* experiences were diverse:

*“I was eleven years old and camping with my parents during a weekend. Some friends of my parents gave me my first computer: a ZX81. There was no electricity and the computer’s manual was in English so I could not use it. But the ZX81 was magical to me and I was glancing through the manual and staring at the computer all weekend.”*

*“The movie “Waking Life” -- shot with a digital camera and edited with animation software. I find the images and music so beautiful. Maybe one day I will make a movie like that.”*

---

<sup>1</sup> Definitions from ISO 9241: Usability: The effectiveness, efficiency, and satisfaction with which specified users achieve specified goals in particular environments. Effectiveness: The accuracy and completeness with which specified users can achieve specified goals in particular environments. Efficiency: The resources expended in relation to the accuracy and completeness of goals achieved. Satisfaction: The comfort and acceptability of the work system to its users and other people affected by its use.

*“My Senseo Crema (coffee machine that makes one cup at a time). Every time I use it, and I use it daily, a smile appears on my face. It is a mixture of ease-of-use, and personalisation. It is my own cup of coffee, for me, very quickly made.”*

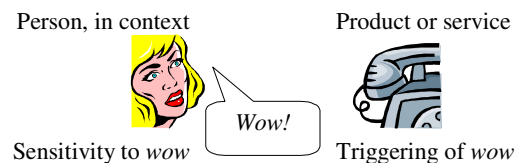
*“SMS-ing with my new boyfriend. SMS enabled me to get in contact with him easily. Calling would be more difficult for me, because then I would have to overcome my shyness.”*

Some told about mastering a skill, like learning how to juggle, how to rotate a Power Ball or learning to ride a bicycle. Others told about experiences that involved their senses, like watching modern ballet, or listening to your own music while driving your car. These stories were analysed with the aim of discovering when people experience *wow*, what *wow* consists of, and how ICT can trigger *wow*. This delivered a list of keywords (often overlapping) that characterise the *wow* experience. Many *wow* experiences related to more than one keyword.

### Conceptual model

An important finding of the subjective exploration is that there are many different kinds of *wow*, and that *wow* is influenced by qualities of the person, of the context of use and of the product or service. The authors propose a conceptual model which is supposed to help studying the *wow* experience, see Fig. 1. On the left is a person with certain qualities in a context with certain qualities, and these determine the ‘sensitivity’ to certain kinds of *wow* – characterised by *wow* factors. On the right is a product or service with certain qualities, and these determine the ‘triggering’ certain kinds of *wow* – characterised by *wow* factors. If the *wow* factors of sensitivity and triggering match with each other, then *wow* is likely to happen.

Two examples may clarify this. A man driving in his car in a hurry who receives quick and accurate directions from his navigation system may experience *wow*, characterised by *wow* factors like *comfort* or *control*. A girl sitting at home at night who receives an SMS of her friend may experience *wow*, characterised by *wow* factors like *nostalgia* or *connectedness*.



*Fig. 1. A person in a context is sensitive to certain kinds of wow (left), and a product or service may trigger certain kinds of wow (right) – the wow experience happens when these match (middle)*

### Literature

The exploration of literature aims to find concepts that will help to study *wow* experiences and focuses on experience and emotion, and on emotional responses to products and services.

Dillon (2000) proposes a new and extended definition of user experience: “behaviour + result + emotion”, including aesthetics, perceived usability, cognitive effort, perception of information shapes, acceptance level and self-efficacy. The experience of *wow* is similar to *flow* or *optimal experience*: the pleasant sensation that occurs when required skills are in

balance with the encountered challenges, in an action system with clear targets and rules and with direct feedback on performance (Csikzentmihalyi, 1990). A generally accepted model of emotion is the categorisation of fear, surprise, anger, sadness and happiness (Frijda, 1986). In addition to that, there is recent research literature that focuses on the emotional experiences that happen when people interact with products (Desmet, 2002), with cultural artefacts like books or movies (Driel, 2002) and with environments (Hull, Reid & Kidd, 2002), and the project team could draw from relevant in-house research of TNO Telecom.

According to Desmet (2002) a person has certain concerns (goals, standards, attitudes, knowledge, expectations) and a product (object, agent, event) acts as a stimulus for product appraisal, and for emotional responses. These responses are modelled with the following emotions: desire, fascination, admiration, satisfaction, pleasant surprise, inspiration and amusement (positive), and contempt, boredom, disgust, indignation, disappointment, dissatisfaction and unpleasant surprise (negative). According to Van Driel (2002) a person *consuming* a cultural artefact uses cognitive processes<sup>2</sup>, and these determine the emotional response. The cognitive processes are: anticipation, comparison, modification and achievement, and these processes can occur in three domains: rational, affective, imagination. E.g. watching the movie *The sixth sense*, which cleverly mixes action, detective and horror, involves processes of anticipation (*Who done it?*) and modification (*Is this detective or horror?*) in rational, affective and imagination domains – and these are reasons why many people appraise it positive. Hull, Reid & Kidd (2002) model the emotional response to environments (outfitted with ICT) in three categories: social aspects like bonding-sharing or competition with others, challenge-achievement aspects like creative self expression or test of physical or mental skill, and drama/sensation aspects like touch, see, taste, smell and fantasy. This model is used for public environments and may be expanded to include personal environments, products and services with the addition of personal aspects like comfort, trust and privacy.

TNO Telecom's in-house research into (emotional) experience of personalised services delivered insight in experiences of ease-of-use, feeling-of-control, surprise and familiarity<sup>3</sup>. Other in-house research focused on motivations for communication and delivered insight into (social-psychological) aspects like connecting to others, e.g. for self-expression, status, communication, mutual care or (pleasant) competition.

Interpretation of the subjective exploration and literature delivered a provisional list of possible *wow* factors: *nostalgia, fantasy, fascination, sensorial experience, inspiration, exclusivity, surprise, familiar, control, comfort, mastery, express, competition, care, connectedness* and *own world*. It is assumed that these *wow* factors characterise the person's and context's sensitivity for different kinds of *wow* experiences, and determine the product's or service's triggering of different kinds of *wow* experiences.

### **Field research design**

A field research was conducted in order to verify whether the assumed *wow* factors are found in people's daily life: do the sensitivity of people and contexts, and triggering of products or

---

<sup>2</sup> 'Cognitive' is used to describe processes in the brain – these can be processes related to emotions.

<sup>3</sup> For personalised services ease-of-use and feeling-of-control, and surprise and familiarity sometimes conflict. A person experiences ease-of-use when a service executes tasks for her – but if it is too pro-active, she may experience a lack feeling-of-control. Or if a personalised service delivers unexpected recommendations she experiences surprise – but if it is too surprising, she may experience a lack of familiarity.

services map on the assumed *wow* factors? Because of the explorative nature a qualitative research approach is chosen.

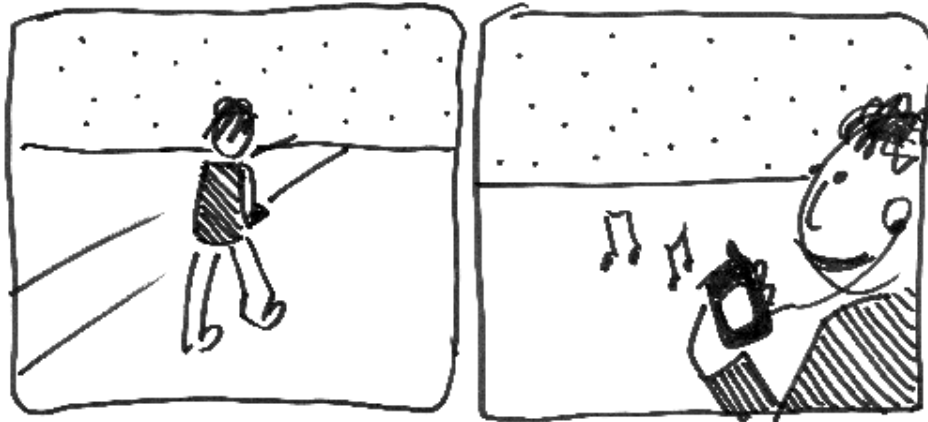
Respondents were selected on the basis of their use of i-mode™; this is an innovative mobile service with communication, information and entertainment on a mobile phone. A mobile service is chosen because a mobile service is likely to be used in many different contexts (as compared to a fixed service) and enables discussion of a variety of contexts, and because a mobile service is likely to be personal and connected to emotional experiences. In addition to that, i-mode™ was recently introduced and is expected to trigger *wow*.

Most respondents are – like the target group and like the user group – in their twenties. Three group discussions were organised, with six, five and three respondents – a decreasing number of respondents that facilitate width in the first session and depth in the last session.

The field research includes a confrontation with some innovative service concepts that are supposed to trigger certain kinds of *wow*, and a questionnaire that aims to measure the respondents' sensitivity to *wow*, with statements like “I daydream about things that I cannot afford” and response options “strongly disagree, disagree, agree, strongly agree”.

In each session concepts for innovative i-mode™ services were shown, in order to measure the triggering of different kinds of *wow*:

- a mobile service that delivers music which matches with your mood, see Fig. 2;
- a mobile service that sends inspirational texts or pictures;
- a mobile service for making, sending and receiving photos and short videos;
- an instant messenger service on a mobile phone
- a mobile service to play (simple) games with others



*Fig. 2. One concept as it was presented in the group discussion sessions: “You walk somewhere and are in a ... mood. Then matching music comes from your mobile phone”*

Each session consisted of three parts and lasted two hours. Two researchers executed each session: one interviewing and one taking notes. One researcher participated in all three sessions, and three others participated each in one session. All researchers discussed and analysed the three sessions, in order to minimize risks of bias of the researchers.

In the first part of the session respondents spoke about their own *wow* experiences. All respondents were asked to think beforehand of personal *wow* experiences (without or with relations to ICT), and were asked to bring a product or object along that relates to this *wow*. The researchers emphasized that *wow* experiences are very personal and each person has its own unique *wow* experiences (“just like you may have your favourite colour, and there is no best colour”). Respondents also reacted to others’ experiences. In the sessions the researchers did not mention the assumed *wow* factors. After the session the notes were analysed and *wow* experiences were categorised according to the assumed and newly discovered *wow* factors.

In the second part the researchers showed three concepts for innovative i-mode services. Each concept was designed with the aim of triggering three or four *wow* factors. In each session the researchers showed three or four concepts, two of which they assessed that they will match with the sensitivity of (most of) the respondents, and one or two of which they assessed that they will not match. The concepts were shown as sketches, so that respondents react more freely and did not feel restricted. The concepts were primarily used to make the respondents talk about *wow* experiences (and *not* to test the commercial value of the service concepts). In this part of the session the researchers moved the focus towards ICT products and services.

In the third part the researchers asked the respondents to fill out a questionnaire with 45 statements. This was meant to measure the respondent’s sensitivity to the assumed *wow* factors. After each session the researchers assessed for each respondent to which *wow* factors he or she is likely to be sensitive, based on observations made during the session. At each session’s end the researchers tried to summarise the *wow* experiences they had heard, and asked the respondents to correct or supplement these interpretations.

## **Field research results**

This section contains the results from the field research that relate to the research questions: When do people experience *wow*? What does *wow* consist of? How can ICT products or services trigger *wow*?

### *When do people experience wow?*

The field work delivered a large collection of *wow* experiences that happen in people’s daily life, some related to ICT products and others not. Almost all assumed kinds of *wow* were found (except from *inspiration*, which was not found as such), and many *wow* factors were further detailed, combined or taken apart and resulted in a revised list of *wow* factors (see next paragraph). Many *wow* experiences are related to *surprise*, which is natural, because *wow* is often a pleasant, unexpected experience. Furthermore, many *wow* experiences relate to *connectedness*, which is natural as well, because the large parts of the sessions focused on telecommunication.

### *What does wow consist of? The wow factors*

The authors assume that *wow* happens when the sensitivity of person and context for certain kinds of *wow* matches with the triggering of products or services of certain (the same) kinds of *wow*. The experience of *wow* consists of one or several *wow* factors from the list underneath. The examples that are included are quotes of what the respondents mentioned during the sessions. Please note that *wow* experiences *may* be enabled, facilitated, enriched or stimulated by ICT products or services, but *wow* can of course happen without ICT.

- **Nostalgia** – “*wow, that reminds me of ...*”. One may experience *wow* because of pleasant reminiscence or memories, e.g. looking at photo’s of the family’s holiday in an album, or visiting an ancient, foreign place that you dreamt of as a child.
- **Fantasy** – “*wow, this makes me think of ...*”. One may experience *wow* because of pleasant fantasies, e.g. reading a Harry Potter book (‘preferred the book over the film, because it felt more active’), or fantasising about video projection on the wall at home.
- **Sensorial experience** – “*wow, this ... feels terrific*”. One may experience *wow* because of pleasant physical activities or sensations, e.g. sailing on a boat, salsa dancing, or watching *The Matrix* and almost immersing physically in it. One respondent called this *flow*.
- **Amazement** – “*wow, I didn’t know ... is possible*”<sup>4</sup>. One may experience *wow* because of an unexpected and pleasant functionality<sup>4</sup>, e.g. finding the phone number of a taxi on i-mode™ ‘in the middle of nowhere’, or the first time use of a car navigation system.
- **Surprise** – “*wow, I like this new ...*”. One may experience *wow* when one likes to be surprised, e.g. buying music without knowing it. *Surprise* and *amazement* are slightly different: *surprise* refers to the person, whereas *amazement* refers to product or service.
- **Beauty** – “*wow, that... is so beautiful*”. One may experience *wow* because of the aesthetical qualities of an object or environment, e.g. a handbag with beautiful colour and shape (‘I’ve got to have it’), or mobile phone (‘icy blue, with blue stripe and blue lights’).
- **Exclusivity** – “*wow, this ... is unique*”. One may experience *wow* when an event, product or service is rare or (almost) unique, e.g. a total eclipse of the sun, or participating in a sports championship and being very close to a sports star.
- **Budget** – “*wow, this ...is cheap*”. One may experience *wow* when a product or service is cheaper than was expected, e.g. buying a pair of blue jeans for 11 euro only, or receiving a picture on a mobile phone without paying for it.
- **Comfort** – “*wow, this ... is so easy*”. One may experience *wow* because a product or service is very easy, accessible or helpful<sup>5</sup>, e.g. speech recognition on a PC, or a digital camera (‘take many pictures, put some on the web, have them printed’).
- **Mastery** – “*wow, I managed or learned to do this ...*”. One may experience *wow* when doing something that one was not able to do before, e.g. dressage for horse riding, singing solo in a choir, or *hacking* a mobile phone (may include creative self expression).
- **Connectedness** – “*wow, we are ... together*”. One may experience *wow* when one feels connected to others<sup>6</sup>, e.g. receiving an SMS, sharing *web log* messages, or creating a *SMS chain poem*. *Connectedness* may be physical, digital *real-time*, or digital *time-shifted*.
- **Own world** – “*wow, this is my personal ...*”. One may experience *wow* because of a pleasant private sensation<sup>7</sup>, e.g. being with a horse, or going outside to skate with a walkman on. This *wow* may include creative self expression and escapism.
- **Care** – “*wow, it feels good to care for ...*”. One may experience *wow* when providing care to another, e.g. talking over the phone or MSN, or playing with a Tamagotchi, or caring for a horse. This *wow* is similar to either *connectedness* or to *own world*.
- **Competition** – “*wow, we play ...*”. One may experience *wow* when playing with others (stimulating each other, not fighting), e.g. playing Xbox Live with friends across the country, or sailing in a competition. *Competition* may coincide with *connectedness*.
- **Inspiration** – “*wow, I feel inspired to do ...*”. One may experience *wow* when feeling inspired to do something. This *wow* was not mentioned in these wordings during field research – maybe respondents referred to it as *fantasy*, *amazement*, *surprise* or *beauty*.

<sup>4</sup> *Amazement* may be similar to fascination, although fascination implies some ambiguity.

<sup>5</sup> *Comfort* includes the *wow* of being in control. For personalised services comfort and control may conflict.

<sup>6</sup> *Connectedness* refers to connecting to other people, not to products, including being pampered by someone.

<sup>7</sup> *Own world* is similar to *cocooning* – it may be shared with few (but not more, otherwise it is *connect*).

Several attempts were made to order these ‘wow factors’, e.g. in clusters that focus on the relation of a person to an object, on the actual use of an object, and on the relation between people, but no satisfactory and unequivocal ordering was found.

*How can ICT products or services trigger wow?*

During the group discussions several concepts for innovative mobile services were shown and discussed in order to help the respondents to talk about *wow* in relation to ICT products and services. The objective was *not* to test the commercial value of the service concepts. Some of the reactions are included below, with an interpretation of relevant *wow* factor(s).

*Mobile service that delivers music which matches with your mood* – Music was not spontaneously mentioned by most respondents. However, showing this concept triggered them to tell about musical *wow* experiences, many relating to *nostalgia* and *own world*:

*“I met my girlfriend in a bar when a specific song was played. Every time I hear that song it reminds me of that special wow-moment when I saw her for the first time.” (nostalgia)*

*“I have some friends with whom I go salsa dancing. These friends all have a salsa ring tone on my mobile. So when I hear that sound I know one of them is calling me.” (own world)*

*Mobile service that sends inspirational texts or pictures* – Most respondents did not easily understand this concept, possibly because of the wording ‘inspirational’, which not easily fits their vocabulary (e.g. a cartoon is likely to better fit). The concept triggered them to talk about *wow* experiences, many relating to *own world* and *connectedness*:

*Together with my best friends I write a poem via SMS. Sometimes we recite this poem and other people have no idea what we are saying.” (own world)*

*“It is nice to receive emails from your friends with specific texts or jokes that only you can understand because you know these friends and they know you.” (connectedness)*

*Mobile service for making, sending and receiving photos and short videos* – This concept easily triggered respondents to talk about *wow* experiences, many related to *connectedness*:

*“When one of my friends is present at a Formula 1 race, then it is really wow to see this race and hear it. This way you can share with others what you are doing.” (connectedness)*

*Instant messenger service on a mobile phone* – This concept also triggered respondents to talk about *wow* experiences related to *connectedness*. It seems like the reactions to this concept are gender specific: the third group (two female and one male) liked the concept, whereas the first group (six male) did not like it at all.

*Mobile service to play (simple) games with others* – Most respondents did not like this concept. They consider a phone’s display too small for games – for playing real games you have a Playstation or an Xbox. The concept however triggered them to talk about *wow* experiences related to *competition*, *connectedness*, and *care*.

*“It is really great to play games with friends – who are more than 150 km further – via internet.” (competition, connectedness)*

*“I had a Tamagotchi with which I played for months. I took it everywhere and always took care of it. When it died I took out its battery and restarted it: trying to keep it longer alive than the last time.” (competition, care)*

## **Discussion**

In this section some issues of the field research design and the field research results are discussed critically: context, functionality, respondent selection and questionnaire design.

### *Context*

Context of use is crucial for user experience and for the sensitivity to *wow* experiences. Ideally, field research into *wow* is done with real products and services, which respondents actually use for a period of time in their daily lives. In order to bring *context* into the field research, the researchers emphasised the contexts in which the service may be used. When respondents told something, the researchers asked questions about the context. The method of asking respondents to think beforehand of a personal *wow experience*, proved to be a good way to get the right mindset and to stimulate people to talk about *wow*. In one session this beforehand thinking was not stressed by the researchers, and possibly respondents felt inclined to improvise and mention *wow* experiences, influenced by what other respondents said about *wow* – this possibly resulted in less personal stories about *wow*.

### *Functionality*

Products and services need to have a certain basic quality level, before they can trigger *wow* experiences. Therefore, a service with a basic quality of usefulness and usability was used during the field research: i-mode™. And respondents were selected based on their use of this service, so that they are familiar with its basic usefulness and usability. The researchers decided to show concepts that may trigger *wow*, which are slightly innovative, but not too away from reality. The service concepts are not fundamentally new services, but take currently available, successful products or services one step further: the music concept relates to portable audio and MP3 downloading; the inspiration concept relates to (daily) jokes, calendars, and cartoons; the photo and video concept relates to digital photography and e-mail; the instant messaging concept relates to IM applications and SMS; and the gaming concept relates to (portable) game devices. The researchers did consider using prototypes or *dummies* of the innovative service concepts, but decided not to, because this may lead to talking about basic functionality, and divert from *wow* experiences.

### *Respondent selection*

The researchers discussed whether to conduct single-interviews (with the advantage of depth, especially for a personal issue like *wow*), duo-interviews (with advantages of depth and possibility to talk about communication, if the duo knows each other), and group discussions. The researchers chose for group discussions, because of the advantage of width: respondents can react to each other and explore *wow* in many different contexts (restricted time and money budgets also influenced the choice for group discussions, and their efficiency to talk with many respondents within a short time). The number of respondents was purposely changed so that the first session had width and not so much depth (six respondents), and the last session had depth and not so much width (three respondents). During the field research respondents did react to each other, but not as much as was hoped. The authors speculate that although the common topic was ‘*wow*’, the topics that were discussed were very diverse and personal, and often did not offer much common grounds for people to react. The gender mix

of respondents was relevant: in groups with mainly men discussions about experience and emotion stayed on the surface, while in mixed groups talking about experience and emotion had more depth. It proved helpful to ask a woman to start talking: this resulted in more depth.

### Questionnaire design

After the field research, the questionnaires were analysed in order to improve them. The researchers studied each respondent's sensitivity as measured in the questionnaire, and each respondent's sensitivity as qualitatively assessed by the researchers during the session. There were many differences between high scores in the questionnaire and high scores in the qualitative assessment. This is probably due to the fact that in the group discussion respondents spontaneously mentioned their own wow experiences – stressing their personal *wow* factors. Whereas the questionnaire aims to measure all possible wow factors – but not enabling respondents to stress several personal *wow* factors. Therefore, an improved questionnaire will be developed, in which respondents can add weights or priorities to several personal *wow* factors. The field research helped to further improve the questionnaire, because it enabled the selection, reformulation and elimination of several questions.

### Conclusions

The experience of *wow* is complex and there are many different kinds of *wow*, determined by qualities of the person, qualities of the context, and qualities of the ICT product or service. The experience of *wow* may happen when the specific sensitivity for *wow* of the person and context is matching with the specific triggering for *wow* of the ICT product or service. This research delivers a provisional list of *wow* factors that characterise both sensitivity and triggering: *nostalgia, fantasy, sensorial experience, amazement, surprise, beauty, exclusivity, budget, comfort, mastery, connectedness, own world, care, competition* and *inspiration*. The authors recommend further research in order to further develop, apply and validate these *wow* factors.

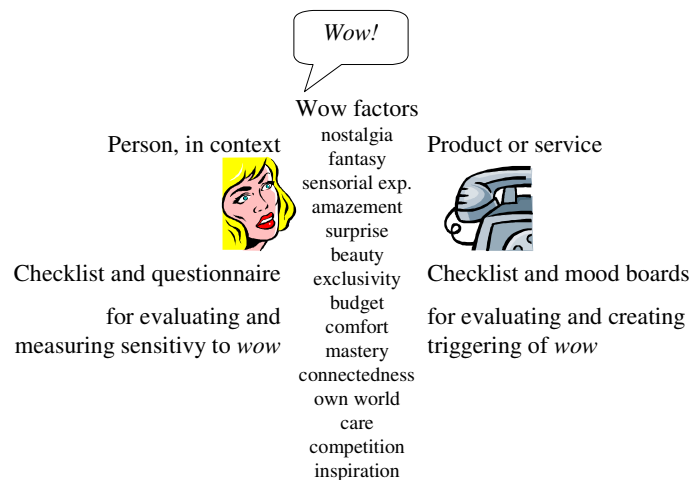


Fig. 3. Tools for evaluating and measuring the sensitivity of person and context to certain wow factors (left), and tools for evaluating and creating products or services with triggering of certain wow factors (right) – the wow experience happens when these match (middle)

The ambition of this paper is to develop two tools, see Fig. 3. The first tool aims to measure the *wow* triggered by ICT product and services, and is meant to be used in market research, e.g. expert reviews, for interviews, focus groups or questionnaires. This tool will consist of a checklist and a questionnaire. The second tool is meant to help create ICT products and services with (more) *wow*, e.g. as inspiration for developing or (re)designing products, functionalities or marketing propositions. This tool will consist of a checklist and *mood boards* for inspiration. These tools are meant to be used in different kinds of innovation projects, e.g. in projects that start with the target group (first their sensitivity is evaluated, then products or services are (re)designed with matching triggering), or in projects that start with the product (first their triggering is evaluated, then target groups with matching sensitivity are (re)formulated).

The authors would like to point out some interesting and relevant questions that need further research: Does *wow* happen *one time*, or can *wow* be an *ongoing* experience? And how can one trigger such an *ongoing wow*? The authors speculate that for e.g. a manufacturer the *one time wow* is more relevant, because it gives customers a reason to buy the product, but for a service provider the *ongoing wow* is more relevant because it gives end-users a reason to keep using the service. And there are questions concerning market segmentation: Can one formulate market segments with different sensitivities to different *wow* experiences? Can current (often socio-demographical) market segments be mapped upon *wow* sensitivity?

## References

- (Csikzentmihalyi, 1990) Csikzentmihalyi, M.: Flow, the psychology of optimal experience. 1990: Harper Collins
- (Desmet, 2002) Pieter Desmet: Designing Emotions, 2002, Delft University of Technology
- (Dillon, 2000) Andrew Dillon, HCI Lab, Indiana University: Understanding and Evaluating the User Experience with Information Spaces ([http://argus-acia.com/acia\\_event/slides/andrew\\_dillon.ppt](http://argus-acia.com/acia_event/slides/andrew_dillon.ppt))
- (Dix e.a., 1998) Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale. Human Computer Interaction, 1998, Prentice Hall Europe
- (Driel, 2002) Kees van Driel: Psychology of entertainment, 2002: University of Amsterdam
- (Frijda, 1986) Nico H. Frijda: The Emotions, 1986, Cambridge University Press
- (Fogg, 2002) B.J. Fogg: Persuasive Technology, 2002, Morgan Kaufmann
- (Hull, Reid & Kidd, 2002) R. Hull, J. Reid, A. Kidd: Experience Design in Pervasive Computing, 2002: HP Laboratories
- (Jordan, 1999) Jordan, P.W.: Designing pleasurable products: An introduction to the new human factors, 1999, Taylor & Francis, London
- (Marcus, 2002) Aaron Marcus: The cult of cute. In: Interactions Nov-Dec 2002
- (Nielsen, 1994) Jacob Nielsen: Usability Engineering, 1994, Morgan Kaufmann.
- (Pine & Gilmore, 1999) Pine & Gilmore: The Experience Economy, 1999, Harvard Business School Press
- (Rijkenberg, 2001) Jan Rijkenberg: Concepting: Creating Successful Brands in a Communications-oriented Era, 2001, World Advertising Research Center
- (Rogers, 1983) Rogers: Diffusion of innovations, 1983, Free Press