

A persuasive Product Service System to communicate between worlds

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G-motiv designs persuasive game products for service-oriented markets in the social, physical and mental healthcare domain. G-Motiv aims to show that persuasive game design can be effectively applied to respond to societal healthcare demands, one of which is aged care. Among G-Motiv's service partners are companies that provide aged care, such as Careyn in Brielle. This project attempts to investigate how persuasive game-based products might enhance existing care services. It should be stated that we do not develop complete Product Service Systems (PSS); we *add* a product to an existing service, leading to a result-oriented PSS^[1]. The result (in this instance, care) is provided to the client and when the project finishes, it becomes possession of the company (Careyn) and is not to be further launched onto the market.

The care provided by Careyn is specialised to serve aged sufferers of Dementia among which Alzheimer Disease (AD) is the most frequently occurring one. A symptom of AD is the impairment of verbal communication abilities of the patient^[4] making it difficult for the care provider to (a) *understand* the behaviour of the patient (e.g. why a patient is searching for her shoes constantly), (b) to *recognise* the care demands of the patient (e.g. when does a patient want care and when do they not), and (c) to *provide* the care to the patient (e.g. take a patient to the park). Summarised, the care-providing service is impaired by communication from patient to care provider, and vice versa. The user research within *What Remains?* showed that this communication problem is especially prevalent during the first months of the care-giving process. It takes about six months for the care providers to learn, by trial and error, how to understand the patient, recognise her care demands, and how to provide appropriate care. *What Remains?* aims to shorten this 'intake' period by facilitating the communication between patient and care provider during the intake process, through shared personal information about the patients' personal history (work, family, preferences, etc.).

The G-Motiv project focuses on the application of game-elements to motivate, persuade and help users towards a desired behaviour (i.e. for the context of *What Remains?* this relates to enhancing patient information for

the care provider, during intake). In order to understand the design for such a game-mediated behavioural change, we developed the Persuasive Game Design model. This shows how gamification design motivates users to experience a game world so as to obtain 'behavioural transfer effects' in the real world ^[6] (see Figure 1). The user experience occupies a central position along the axis of a game world experience and a real world experience. Gamification design motivates the user to shift along this axis towards a game world experience by seducing her with motivating game elements such as fantasy or competition. In the specific context of *What Remains?*, however, the AD suffering patient may already have lost a grasp of the real world: patients in mild to moderate stages of AD have typically lost their ability to recognise their position in the world with regard to time and space ^[5]. Non-patients can easily discern the distinction between game and real worlds just as they can discriminate fiction from non-fiction ^[5]. Generally speaking, the enjoyment and freedom experienced in a game world may even be explained by its distinction from the real world: you might enjoy a game world because it is an escape from the humdrum of daily life or you might enjoy the fact that your actions and empathic relationships have less serious and long-term consequences in a fictional world than in the real world (such as shooting an opponent). In the case of the AD patient, however, this distinction between both worlds is less clear cut. They might not notice the difference between fantasy and real life or between game world experience and real world experience. As a consequence, the communication design of *What Remains?* should match the real world of the care provider to the game world of the patient.

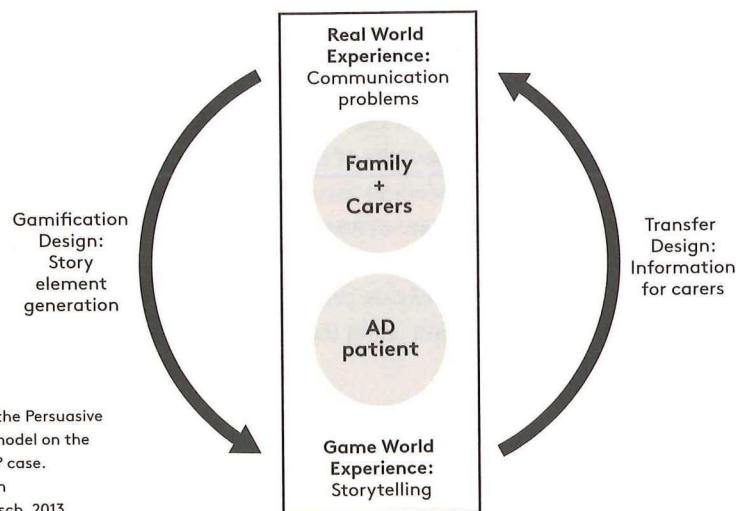


Figure 1:
Application of the Persuasive
Game Design model on the
What Remains? case.
– reprinted from
Cadamuro & Visch, 2013.

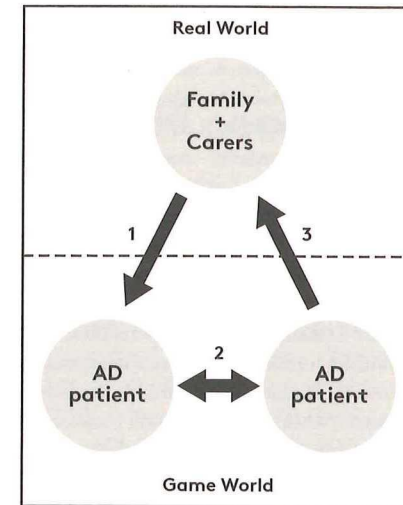


Figure 2:
Interaction processes
in *What Remains?*.

What is interesting about *What Remains?* are the sequenced interaction phases of users and product. In the first phase, family members and care providers upload personal pictures of the patient into the product. These pictures are collected from diverse media (photo albums, the internet) and are digitally uploaded to the *What Remains?* programme (based on Monobanda's 'Mindset' programme) – see arrow 1 in Figure 2. In the second phase, the pictures are printed onto circular pieces of cardboard which are inserted into transparent half-spheres and presented as objects – game pieces as it were – to the patients. Interestingly, the spheres modify the original flat, and difficult to grasp, pictures into graspable objects that show the pictures in a transformed and magically life-like manner – reminiscent of the nostalgic snow globe. The gamification of *What Remains?* thus consists of story elements that can be motivational for the user for the following four reasons: (a) the original picture content is related to the patient's life and may evoke re-living of specific memories, (b) the collection of pictures begs for connecting narratives, (c) the picture as object invites grasping, and (d) the pictorial transformation by the spheres may match the AD suffering patients' perceptual world experience. The motivational objects might lead to the behaviour found during the *What Remains?* research of patients interacting (grasping and grouping) with the object (arrow 2) and to tell the related connecting stories to the care provider and family member (arrow 3). Finally, this storytelling is transferred into valuable real world information for the family member (as remembrance) and for the carer (to understand, recognise and provide), as a personal, tailored care service.

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Fond of cooking

Story 3 — Ellen
James M. Boekbinder

Ellen was extremely passive. She barely responded to the people around her and no longer recognised her daughter. While initially hesitant about the project, her daughter uploaded a number of pictures and we did a session with her. A few of the images caused quite a response – Ellen opened her eyes wide, and became more animated, especially at the pictures showing food. Ellen had been quite fond of good cooking.

Ellen's daughter was surprised by her mother's response to these images of food and cooking, and also of dancing. We tried some music, and again, Ellen responded strongly to it. Her daughter realised that Ellen's love of food was still there. She decided to cook once a week for Ellen and the other six residents of the unit.

In Ellen's case, her daughter came to terms with the limitations Dementia imposed, and the session helped her create a new role for herself, in which she could positively influence her mother's life.

In conclusion...

Communicating with people with severe Dementia is extremely difficult.⁽²⁾ I am convinced that the insights produced by our 'storytelling game' can play a critical role in providing truly personalised care. This becomes more important as late-stage Dementia sets in, and the channel of communication narrows. Personalised care means having more exact knowledge of what a person likes, needs, or doesn't... Residents, their loved ones and carers together can turn insights into interventions that greatly improve the residents' lives.

1. All names have been changed for reasons of confidentiality. Any resemblance to real persons is purely coincidental.
 2. 'Severe' here refers to stage 2 and 3 Dementia.
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