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# MARKETING OF SURVEILLANCE TECHNOLOGY IN THREE AGEING COUNTRIES

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## Abstract

**Purpose** - *To review marketing materials of surveillance products for people with dementia and their carers in three ageing countries, as part of a dementia-technology media analysis.*

**Design/methodology/approach** - *An online environmental scan was conducted using search terms for surveillance technologies (ST) and dementia through a google search focused on the United Kingdom, Sweden, and the Netherlands. Data were extracted on the products' and websites' marketing messages from consumer and marketer perspectives.*

**Findings** - *Information was gathered for 382 product websites, of which 242 met eligibility criteria. The majority of products come from the United Kingdom. In the United Kingdom and Sweden, the companies behind the websites appeared to be mainly 'cottage industries' which focus on selling ST. In contrast, sellers in the Netherlands included a more balanced mixture of small, medium and large companies. In all three countries the website messaging focussed on the need to manage safety concerns, without considering privacy or consent.*

**Implication/value** - *Contrary to the perception of future dependence on technology, the ST sector seems to be a niche market. The media messages, equating people with dementia with animals and children, are at odds with initiatives that strive for dignity and dementia friendliness.*

**Originality/value** - *No previous study is known to have explored media messages from websites that market surveillance technology for people with dementia.*

**Keywords** *surveillance, safety, technology, dementia, carers, marketing, cottage industries, environmental scan, review.*

**Paper type** *Research paper*

## Introduction

The use of technology designed to help ageing populations, especially those with dementia, is rising in social importance. The EU identifies dementia as a societal challenge and highlights the necessity for research on technology-related care (European Commission 2015; European Parliament 2011). Technology is perceived as promising, and significant investments have been made to advance older people's access to, and uptake of, technological products (European Commission 2007; European Commission 2015). On a national level, social policies and market priorities seek to facilitate 'ageing in place' through the use of technology (Kubitschke et al. 2010; van Hoof et al. 2010) which delays institutionalisation; encourages people to remain in their own home in later life (Brittain et al. 2010); saves costs (Duff & Dolphin 2007) and reduces caregiver burden (McHugh et al. 2012). Accordingly, technology, as part of healthcare delivery for people living with dementia, is expected to grow in Europe (Kubitschke et al. 2010; Dutta et al. 2015; WHO, 2012; van Hoof et al. 2010; EPRS 2016).

### *Surveillance Technology*

Surveillance Technologies (STs) are devices which monitor movements with the intention to cost-effectively support health and independence (Woolrych et al. 2013). ST has particular relevance for family carers of people with dementia (Berridge et al. 2014). ST can be generally described as comprising "monitoring systems that can allow for 24-hour supervision by carers" (Kenner 2008), with specific technologies including, but not limited to: monitoring devices, personal and social alarms, telecare, electric tagging and tracking, and Global Positioning System (Landau & Werner 2012; Percival & Hanson 2006; Robinson et al. 2007; Niemeijer 2015; Mental Welfare Commission for Scotland, 2005). ST can be used to monitor people with dementia so that a carer can intervene as appropriate to increase safety (Niemeijer 2015).

### *'Ageing in place' in the United Kingdom, Sweden and the Netherlands*

In common with many other nations, the United Kingdom (UK), Sweden (SWE), and the Netherlands (NL) all have ageing populations. Projections show that life expectancy for 65 year olds is similar in each of these countries (UK 17.9; NL 18.2; SWE 19.8), and the

proportion of older adults who live alone is also similar (UK 32%; NL 32.2%; SWE 39%) (Eurostat 2015; Office for National Statistics 2017). As these societies age, the number of vulnerable people requiring long-term care also increases (Berridge et al. 2014; Niemeijer 2015). A European study found a variety of reasons for family carers seeking to place the person living with dementia whom they care for in a care home, with common reasons including care dependency and caregiver burden (Afram et al. 2014). The use of technology has been identified as a potential solution to help carers and people with dementia to remain living in their own home, lighten the care burden, and to support caregiving (Berridge et al. 2014; Kubitschke et al. 2010; Bharucha et al. 2009; Cahill et al. 2007; Kenner 2008; Pollack 2005; Topo 2009).

In the UK, the government ageing agenda has an eye to cost (Duijnste 1992; Goins et al. 2002; Kodner 2003; Walker 2008). The UK National Health Service and Community Care Act (1990) highlighted the need to incorporate market forces in the delivery of services that facilitate 'ageing in place' as opposed to more institutionalised care settings (WAG, 2011; Department of Health, 2006, 2009; Department of Health Social Services and Public Safety, 2011; Phillipson, 1998; The Scottish Government., 2010). Despite the differences in health care systems, the Netherlands and Sweden also have national health and social policies that promote the move from institutional care to 'ageing in place' (Kümpers 2005; Wimo et al. 1999). The capacity to leverage technology for increased well-being is measured by the 'Networked Readiness Index', which is similar to those in the UK, Sweden and the Netherlands (Dutta et al. 2015).

### *Marketing Surveillance Technology*

Marketers have begun to recognize the importance of ST as a market and, accordingly, there has been an increase in numbers of such technological products being sold, particularly through online platforms (Rialle et al., 2008; Robinson, et al., 2009; Wan, et al., 2016). The knowledge base on how ST products for dementia are marketed is very limited, with little beyond the work of Kenner (2008) who describes an 'aging enterprise' which constitutes technologies as part of a privatized consumer healthcare trend (p.262); a trend which might not be influenced by older adults, but rather by other external pressures. These pressures

include discourses that influence our understanding about diseases, as well as those affected by them, and which are often framed and negotiated through media messages (Clarke 2006; Collin & Hughes 2011; Lyons 2000; Seale 2003; Williamson & Skinner 2011). Clarke (2006) described the importance of recognizing the relations between media, disease representations, and the interests of powerful organisations who play on underlying fears to market products that offer a solution (Fuller 1998). Clarke, (2006) called for a 'dementia media analysis' (Miller et al., 2012; Kleebung 2010) to identify and assess what cultural stereotypes and values underlie the media messages that describe and portray people with dementia.

### *Aim*

The aims of this paper are to (1) investigate the online market for surveillance products for people with dementia in three comparable, ageing countries (UK, SWE, and NL), and to describe the marketers' characteristics; and (2) to respond to the call for dementia media analysis by exploring the marketing messages in online advertisements for surveillance technologies for people with dementia.

### **Method**

#### *Environmental scan*

To identify surveillance products used in dementia care, and explore media messaging used by marketers, environmental scan methodology was used, adapted from a procedure of Choo and colleagues (Choo, Auster, 1993; Choo, 1999, 2001). Environmental scanning is an information viewing, seeking and organizational learning strategy (Aguilar, 1967; Choo & Auster, 1993; Choo, 2001) through which companies get to 'know' the market in which they are situated and are able to effectively respond (Choo 1993). Originating in a company context, health care researchers have started using environmental scans (Graham et al. 2008); however, there is not, as yet, a standardised approach to environmental scanning (Choo & Auster, 1993; Choo, 1999, 2001). A common approach is to seek answers to a set of pre-defined questions regarding the product of interest (Graham et al. 2008).

To provide information on the ST market for people with dementia and their carers, the environmental scan detailed in this paper entailed (1) an online product search (2) selection

of eligible products through application of pre-defined eligibility criteria (3) extraction of product data and marketing messages through answering a set of questions for each eligible product (4) data synthesis through both qualitative and quantitative means.

### *Search strategy*

An internet search for surveillance products was carried out using the Google search engine. Search terms and their synonyms are shown in English in table 1. Each search term was translated into Dutch and Swedish for product searches in the Netherlands and Sweden respectively (translated search teams available on request).

**Table 1** Search terms (English)

<b><i>Search word</i></b>	<b><i>Synonyms</i></b>
<i>Surveillance Technology</i>	<i>Surveillance technologies, devices, products, assistive, GPS, tracking, tagging, tracker, track, monitor, locate, locator</i>
<i>Dementia</i>	<i>Alzheimer, Alzheimer's, person with dementia, people with dementia</i>
<i>Carer</i>	<i>informal caregiver, caregiver, Family caregiver, family carer</i>
<i>UK</i>	<i>United Kingdom, England, Great Britain</i>
<i>AND ...OR</i>	<i>Safety, independence, empowerment, risk, danger, alert, peace of mind, consent, informed consent</i>

### *Eligibility criteria*

The product web-descriptions identified in the online search were assessed for eligibility using pre-defined eligibility criteria.

The inclusion criteria were:

- technological device that tracks and/or alerts;
- marketing makes reference to dementia, Alzheimer's or similar
- product can be used by a person with dementia or a carer;
- marketing website based in the Netherlands, United Kingdom or Sweden;
- marketing of the product targets care homes, institutions, people with dementia or carers.

Exclusion criteria were:

- 'non-technical' products
- manufacturer not involved in retail
- traders between the manufacturer and marketing website
- website designers
- webpages marketing second-hand, previously used, or previously owned goods

Three researchers (English, Dutch and Swedish) were involved in developing the search criteria and screening the websites for information. Every website with at least two of the keywords was selected for further analysis. The researchers placed field notes in the data set, and provided descriptions of what was portrayed on websites. When a product was entered, the reviewer would screen for duplicates by the excel search function in the data set. If a duplicate was found, the new product would not be entered. However, there was a possibility that similar products were displayed by alternative websites under different circumstances. Therefore, the reviewer screened again the data set to remove repetition and irrelevant products (for example, non-technological products sold on Amazon). This removal was carried out twice after the exclusion criteria. Duplicates of products were included only if they were provided by alternative websites using different marketing techniques.

#### *Data extraction*

A draft data extraction tool was devised, based on domains relevant to characteristics of products and marketers, and the anticipated information needs of potential users. The draft tool was validated through discussion with researchers from a 'dementia and technology network' (INDUCT) and piloted by the first author after which additional subcategories (market share and growth) were added. The final data extraction tool covered 9 domains, extracting information on: identification; marketer characteristics; product functional availability; target market, sales; safety; privacy and portrayals (Table 2).

The extracted data was entered into an excel spreadsheet, in formats suitable for the nature of the data. Data types included nominal, categorical, numerical and qualitative formats (table 2). Qualitative data included quotations from websites. Data were collected over a

period of one year, between October 2016 and October 2017 with data regarding product prices gathered on the same day in August 2017.

When websites did not provide information about the marketer that provided the product (e.g. size of marketer, country origin, number of employees), additional public-domain information was gathered online, for example from LinkedIn. Classification of the size of the marketing organisation was based on the number of employees within that organisation, with 'cottage industry' defined as "a small-scale informally organized industry run from home" (Investopedia LLC 2017) and operationalised as "online web shop indicative of; its location being a private house, a private phone number communicated, or listed with one employee usually described as the owner". Small scale companies were defined as having a maximum of 10 employees; small-medium between 10 and 50, medium-large between 50 and 200; large more than 200 employees.

**Table 2** Data extraction items and data types

	Domain	Item	Data type
1	Identifiers	Product name Company / organisation name	Nominal Nominal
2	Marketer characteristics	Organisation size Market share / growth	Categorical (cottage industry, small, small medium, medium, large) Numerical
3	Product function	Main function Additional information	Categorical (track, alarm, track & alarm) Qualitative
4	Availability	Availability in Sweden, UK, Netherlands? Country of product origin Availability online / in store	Categorical (Yes/No) Categorical (Sweden, UK, Netherlands, Other) Categorical (online, in store, both, other)
5	Target market	Target purchasers Target end users	Categorical (consumer, care home, company, other) Categorical (person with dementia, carer, unclear)
6	Sales	Price <sup>+</sup> Additional information	Numerical Qualitative
7	Safety	Safety messaging Additional explanation	Categorical (User activated alert, User alerted, Alerts carer, Alerts both, other) Qualitative
8	Privacy	Access to data Additional explanation	Categorical (user only, carer only, user & carer, 3 <sup>rd</sup> party, other) Qualitative
9	Portrayals	Presence of portrayals Keywords	Categorical (Yes/No) Nominal

\* If the origin of a product was unclear, it was classified according to the country in which it could be purchased.

\* \* Purchase price excluded monthly fees or shipping costs.

### *Data analysis*

Price conversions were made into pounds and the Excel 'AVERAGE' function was used for calculating the mean purchase prices. The 'COUNTIF' function was used to summarise the frequency of specific words in nominal data (e.g. 'safety'). For categorical items the SUM function was used.

### **Findings**

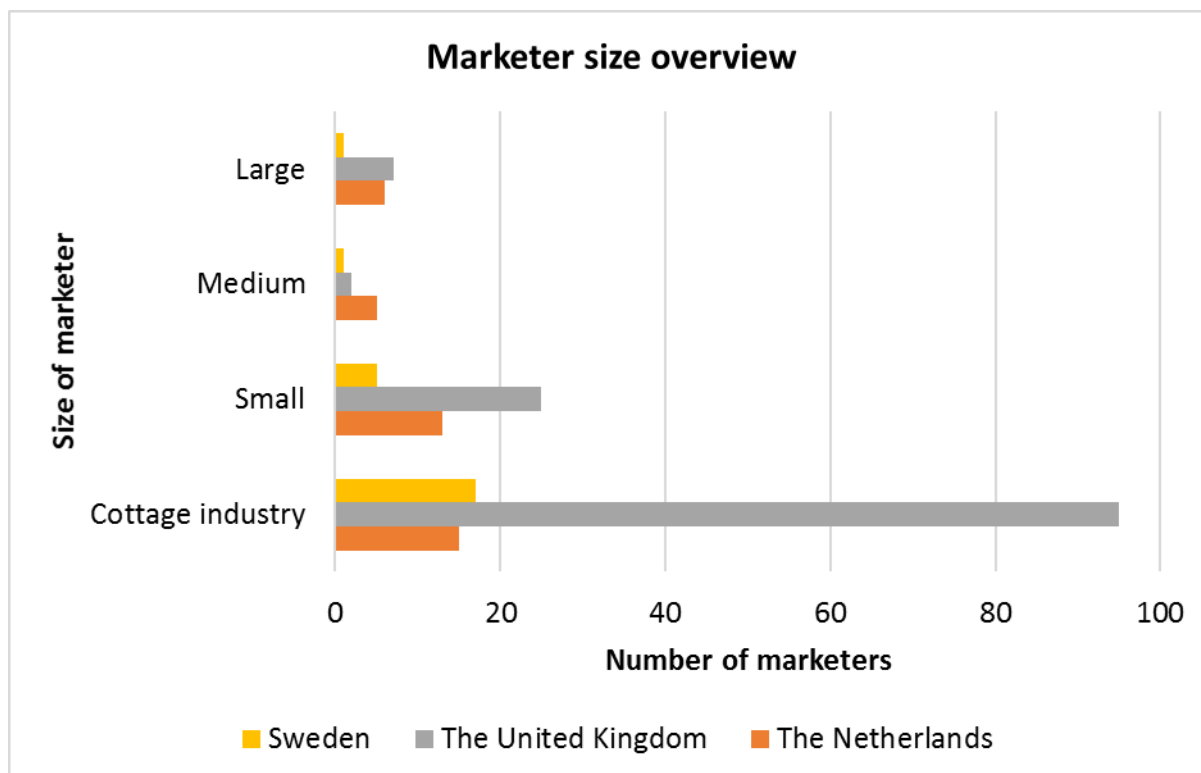
In total, 382 products were identified online. After the application of the eligibility criteria and removal of duplicates, 242 products remained. Reasons for exclusion included: being 'non-technical' products e.g. identification bracelets without tracking facility; networking facility without detection monitors (e.g. for temperature, light or fire<sup>i</sup>). In descending order of frequency, the identified products originated from: the UK, Australia, the United States, Sweden and the Netherlands.

### *Price*

The purchase price of ST displayed ranges from £0 to £654 in the three countries, with similar products priced differently by different providers. Thirteen products were under £10. The headline price displayed often included extras (i.e. shipping costs, monthly fees). However, the mean price is unknown because many websites displayed neither prices, nor included extras.

### *Marketers*





**Figure 1** What is known about the size of the marketer?

Figure 1 displays the response to the question “*what is the size of the marketer*”. The ‘cottage industry’ category was the largest single category in all three countries, marketing through single-handed online web shops or companies with up to ten employees. Whereas the majority of ST marketers in the UK and Sweden were cottage industries, there was a different pattern in the Netherlands where there was more balance across size of company. Many marketers in the dataset made unsubstantiated claims to be the market leader.

### Safety

In scanning the web-descriptions for “*what is mainly communicated about what the product does for safety*”, two main types of products were elicited; products that ‘detect’ and those that ‘alert’. The latter required that the person with dementia should push an alert button in case of emergency, or that somehow the carer was made aware of an emergency, although there was generally scant detail on how, when, where or to whom alerts would be raised. Most of the detectors did not send notifications. However, some products both detected

and alerted, for example a tracker watch that could notify the carer with information about the recipients' location and health status.

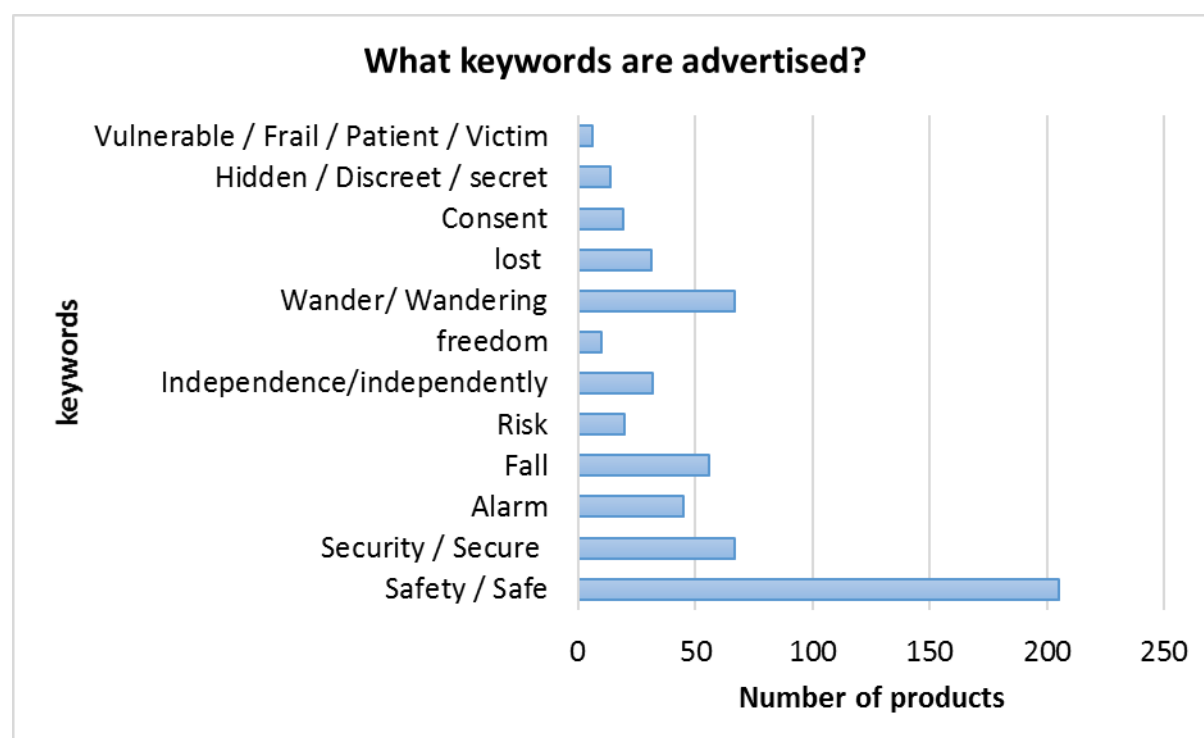
*"The ... can act as both a locator for keys and bags or a tracking device for a loved one, to help keep them safe if they wander"* Location tracker – cottage industry 1.

Location finding may require the carer to access real-time monitoring on a computer or phone (Kenner 2008; Mulvenna et al. 2017).

*"Ideal for monitoring: pets (e.g. dogs / cats / horses etc...), children / teenagers of all ages & abilities, vulnerable adults or frail elderly who may misuse the SOS & on / off buttons e.g. autism, Alzheimer's / dementia sufferers"* SOS button - cottage industry 2.

A minority of products were described as 'preventing risk'; however, little or no explanation was provided on the mechanism for this.

#### Marketing by keywords and portrayals



**Figure 2:** The keywords advertised on providers' web-descriptions

Figure 2 illustrates the key descriptors used on websites. The greatest emphasis was on safety and security. The target problems were wandering, being lost, and falls. There were differences in the diversity of keywords used in each of the three countries. In Sweden, keywords were descriptive of 'spy' and 'camera'. In the Netherlands 'sensor' was a common keyword. In the UK words such as 'ethics' and 'consent' were used, which remarkably were not used in Sweden and the Netherlands. However, the word 'consent' was not used in relation to having have approval to use ST on a person with dementia. Instead, words such as 'hidden', 'discreet' and 'secret' were used, indicating covert surveillance.

Keywords were often accompanied by striking visuals of people with dementia, pets, children, and possessions, either kept safe through ST use, or portrayals of being lost and harmed through non-use of ST. No major between-country differences were identified in visual portrayals.

#### *Marketing target*

There were no examples of marketing messages being targeted at people living with dementia. Instead, messages were aimed at families and carers, researchers or organisations involved in social care provision:

*"... provides an ideal way for families and caregivers to keep track of the people they love. Ideal for children....and seniors who value their independence. It's all about having peace of mind when you're not there with them"* location tracker – cottage industry 3.

*"Our customers include: dementia & Alzheimer's patients, stroke patients, local councils, care homes, schools, rehabilitation centers, dementia research groups, universities, cautious parents, travelers / employers"* location tracker, cottage industry 4.

#### *Privacy*

Most products identified through the environmental scan required data-sharing. The majority reported that carers would receive data, such as the location of the person with dementia. However, the second largest group involved data-sharing with third parties (e.g. online cloud storage, alarm centre).

*“GPS personal alarm and its 24/7 response service lets you to carry on with your life knowing that there is help available at the press of a button”* location tracker with SOS button – Cottage industry 5

Few ST reported that they provided the person with dementia with the data of their location or gave them instructions to guide them home although this is an expressed need of people with dementia (Robinson et al. 2009).

## **Discussion**

This paper represents the first media analysis of online marketing of surveillance products for use with people with dementia. The key finding about marketers was that they were predominantly ‘cottage industries’, especially in the UK. In all three countries, the products being marketed were generally unsophisticated, able to either detect *or* alert, rather than both. Product descriptions emphasised safety and security, referencing risk situations such as wandering, falling or being lost, even where the product had no function that would prevent such risk. Advertising was targeted at carers or service providers, and not people with dementia. People with dementia were commonly portrayed as a ‘problem to be managed’, and consideration of ethical issues (such as freedom to choose, consent and covert surveillance), whilst varying by country, was largely absent.

### *Niche market?*

Huge investments have been made in the research and development of telehealth and telecare (Department of Health 2008; Woolrych et al. 2013), including the Whole System Demonstrator randomised controlled trial (Steventon et al., 2013) and NHS testbeds such as ‘Technology Integrated Health Management for dementia’ (Galea et al., 2017). Yet, counterintuitively, the majority of marketers identified in the environmental scan were ‘cottage industries’ suggesting a ‘niche market’. This finding may be due to data collection being by *product* rather than by *market-share*. The UK has a large home-care social alarms market, and is a significant adopter of telecare (Taylor 2012; Goodwin 2010; Kamalasekar 2010; Gibson et al. 2016). People who meet the eligibility standards for social care can access pendant alarms commissioned by local authorities (Berridge et al. 2014). In Sweden, municipalities pay for alarm installation, and users contribute to this monthly service. There is a mix of public and private sector provision, with private manufacturers financing much of

the research and development into advanced telecare (Berridge et al. 2014). In the Netherlands, the social security system, municipalities, well-being organisations, and other home-care organisations provide alarms but payments are not standardised but vary according to who is using the technology, and for what purpose (Kubitschke et al. 2010).

### *Not 'fit for purpose'?*

The number of websites claiming to be 'market leader' suggests that a certain amount of creative licence was employed in advertising, and it was clear that many products had been re-purposed' for the dementia market having originally been designed for a different use.

People living with dementia have expressed the need for technologies to have a simple user interface that can be tailored to individual needs and skills, that allows people with dementia to engage in everyday activity and allows carers to have a break knowing that they will receive an alert if risk situations arise (Dixon, 2016), such as personalised notifications when the person with dementia leaves an area of safety (Phillips & Zhao 1993; Schulz et al. 2012; Schulz 2012). However, the majority of identified products could either detect *or* alert, *or* required real-time monitoring.

Carers have concerns over false alarms (Dixon, 2016; Niemeijer 2015; Hall et al. 2017), privacy (Dixon, 2016), and data-sharing with other parties (Robinson et al. 2007; Fisk 2015; Niemeijer 2015) yet most products involved third parties such as call-centres. Product descriptions included only limited information on functionality, and focused instead on risks such as falling, wandering and getting lost. Whilst promotion of ST products emphasises independence and safety (Kenner 2008), this outcome has not necessarily been established through research (Futrell & Melillo, 2002; Hughes, 2008a, 2008b; Marr, 1989; MWCS, 2005; Moffat, 2008; Nelson et al., 2004; Niemeijer, 2015; Plastow, 2006; Robinson et al., 2007; Sävenstedt, et al., 2006; Welsh, et al., 2003). Alerts from ST devices can signal when a fall happens, but do not avert the fall. The question posed by Niemeijer and colleagues (2015, p.124) therefore remains unanswered "... does ST actually offer more security?".

Throughout the EU there is an expectation that businesses to not misrepresent their products when advertising to consumers (Collins 2005; Van Boom 2015). The 'Unfair Commercial Practices' directive underpins the national advertising authorities in the UK, the

Netherlands and Sweden (Advertising Standards Authority Ltd 2018; Netherlands Enterprise Agency 2018; Reklamombudsmannen 2017). Consumers in the three countries can submit complaints about misleading advertisements, and companies are penalized where complaints are upheld. However, problematic practices are not always addressed (Van Boom 2015) and in a media-rich online environment consumers may not be aware of being misled (Van Boom 2015; Mitra et al. 2008).

### *Portrayals of dementia*

The portrayal of people with dementia as a 'problem to be managed' has been highlighted in previous research (Roanova et al. 2016). Placing people with dementia in the same class as wallets, keys, young children, dogs and/or prisoners is reminiscent of the 'objectification' described in healthcare prior to the person-centred care movement, and is concordant with 'abjection'; a defining feature of the social imaginary of the fourth age (Higgs & Gilleard, 2014). Marketers may have simply adapted existing advertising materials when dementia care was identified as a potential new market, assuming a lack of autonomy and decision-making capacity in line with the 'empty shell' portrayal of dementia (Alzheimer Europe, 2013).

No marketing was directed at the person with dementia themselves even though people in early stages of dementia may choose to engage with surveillance technology, for example actively seeking out devices such as ST bracelets (Niemeijer 2015), safe in the knowledge that they can be monitored by a 'supportive other'. In these circumstances, surveillance technology can indeed help to maintain independence (Essén, 2008) and freedom (Dorrestijn & Verbeek 2013), reflecting Foucault's (2000) notion of freedom incorporating an individual's conscious choice to use technology.

There was between-country discrepancy in use of terms such as 'ethics' and 'consent', but none of the marketers considered personal choice of the person with dementia. Little information was provided on the acceptability of surveillance devices from the perspective of people with dementia. Whilst most products are solely designed for, and used by, carers (Topo 2009; Demers et al. 2009), this should not mean that the perspective of the person with dementia should be ignored. Some people may not like having an unfamiliar device

attached to them (McShane et al., 1998; Wan et al., 2016) and may take off items such as pendants or bracelets. As Niemeijer and colleagues (2015) observed, when an ST bracelet is taken off, it no longer does its job. This may explain the emphasis on 'hidden' devices for covert monitoring.

Media representations of dementia can influence interactions with people with dementia and make a difference to the utilisation of health care resources (Kessler & Schwender 2012). Bodies now exist that review and counteract media messages. For example, the Glasgow Media Group (GMG) reviewed various claims used in the media (e.g. issues of war, representations of AIDS, communications of risk), and how this impacts negatively on certain groups (e.g. refugees, disabled people) (Briant, Watson & Philo 2011; Eldridge 2000). Whilst members of the GMG have worked, and continue to work, to publicise their critiques (Eldridge 2000), unhelpful media coverage of dementia keeps on growing (Kessler & Schwender 2012).

### *Implications for stakeholders*

There are important implications from this study for a range of stakeholders including manufacturers, marketers, the media, and researchers, in addition to all those living with dementia. Families, and people living with dementia themselves, should consider the power of media messaging which may present out-of-date and inappropriate technology as 'tried and tested' or 'market leading', or may emphasise safety-enhancement or risk reduction for products that provide only 'after the event' alerts. Organisations that support people with dementia and their families could play a role in highlighting some of the decisions that need to be made, such as whether a product has the appropriate combination of detection and alerting functions to suit an individual's particular circumstances. In addition, support organisations could also highlight ethical considerations of surveillance, for example whether a person with dementia themselves is choosing to use technology, or whether carers are making choices in circumstances that do not yet require 'best interests' decision-making (for an illustration of carer fears over safety leading to autonomy restriction see Graneheim et al. 2001). Manufacturers and marketers should pay closer attention to the potential market of people in the early stages of dementia who can express their own needs

and preferences. Furthermore, marketers and the media should be made aware of the potential for stigma-exacerbation from media messages that objectify people with dementia.

## Conclusion

This paper draws attention to an emerging issue of ST for people with dementia. The marketing of ST does not take into consideration the needs of people with dementia themselves. Marketing of surveillance technologies raises issues of rights, autonomy, dignity, privacy and consent but all too often the marketers' messages run counter to the maintenance of dignity in later life.

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<sup>i</sup> Detection monitors that raise alerts are used to manage potential risk situations, for example when a person with dementia continues to use their own kitchen but is at risk of causing a fire by forgetting to turn off the gas to the stove.