

A large, stylized blue lion graphic is positioned on the right side of the slide. The lion is depicted in a heraldic style, facing right, with its mouth open as if roaring. The background of the slide is a solid dark blue, and the lion is rendered in a lighter shade of blue.

How ITS can maintain older drivers' mobility

Christopher Emmerson

Introduction

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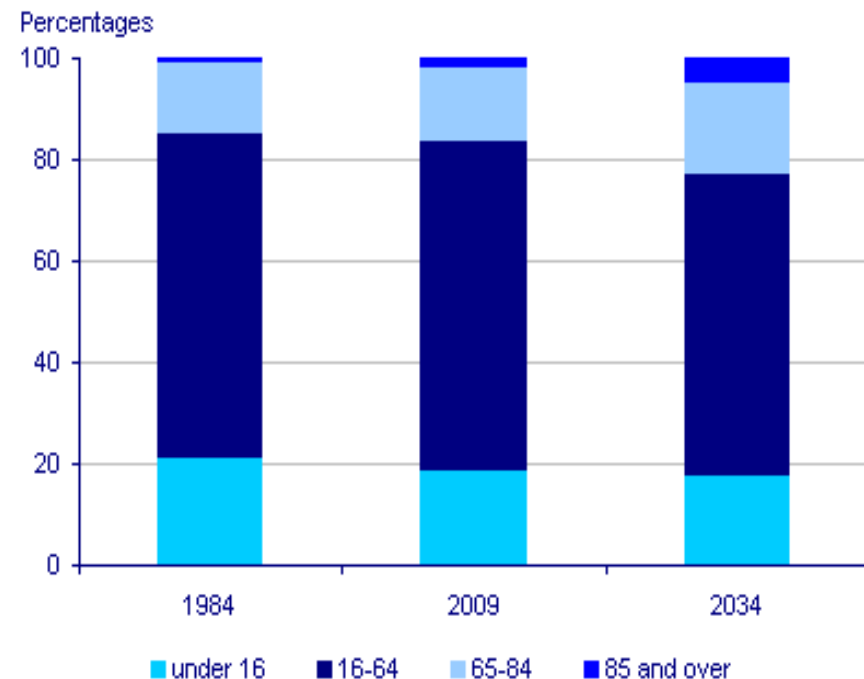
Questions



Context of the research

- The UK along with the rest of the developed world, has an aging population
- By 2034, 23% of the projected UK population will be aged 65 and over, compared to 18% aged 16 and lower
- Similar aging trends are found in other developed countries

Population by age in the UK



Aging population and driving in the UK

- **In 1975, 26% of women and 69% of men held full car driving licences**
- **By 2006, 63% of women and 81% of men held full car driving licences**
- **Gender gap is narrowing**
- **Car is the dominant mode of travel now and in the future**

Functional Declines with Age

- “ Ability to move neck, head, limbs and hips
- “ Ability to handle the vehicle (doors, steer wheel, pedals, hand brake, gearbox)
- “ Ability to maintain functional vision (focus, glare sensitivity, peripheral vision, night vision)
- “ Ability to focus despite distractions on the road
- “ Ability to make quick decision and react decisively

Driving Cessation: The effects

- **The effects of cessation, regardless of how it occurs, can be significant:**
 - **Increased levels of depression;**
 - **Reduced time spent out of the house;**
 - **Reduced social activities undertaken;**
 - **Reduced wellbeing;**
 - **Associated with an increased risk of nursing home placement; and**
 - **A symbol of becoming old.**
- **Implications of smaller social networks and location**

Driving Cessation: Why people give up

- **Why people give up:**
 - **Poor vision;**
 - **Poor self-rated health;**
 - **Reduced cognitive speed of processing;**
 - **Older age;**
 - **Illness;**
 - **Female Gender; and**
 - **Household composition.**
- **The reasons for driver cessation are often complex as themes of health, income and family intervention have all been noted**
- **Generally a gradual process but can occur instantly**

Self-regulation

- **Avoid or adjust driving behaviour in conditions:**
 - **Night time;**
 - **Unfamiliar roads; and**
 - **In heavy traffic.**
- **A measure of comfort/confidence**
- **Benefit of the private car**

SiDE Project

- **The SiDE project is aimed at tackling social exclusion, by making easier for people to access the life changing benefits offered by the digital economy**



SiDE

Social inclusion through the digital economy
transport

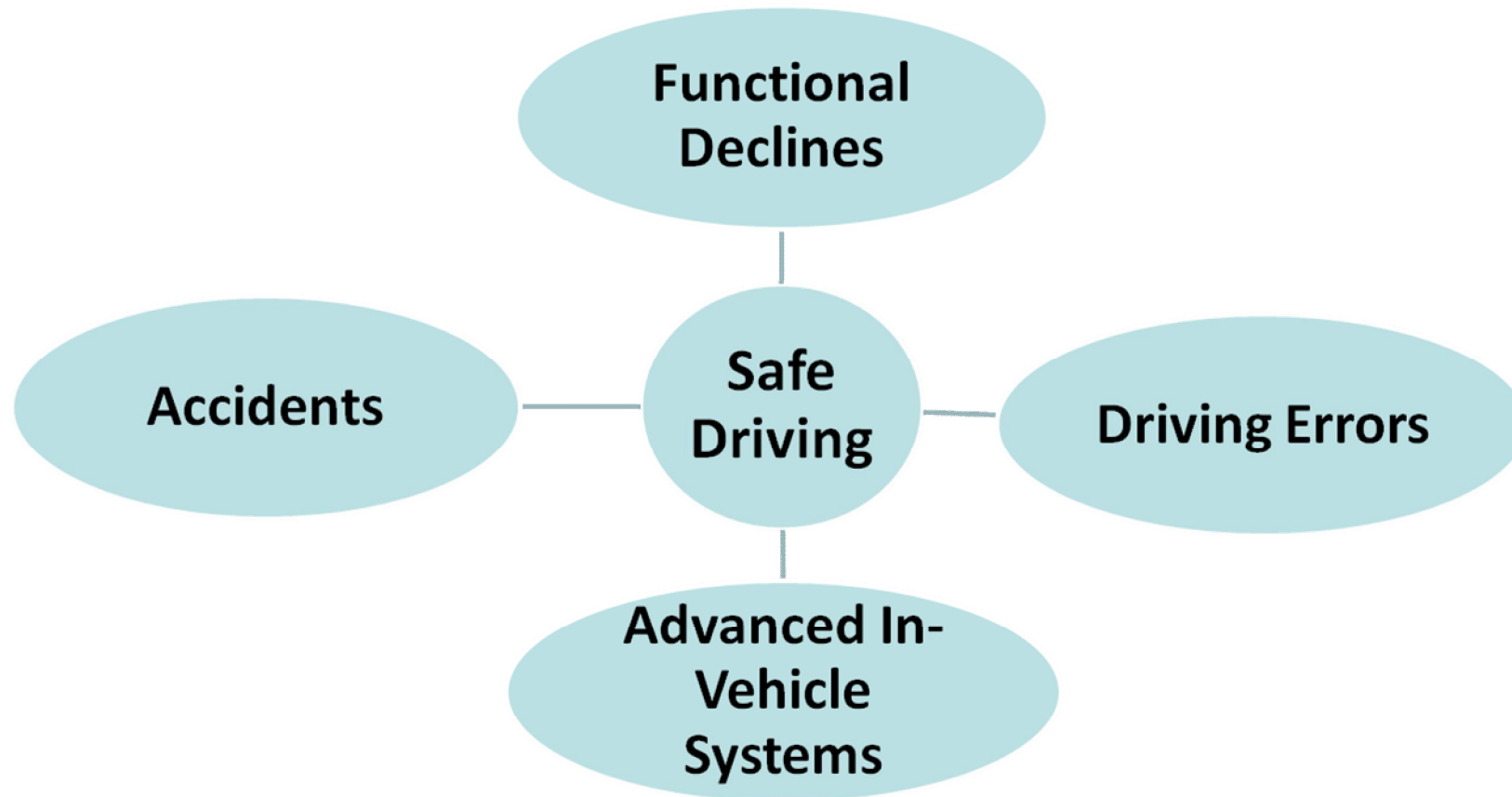


SiDE Project

- **User Pool 3000+**
- **SiDE EV Car**
- **Driving Simulator**



SiDE's Older driver study



How ITS can maintain mobility

- **Use of Advanced In-Vehicle Systems**
- **It is generally accepted in the literature that IVS could have the potential to enhance older drivers safety and mobility**
- **Davidse (2006) showed that older drivers are willing to consider using devices to aid their driving**
- **Limited research has occurred to date on IVS**

Advanced In-Vehicle Systems

- ” **Adaptive Cruise Control (ACC)**
- ” **Lane Departure Warning (LDW)**
- ” **Blind Spot Detection (BSD)**
- ” **Night Vision (NV)**
- ” **In-Vehicle Navigation (IVN)**
- ” **Intelligent Parking Assist (IPA)**
- ” **Obstacle and Collision Warning (OCW)**
- ” **Electronic Brake Assist (EBA)**

In-Vehicle Navigation (IVN)

- **The need for IVN:**
 - **Poor sense of direction**
 - **Reduced time on unfamiliar roads**
 - **Misread signs / fail to notice signs**
 - **Reduced wayfinding capabilities**
 - **Have common lapses:**
 - **Taking the wrong turn at a roundabout**
 - **Getting into the wrong lane at junctions**

Aims of the research

- **Understand older drivers' perceptions and current practises in the UK**
- **Investigate the current use of in-vehicle navigation (IVN)**
- **Develop a IVN from the end users perspective with the potential incorporation with other AIVS**

Methods

- **Gain an in-depth understanding of needs and issues of older drivers**
- **With the use of the SiDE user pool use participants as co-researchers**
- **Develop a IVN from the end users**
- **Trial the IVN in a driving simulator**

Outcomes

- **Understand the needs of older drivers**
- **Develop a IVN from the end users perspective**
- **Build upon current research and develop further research on how IVS and ITS can maintain safe driving**

Questions?

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