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**Creators:** Devecchi, C., Mintz, J. and March, C.

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**Version:** Presented version [slideshow]

<http://nectar.northampton.ac.uk/5826/>





Helping Autism/Diagnosed to  
Navigate and Develop Socially

QuickTime™ and a  
decompressor  
are needed to see this picture.

# Supporting user participation in developing mobile technology to help young people with autism: the HANDS smartphone project

Dr Cristina Devecchi, Joseph Mintz & Caty  
March

*London South Bank University, UK*

ICICTE 2009, 9-11 July, Corfu, Greece



# User engagement and student consultation

- ‘Listening and responding to what pupils say about their experience as learners can be a powerful tool in helping teachers to investigate and improve their own practice’ (Flutter, 2007)
- ‘pupil voice approach can be an important catalyst for change by encouraging teachers to explore, and to think about what happens in the classroom’ (Rudduck and Flutter, 2003)



# Developing new software: few reasons why listening to young people matters

1. Effective implementation of change requires participation from all those involved, including the students;
2. Students have unique knowledge and perspectives that can make the implementation more successful;
3. Students' views can mobilise parents and staff;
4. Consulting pupil with intellectual disabilities can support inclusion and meaningful participation
5. Consulting pupils with intellectual disabilities challenges the view that these children are just passive recipients of intervention
6. Consultation and participation indirectly support the teaching of social and communicative skills



# This presentation ...

- Outlines the HANDS project and the methodology used to consult children with autism
- Looks at some of the findings
- Concludes with some methodological suggestions



# **THE *HANDS* PROJECT**



# What is HANDS?

<http://hands.hum.aau.dk>

**HANDS** stands for **Helping Autism Diagnosed to Navigate and Develop Socially**.

It is a multidisciplinary European project commissioned under Framework 7 *Challenge 7: ICT for Independent Living and Inclusion*.

## Universities

- Aalborg University, Denmark
- ELTE University, Hungary
- London South Bank University

## Special schools

- Helen Allison School, UK
- Egebakken School, Denmark,
- Autism Foundation School, Hungary
- Svenskolan School, Sweden

## Software companies

- Wirtek (Denmark and Romania)
- Edvantage (Norway)



# Why a mobile device for children with autism?

- Evidence shows that children are motivated to use technology
- It's mobile, ubiquitous, and personal
- Can create a link between motivational input in the classroom and at home and other locations – can “be there” when problems occur
- It can be customized for individual needs and interests
- It allows students to work at their own pace and it is not judgmental
- It is predictable



# The mobile solution: design components

## The **Handy Interactive Persuasive Diary (HIPD)**

An interactive calendar function with usual calendar facilities, but also with configurable and programmable abilities and 'knowledge' about situations where the user is more likely to be 'persuaded' to adopt a new behaviour or attitude.



## The **Simple Safe-Success Instructor (SSSI)**

An instructor function, which gives precise and practical advice on how to solve a given problem. E.g. how to travel by public transportation. The Simple-Safe-Success Instructor can be integrated into the HIPD.

## **Tin - The Individualizer**

Customization in terms of both aesthetic aspects of the interface and in terms of the presented functionality.

## The **Personal Trainer (PT)**

A training function which is basically a simulator of problematic situations with concrete and practical advice input, given with the necessary credibility.

## The **SharingPoint(SPo)**

It allows the users to share their knowledge, experience and interests, thus facilitating a protected creative environment for young people with ASD



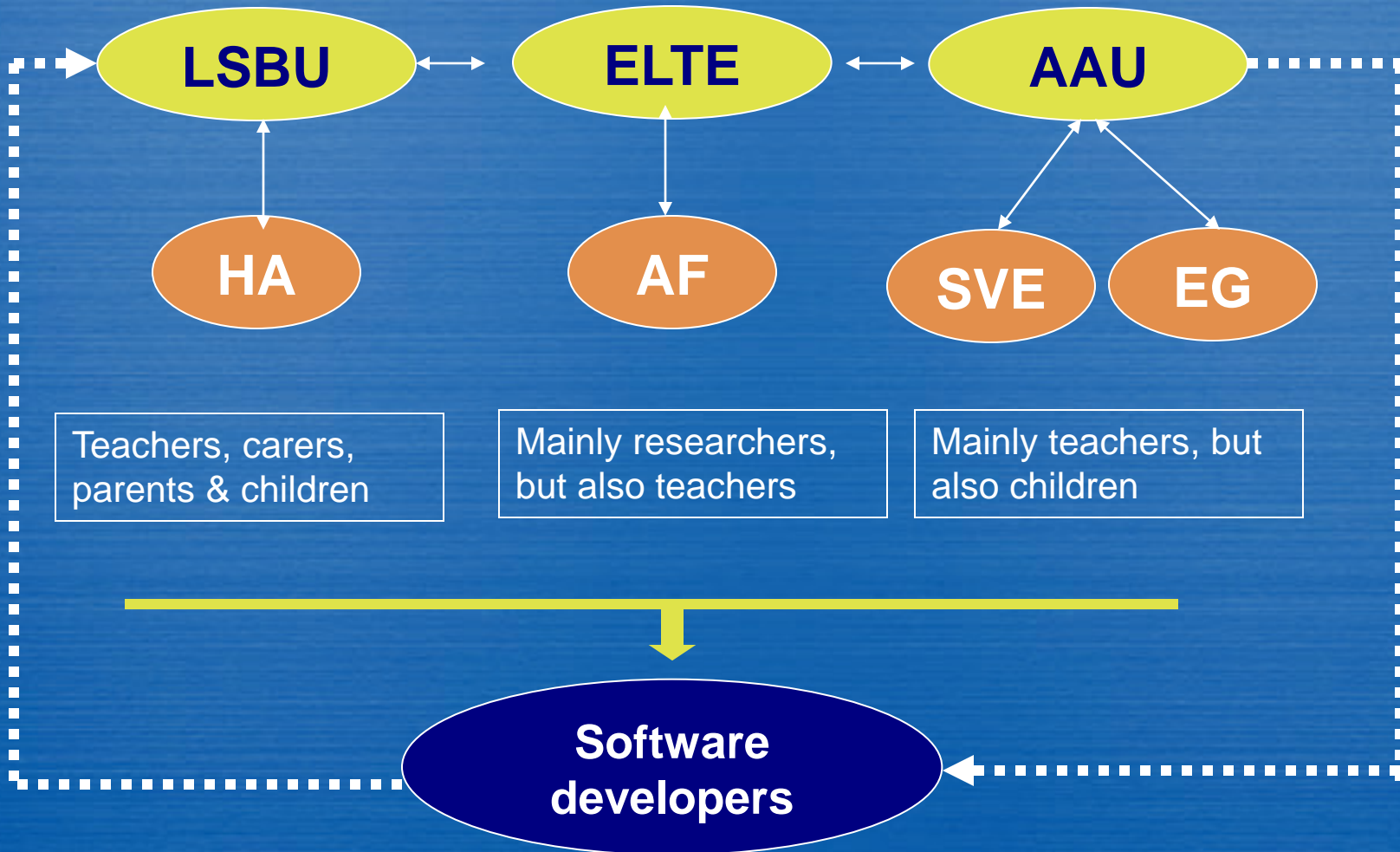
# Project timeline

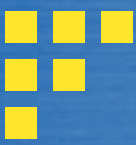
- **Phase 1 Initial Specification and Prototyping**  
**(Sept 2008 to January 2009)**
- Phase 2 Software development (January 2009 – July 2009)
- Phase 3 Implementation of Prototype 1  
(Sept 2009 to July 2010)
- Phase 4 Data analysis and development of Prototype 2  
(July 2010 to October 2010)
- Phase 5 Implementation and evaluation of Prototype 2  
(October 2010 to January 2011)



# **DEVELOPING THE SOFTWARE: A COLLABORATIVE APPROACH**

# User engagement network





# What should the software do?

## Engaging all users in the specification stage

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- Building a relationship with teachers, carers and students;
- Classroom and school observations;
- Frequent visits to the school and residential unit;
- Semi-structured interviews with teachers, carers, parents and children;
- Feedback to all users involved



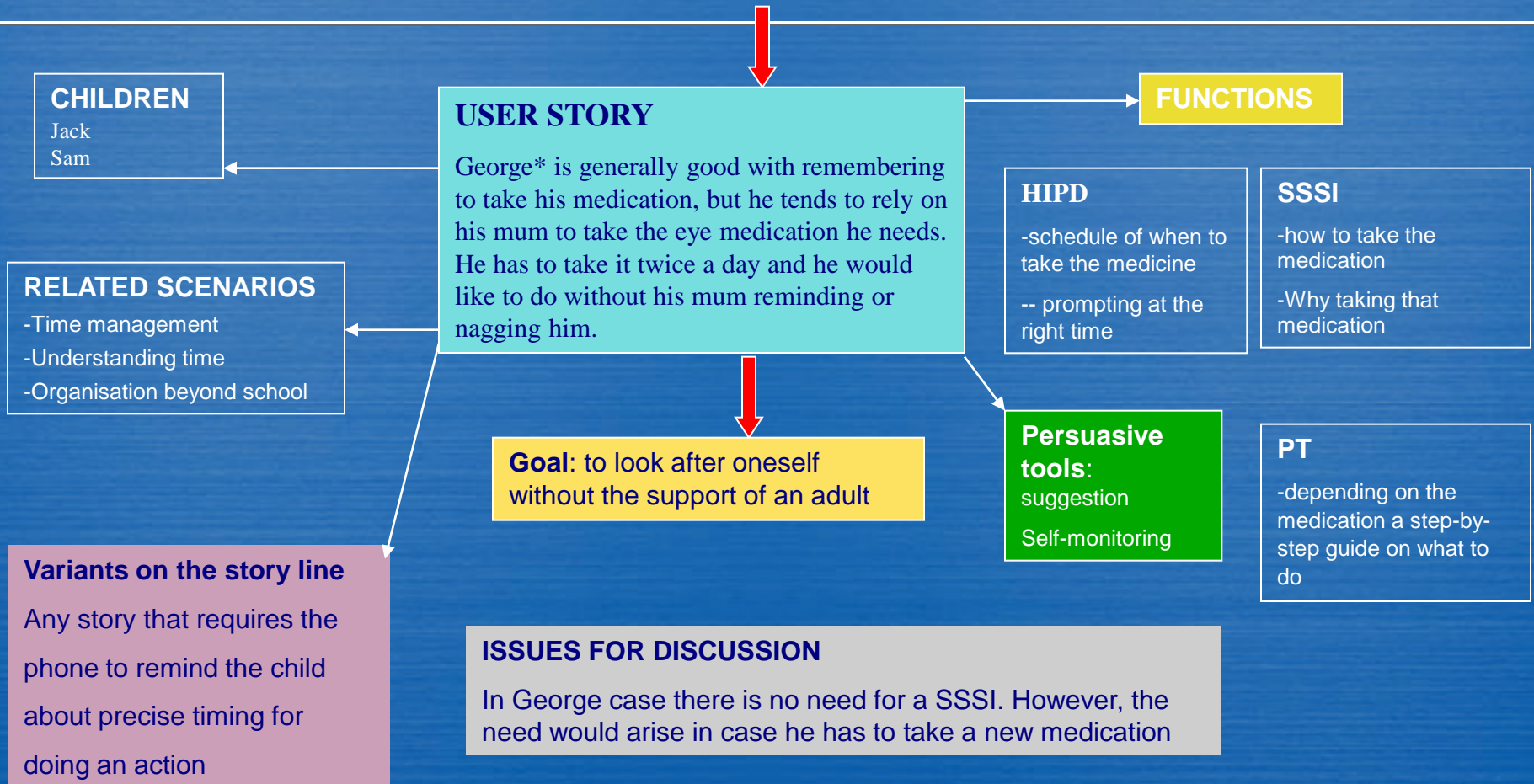
# What can the phone do for you?

## Results from the consultation

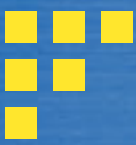
- Time management
- Emotions management
- Shopping
- Coping with worrying situations (going to the doctor)
- Traveling by public transport
- Cooking for oneself or for friends and family members
- Coping with school timetable
- Taking medication, etc

# A 'user story' example

## TAKING MEDICATION



\* Not the real children's names to protect their privacy



# Interviewing the children: lesson learned

- Phrase questions so that children can understand and feel they can contribute
- Give children time to think
- Allow them to reply as they see fit
- Accept all suggestions and ideas as important and valuable
- Suspend judgment on what children 'can' and 'cannot' do





# Benefits of consulting and involving the children

- adults feel responsible and accountable to the children
- adults feel more committed
- adults feel more empowered and willing to try new ideas
- software developers felt user stories were 'real'
- children are keen, curious and motivated to use the technology
- a general sense of 'doing something good for the children'
- community spirit, cohesion, and collaboration



*Thank you*