DfE Innovation Proposal

Exploring how technology can support traumatised young people in care to recognise, communicate and cope with strong emotions, and manage their behaviour more effectively

An Innovation Proposal from
The University of Kent
Centre for Child Protection,
University of Portsmouth,
Affective State
Snook

"Digital technology provides all of us the ability to define and communicate narratives in rich and textured ways. Video and audio tools and platforms supplement conventional text-based forms of communication, and put them in the hands of everyone."

Hagel 2011

The vision: why this project is important and why you should support it

for Adrian from Jane

Hi Adrian,

Do you remember when you were 12 years old and I was your (very young) social worker? You were one of the first young people I had to take into care. I was alerted by the fire brigade that you were going up and down in a lift in a block of flats with a half-empty bottle of whisky on the floor, a porno magazine and some roll-up cigarettes in your hand. I took all these away and you tried to rip the front seat of my car out.

Years later I found out that you have been sexually abused by your two older brothers since you were five. You couldn't tell me – you didn't have the words; and perhaps I didn't have the skills then. You then spend the next six years in the care system. The first 18 months were the worst: multiple foster placements, running away, lashing out, particularly at me and other children. I wanted to understand and help you but all I felt was you pushing me away. Your 'voice' got lost and you became labelled as a problem.

Then I gave you LIA (a Linked Interactive Advocate) - like an iPhone but better – a new digital service to help you when you needed it and to communicate your needs in a way that was meaningful for you. Your life changed. LIA helped you to start to learn about yourself and your behaviour, and it helped you to feel safe and start to trust adults. LIA had the panic button to press when you started inhaling petrol and when you were attacked by the lorry driver; LIA was with you when you ran away as you screamed at me for taking you to some 'awful therapeutic place for crazy people'. LIA calmed you down when you were hiding from me and linked you to your care mentor. LIA helped you prepare what you wanted to say at the child protection meeting, having chosen for LIA 'a cool voice like Stephen Hawking'. LIA stored all your favourite photographs and scanned in the drawings from when you got your GCSE in Art because they found you were 'talented and not crazy'. I particularly like the selfie when you graduated and became a teacher. I am so proud of you Adrian.

Jane

The proposal and the expected impact

Proposal

This proposal takes research with young people in care into unchartered waters and focuses on exploring how **digital and technological** tools might support traumatised young people and their carers in the future to:

- provide (1) ***companionship*** for traumatised young people
- aid (2) ***communication*** between young people and their carers and the local authority
- potentially (3) ***advocate*** for them & in local authority meetings
- provide (4) ***coaching*** for young people to help them cope with their strong feelings
- provide a mechanism for (5)***supervision*** to help them be safe when they are out and about
- use technology to (6) ***capture*** *t*heir thoughts, and feelings as they happen

By talking, demonstrating and co-designing with young people in care and their carers, user perspectives will be explored about **how** young people currently use technology in their lives and how it could be used to **help them in the future**. From the evidence gathered on (1) – (6) above the team will scope out what a **new digital service** for these young people will look like in the future for them, their carers, Local Authorities and allied health and social care organisations who look after them, protect them and help them thrive.

Impact & future potential for the social care sector

Through this research and co-design phase the team will provide new insights into how the application of technology could find new ways to 'reach' traumatised young people in care. To our knowledge this would be the first such **technological service design** project in social care in the UK. The way this first phase of the project has been designed takes into account **existing research** on the problems and risks this group of vulnerable young people experience and are exposed to, **analyses with them** their current behaviour and interaction with technology and then co-designs with them **digital products** to help them and their carers in the **future.** This project is unique and far-reaching and has the potential for influencing government policy and service design in the future. The team will then share these insights with social care sector via existing UK networks including the DfE, the College of Social Work, BASW, university networks & press releases managed by the University, the extensive networks of the Centre for Child Protection, health and care networks through 'Snook' and Innovate UK. The proposed outputs include publications in journals such as the *British Journal of Social Work*, the project website and WikI and UK workshops which will disseminate the findings to Innovation participants and those in the social care sector. The team will also present at national and international conferences.

The team have experience of using networks to maximise impact from '**Project Rita'** (http://rita.me.uk/), a prototype of a responsive, emotionally intelligent avatar with the potential to change the future of care for older adults. This concept was launched through press releases and chosen 'launch pads' and went global in 2014 and the team are currently in discussion with the Scottish Government about progressing Rita. For this bid the insights gained from Rita & the co-designed prototypes will inform the vision, develop and design of a new **digital support service** for young people and their carers

The problem and the opportunity

Problem

Many children coming into care will have been severely abused and/or chronically neglected *(NICE 2010)*. One of the tragic consequences of such maltreatment is that they significantly misinterpret their own and others' feelings *(C4EO 2009)*. When maltreated children feel sad they often misread the emotion as anger, or even fear *(Fostering and Adoption Briefing (9) 2014)*. The same thing happens with other people's emotions: whereas a carer might be feeling concern about the young person, the child may see it as criticism. This makes communication frustrating and unproductive. Modern technology can help here. A friendly and fun avatar could use emotion recognition software to gently show and teach a child how accurately to recognise their feelings as well as learn new ways of responding to others' emotions. The avatar could also help the child predict their feelings and then act in advance of self-destructive behaviours. Moreover, unlike humans, it has the capability of being present all the time to influence, support, advise and possibly monitor behaviour. Maltreated children also tend to gravitate towards inappropriate people, as they can misread adults *(NICE 2010)*. No wonder CSE gangs are able to offer them some kind of 'security'. Additionally, there is a lack of understanding about **how** young people in care currently use technology. This project will give us the underpinning knowledge to move forward.

Opportunity

Changes in the ways that young people communicate and learn have evolved in recent years with mobile technology playing a significant role. Notable risks are documented (CEOP 2014) yet the use of and potential for technology to support young people in care is not well understood by social workers, their carers and social care agencies. Recent research suggests that individuals may confide in an avatar more readily than humans (Rizzo et al 2014) as they feel they won't be judged and platforms like '*SimSensei* ' already exist for health care support. We also know that traumatised and neglected young people often find it difficult to communicate with humans but live in a contemporary landscape where mobile technology, texting, Facebook, BBM and social media are ubiquitous and readily available.

In terms of teaching and learning, new research from the Centre for Child Protection (Reeves and Shemmings 2014) informs us that contemporary young people like using serious gaming and entertainment technology to talk and learn about complex issues ('Zak' on radicalisation; 'Looking out for Lottie' on CSE) so **right now** we have the potential and **new opportunities** to engage and communicate, influence and supervise difficult to reach young people that are appealing to them. Therefore the DfE have a pioneering opportunity **right now** with this project to access information from young people in care about how they currently use technology and how they would redesign supportive technologies to meet their often complex needs.

Target audience in the system

Target audience in the care system

Research tells us that young people in care are at increased risk of **copious and complex** risks within the care system - for example, child sexual exploitation (*CEOP*); drug and alcohol abuse (*Lee et al 2008*); suicide (*Tong & King 2004);* being bullied *(Finkelhor et al 2007;* mental health problems *(Van Vugt et al 2014);* going missing *(Visser et al 2005);* becoming homeless (*DfES, 2007*); committing criminal offences *(DfES 2007); s*erial placements *(SCIE 2014)* and frequent changes of social worker *(SCIE 2014).* The current landscape of the news and media is full of reports detailing how young people in care have been **groomed and abused**, seemingly without the knowledge of those who care for them, with gangs using mobile phones as both expensive presents and mechanisms of controlling some of the most vulnerable young people in society.

This project will work with local authorities and organisations who care for young people who have been traumatised - including those who have been abused (physically, emotionally and sexually or a combination) and neglected or who have suffered trauma, either within their family or life context in the UK or abroad and, through processes of consultation with the local authority, social workers, residential staff and foster carers, identify suitable young people for inclusion in the study.

Stakeholder partners

The team have developed a stakeholder base who are actively involved in providing support to young people in care. Two local authorities and one child care provider organisation have been approached to participate in this project and all have given their verbal agreement. They have now been written to formally and current progress is noted below:

1. Channels and Choices provides specialist therapeutic fostering services, therapeutic residential children's services and specialist education services. Professor Shemmings has previous involvement with the organisation. The Director has agreed their involvement and we are arranging to meet.

2. London Tri-Borough including Westminster (75*); Hammersmith and Fulham (85*); Kensington and Chelsea (55*). To date currently in contact with Glen Peche, Assistant Director for Looked After Children who has given his agreement. Currently discussing ethical processes and arranging to meet.

3. Essex County Council (560*). To date (3.12.2014) we are in contact with Jenny Boyd Director for Local Delivery, Children, Young People and Families who has given her agreement. We are currently discussing ethical approval and arranging a meeting

Ethics and Child Protection

The project team has robust Child Protection Guidelines and each member of the team will have enhanced disclosure to work with young people. Those working directly with young people will all have completed Mental Health First Aid Awareness training for Young People. We will obtain ethical approval from University of Kent ethics committees and from the relevant local authorities. We always work with back up from local support staff to allow ongoing support for young people involved in our work.

**Numbers in brackets indicates the number of young people in care over the age of 10 some of whom could provide service user involvement for this project*

THE ROYAL BOROUGH OF KENSINGTON AND CHELSEA

CHANNELS & CHOICES
Breaking cycles, improving outcomes

Essex County Council

Proposed questions to explore with young people

The team want to find out how traumatised young people in care link their **context and experiences** with their **emotional state and behaviour** and discover if we can co-design behavioural, physiological & psychological monitoring technology & support technologies ultimately to integrate this into a service to help them thrive.

Example: Nicola is nearly 14, having been in care since she was 12. Profoundly neglected and sexually abused in her birth family she has had three foster placements which have all broken down due to her violent and aggressive behaviour and her substance abuse. She is now living in a small residential unit, where the staff struggle to cope with her. She is sexually active and frequently goes missing. She makes superficial relationships which frequently break down.

The team want to explore how:

- a digital service could help provide on-going (1) ***companionship*** for traumatised young people like Nicola. Natural language interfaces have developed significantly since 'Eliza' the psychotherapist in the 1960s, and 'chatbots' which only responded to pre-programmed questions. 'Siri' has demonstrated the potential for personalising information and IBMs Watson is designed to engage users in a trusted dialogue. In a low fidelity example Paro (the seal) has been used to provide companionship in older age groups.

- technology can aid (2) ***communication*** with young people like Nicola and her carers and the local authority. Young people drive the uptake of innovative communication methods, such as texting, 'Snapchat' and 'Instagram', as well as 'Skype'. Other technologies to communicate emergency situations such as personal alarms may also the indicate location of the user.

- technology could potentially (3) ***advocate*** for them & in certain situations. The storage of information can provide a powerful source of evidence to support advocacy. In addition apps such as MOMO, simplify the communication of evidence and feelings. Further potential exists to use natural language interfaces to convey this information.

- technology could provide (4) ***coaching*** for Nicola to help her cope with her strong feelings. Many examples of personal coaching apps exist, from those targeting exercise, to 'mindfulness' apps. Personalised coaching based on achieving certain positive behaviours may find utility.

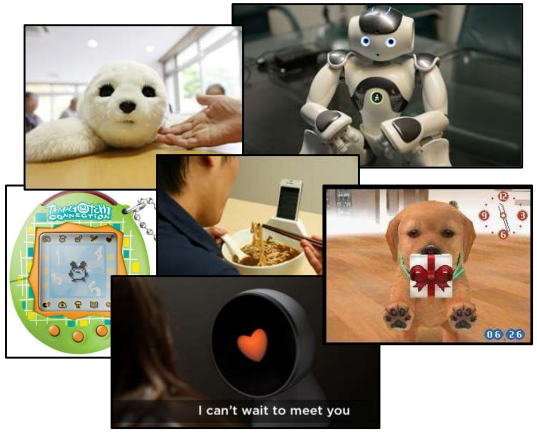
- technology might also be used to provide a mechanism for (5) ***supervision*** to help them be safe when they are out and about. GPS and video-based tracking systems provide examples of mobile and static technologies that are in frequent use. Negotiated use of these systems may be augmented by additional information such as 'no go' areas, or 'dangerous after dark' knowledge.

- young people like Nicola would want to use technology to (6) ***capture t***heir thoughts, and feelings as they happen. Capturing information using voice to text translation, syntatic analysis of language used, and emotional state recognition provide the means of associating emotional well-being with context.

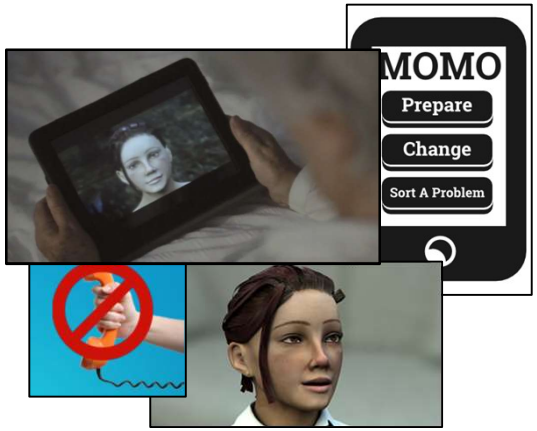
From the evidence gathered on (1) – (6) above the team will scope out what a digital service for these young people might look like

1. Communication

2. Companionship



3. Advocacy



4. Coaching

5. Supervising

6. Storage

How will this be achieved (methodology)

The project will use Snook's citizen engagement and co-design methodology, which is drawn from the Design Council Double Diamond. This approach has been developed and refined through projects such as Project99 (www.wegot99.com) to work specifically with vulnerable young people.

By engaging one to one and in group sessions with the young people and their carers the team will:

- Use a *Design Ethnography* approach (observation; cultural probes; day in the life studies; interviews) to gain insight into experiences, everyday challenges and opportunities of young people and their carers. Through this we will help them consider how they currently use technology and digital services, and also provide examples of how emerging technologies might work to better support them

- Use *Service and User Experience Design* methods and tools (customer journey mapping; personae; idea-generation activities and templates) to engage the young people and carers in idea generation and co-design sessions

- Employ an *Innovation Labs methodology* (creative structured workshops) to conduct a series of prototyping sessions where their ideas for new technical support systems are tested and refined

What will change for young people - and how - with a new digital service

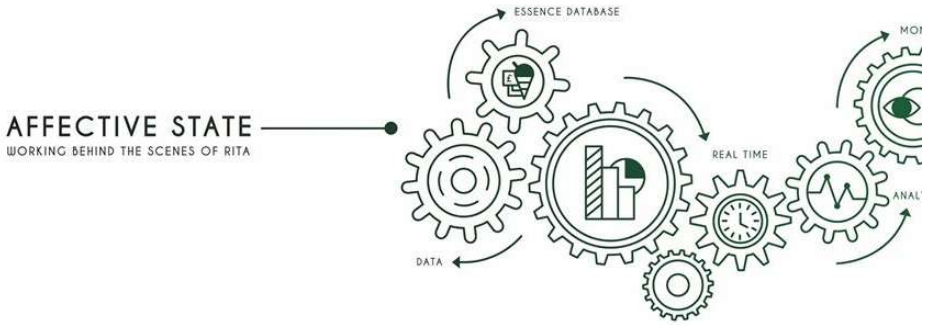
The vision

The vision is for the ***new*** knowledge created from this study on (1) companionship; (2) communication; (3) advocacy; 4) coaching; (5) supervision; & the (6) storage of information offers the potential to change the way young people in care who have experienced trauma are looked after and cared for. This links to our **underpinning theory of change diagram that:**

1. Young people (YP) can be kept as safe as possible with alert systems for them and the technology '*does no harm'*
2. YP are cared for, have increasingly strong and positive attachments and relationships and feel they belong
3. YP express themselves, feel listened to and understood in ways that are meaningful to them
4. YP have digital 'tools' and a service designed to help them cope at times and places they need it most and it is immediate responsive
5. Foster carers and residential staff will have access to more effective tools to help them understand, communicate and help young people

Messages from designing a digital service (Doblin) suggest that the team have to turn the user ideas into **practical solutions** that provide **value** to the young people so that each **service interaction** makes a **service moment** which add up to positive experiences for the user so they will keep coming back to **use it.**

Select image below to view:

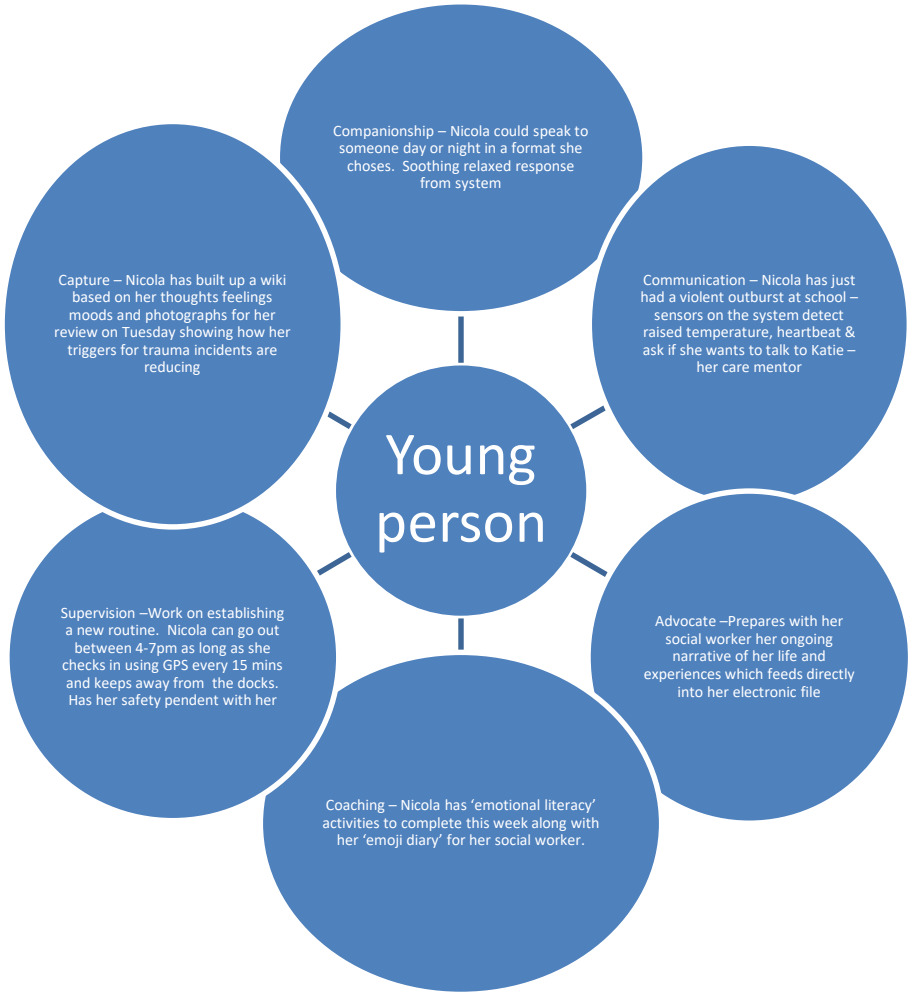


How the vision might benefit young people and their carers

***Example**: Nicola is nearly 14 having been in care since she was 12. Profoundly neglected and sexually abused in her birth family she has had 3 foster placements which have all broken down due to her violent and aggressive behaviour and her substance abuse. She is now living in a small residential unit, where the staff struggle to cope with her. She is sexually active and frequently goes missing. She makes superficial relationships which frequently break down.*

~~£££££££££~~

The system is able to monitor where Nicola is keeping away from her vulnerable demographic 'hotspots' and she has a mechanism to press if she is in danger (£) – individualised coaching and direct work is on the system in a format appealing to young people – feeds directly into case notes for social work session on Wednesday (£) - ongoing emoj diary in conjunction with sensors can calculate possible emotional distress and link contact with care worker (£)



The team

We are an alliance of technologists, designers and academics, brought together to leverage the latest advances in technology for the benefit of some of the most vulnerable young people in society.

We have a unique combination of skills and expertise—in social care, game development, human-computer interaction, cognitive performance and service co-creation—and an unparalleled track record (e.g. successfully creating a proof of concept phase for Rita – a Responsive InTeractive Advocate for older adults).

We want to get started on this project for vulnerable young people and need an investment from DfE to develop the right proposition to act as a springboard to move forward for s new digital service design for young people.

The team's expertise

University of Kent Centre for Child Protection are experts in inter-professional child protection knowledge, research and innovation in simulations for teaching and learning with young people and professionals & have access to health and social care networks in the UK. Prior to moving to Kent in 2007, **Professor David Shemmings** was Professor of Social Work Research at Middlesex University. He qualified in 1974 and worked with traumatised children for a number of years. He then became a policy adviser for services to children and families to the Director of Social Services in Essex and was then Deputy Director of Social Services in Southend, before joining the University of East Anglia, Norwich in 1988. David spent 17 years at UEA, where he completed his PhD under the supervision of Professor David Howe. David was awarded an OBE for Services to Child Protection in the June 2014 Queen's Birthday Honours List.

Dr Jane Reeves is Co- Director for the Centre for Child Protection and has steered and developed the Centre in innovations in teaching and Learning, including new approaches to teaching and learning in child protection and the development of serious game simulations as learning tools to tackle complex topics and problems for example sexual abuse, neglect, radicalisation, sexual offenders and child sexual exploitation. The Centre was shortlisted for the Times Higher Education Award (2014) and has won the University Innovation Award (2014) and University Teaching and Learning Award (2014)

University of Portsmouth School of Creative Technologies are experts in the design and application of interactive applications and new technologies, with a particular specialism in technology for health and well-being. Recent projects include evidence-based design of a trustworthy avatar to support older adults, and working with the NHS urgent care team to improve communication to young people.

Dr Wendy Powell is an expert in the design of advanced interactive applications for health, wellbeing and education. She has a first class honours degree in Computing and a PhD in Creative Technologies, and has worked on a number of innovative projects in healthcare technology, including new approaches to pain management in amputees, rehabilitation games, and the RITA avatar to support older adults. She also works extensively with young people in schools as a STEM ambassador.

Wendy is a member of the Centre for Cultural and Industrial Technologies Research (CiTech) at the University of Portsmouth, and is also the founder of the iMoVE (Interactive Motion in Virtual Environments) research group, drawing on expertise both nationally and internationally to push the boundaries of knowledge and understanding in interactive VR. Wendy is also an active member of the University of Portsmouth Healthy Computing Group which works to bring together a broad scope of knowledge and expertise to develop technology to improve well-being.

The team's expertise

Affective State are experts in system and interface design. From a background in the defence human sciences, expertise enables individuals to interact effectively and efficiently with next generation technologies. Recent relevant experience has involved assessing the emotional state of individuals, and tailoring interfaces accordingly to achieve benefits in the quality of life of older adults.

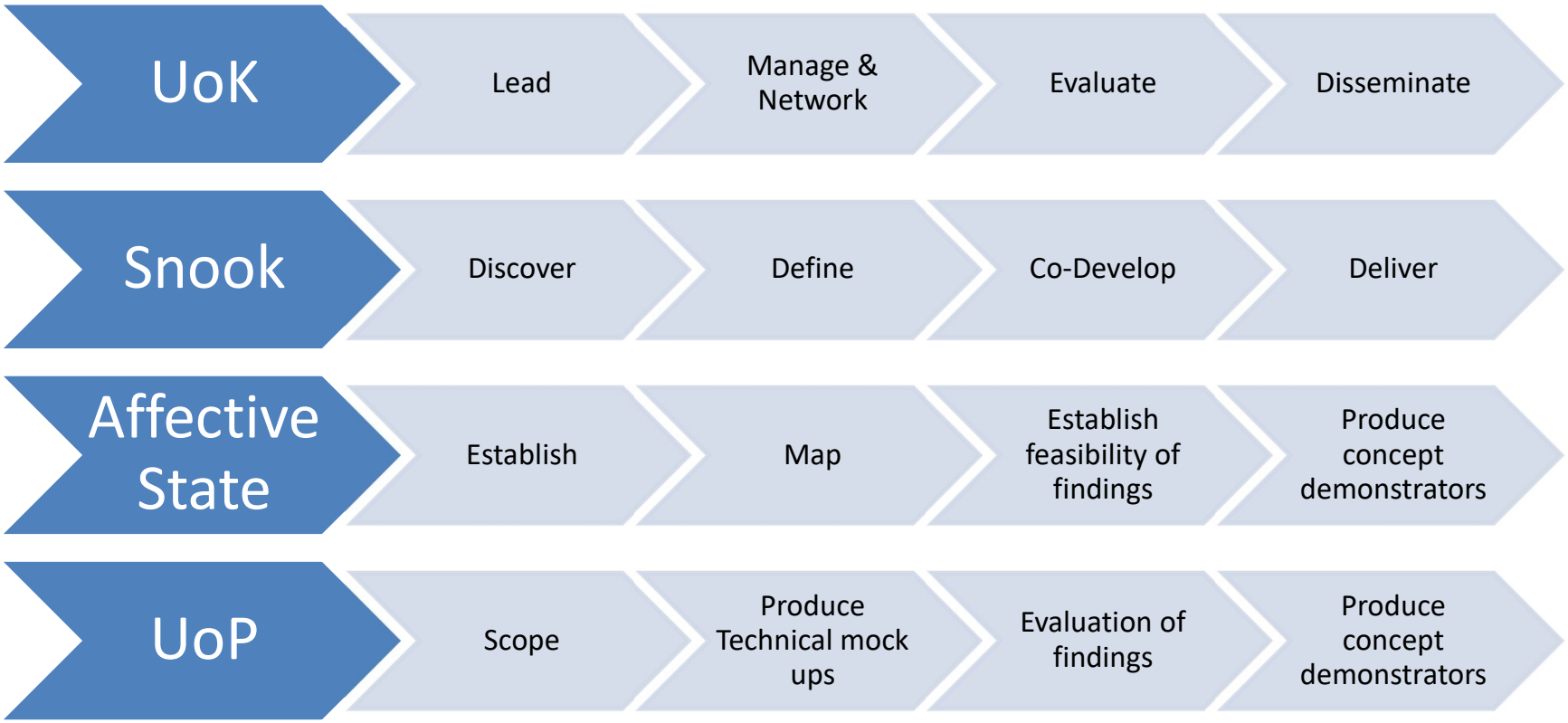
Dr Blair Dickson: Blair holds a doctorate in cognitive electrophysiology from the University of Bristol. With over 20 years of experience he has provided innovative Applied Neuroscience research to both UK and US government agencies. As founding director of Affective State Ltd, his primary expertise lies in innovative research designed to influence and interpret human behaviour by understanding the interactions between the local sensory environment and the cognitive and affective (emotional) state of individuals. Recent research programmes have focussed on affective state recognition, examining the time course of changes in electrical brain activity and behavioural markers in response to emotionally valent stimuli, and on the identification of different emotional states from facial expressions and vocal features. He also specialises in developing concept demonstrations of novel human-centric applications

We are Snook have extensive experience in engaging young people in idea generation, co-design and prototyping of new digital services.

Dr Valerie Carr: Valerie Carr is a Service Designer with extensive experience of engaging citizens and patients in the redesign of public services. She has worked for the past 5 years on a range of projects for ImaginationLancaster and Snook, including:

- Working Together Better initiative across Lancashire, working closely with vulnerable families and front-line workers.
- Project99, exploring internet based approaches to youth mental health and involving young people in co-design of new service propositions (www.wegot99.com)
- Supervising our embedded designer in Includem, supporting young people in transition from Includem's support services (http://www.nowincluding.tumblr.com/)
- Full profile and details of projects at uk.linkedin.com/in/carrvalerie/

Linking project to work packages



An example of how the team think differently about social problems....