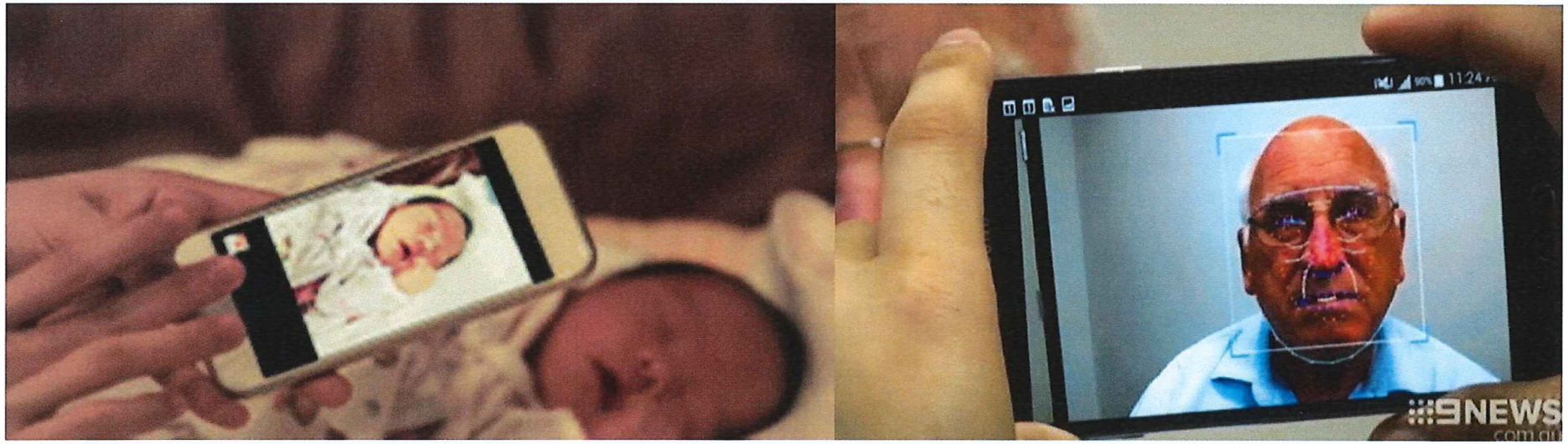
ePAT

Improving the quality of life for people in pain through novel, cost effective pain assessment tools

AUGUST 2016

Our Vision

First to market with novel pain assessment products and services that improve patient quality of life and are accessible for carers everywhere.



Setting the Scene

- ePAT Apps are designed to assist in the quantification and management of pain.
- ePAT has recently obtained international patent clearance.
- Based upon scientific research developed by Curtin University over the last 3 years and led by Professor Jeff Hughes.
- Incoming experienced commercialization management team and Board.
- Industry healthcare provider leaders are involved in validation and implementation studies.
- First commercial sales are anticipated in Q3 2017.
- Clear achievable milestones in place.

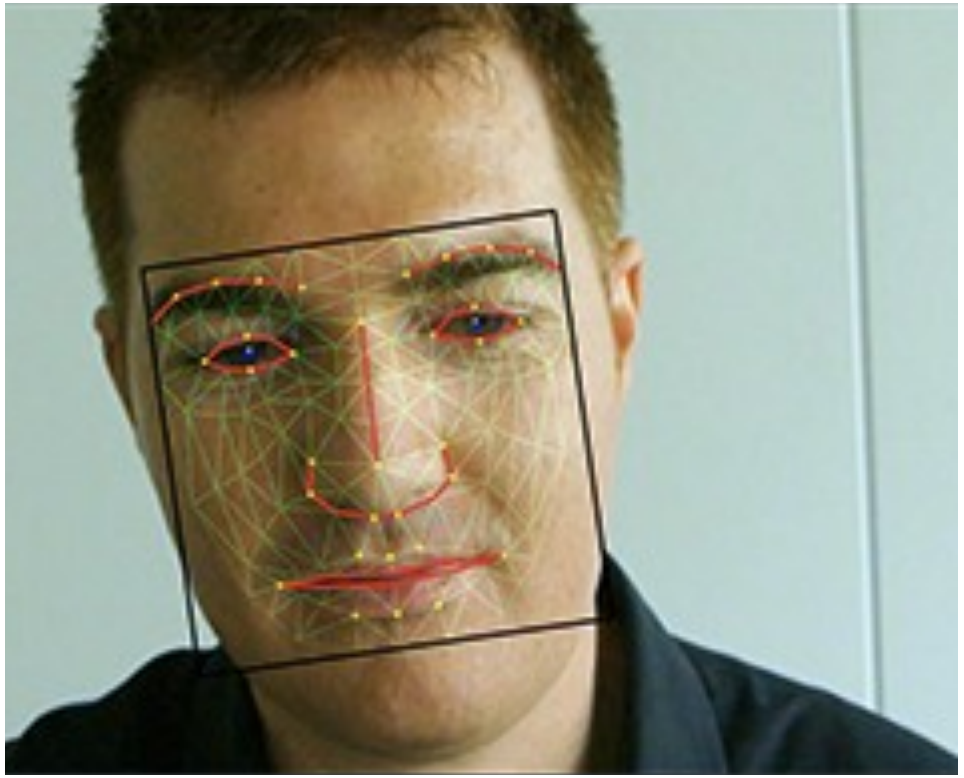
The Problem

- Pain is often poorly managed particularly in those who are unable to communicate
- Tools used to assess pain are highly subjective and often not used
- As a result, pain often goes undetected and untreated
- Pain is the most common reason that people seek medical assistance

Our Proposed Solution

ePAT

- A point of care App which utilises facial recognition technology to detect micro- expressions which are indicative of presence of pain
- These data are combined with non-facial pain cues (vocalisations, movements and behaviours) captured through the App to automatically calculate a pain severity score
- ePAT App is designed to allow pain assessments to be:
  - Simple
  - Accurate
  - Objective
  - Reproducible



Technology evolution has driven the rise of consumer led healthcare management

Temperature taking

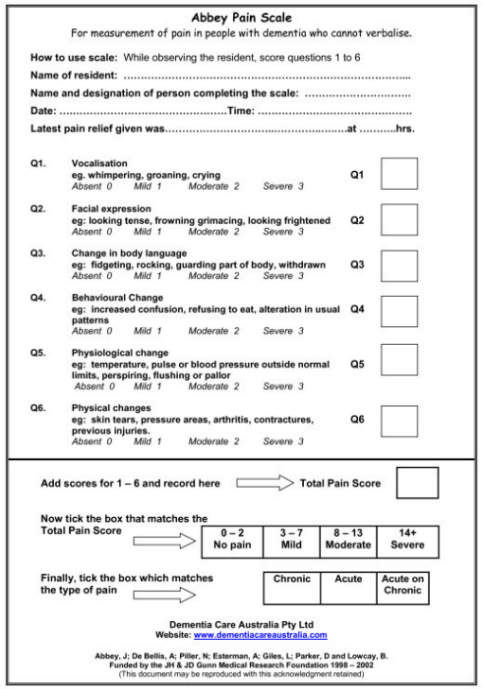
Blood Pressure monitoring

Blood glucose monitoring

Benefits:

- Accuracy (equivalent)
- Objective measure
- Ease of use for consumer and carer
- Improve quality of life for consumer
- Accessible to all
- Overall cost benefit to healthcare system

ePat can provide the same benefits in the pain assessment sector



Abbey Pain Scale

For measurement of pain in people with dementia who cannot verbalise.

How to use scale: While observing the resident, score questions 1 to 6

Name of resident: .....

Name and designation of person completing the scale: .....

Date: .....**Time:** .....

Latest pain relief given was.....**at** .....**hrs.**

Q1.	**Vocalisation** **eg. whimpering, groaning, crying** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q1	
Q2.	**Facial expression** **eg: looking tense, frowning grimacing, looking frightened** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q2	
Q3.	**Change in body language** **eg: fidgeting, rocking, guarding part of body, withdrawn** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q3	
Q4.	**Behavioural Change** **eg: increased confusion, refusing to eat, alteration in usual patterns** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q4	
Q5.	**Physiological change** **eg: temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q5	
Q6.	**Physical changes** **eg: skin tears, pressure areas, arthritis, contractures, previous injuries.** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q6	

Add scores for 1 – 6 and record here ⇨ **Total Pain Score** ☐

Now tick the box that matches the Total Pain Score ⇨

0 – 2	3 – 7	8 – 13	14+
No pain	Mild	Moderate	Severe

Finally, tick the box which matches the type of pain ⇨

Chronic	Acute	Acute on Chronic

Dementia Care Australia Pty Ltd
Website: www.dementiacareaustralia.com

Abbey, J; De Bellis, A; Piller, N; Esterman, A; Giles, L; Parker, D and Lowcay, B.
Funded by the JH & JD Gunn Medical Research Foundation 1998 – 2002
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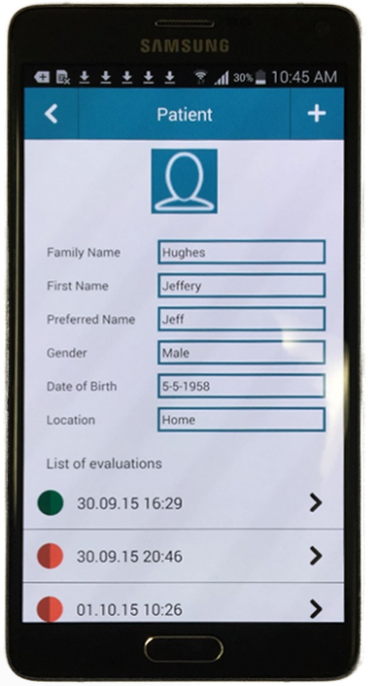

Benefits:

- Accuracy (equivalent)
- Objective measure
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- Improve quality of life for consumer
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Our Target Markets

On the way to achieving our vision of being the global standard tool for pain assessment,

our initial focus will be to commercialise ePat Apps for:

1. those caring for people with dementia
2. carers of preverbal children

Timeline to Commercialisation and Revenue

Dementia App

- Q4 2016 – Validation studies completed
- Q3 2017 –Implementation studies completed
- Q2 2017 – TGA and CE mark application submitted
- Q3 2017 – Target for TGA approval in Australia and approval in the EU
- Q3 2017 – Target for commercialisation in Australia and initial European markets
- Q1 2018 – Target for FDA approval in the USA
- Q2 2018 – Target for commercialisation in the USA

Pre-Verbal Children Apps

- Q4 2016 – Next phase of development expected to commence
- Q2 2017 – Prototypes for initial validation testing
- Q3 2018 – Target for Regulatory approval in Australia and Europe and commercialisation ready

Target Market
Dementia

EVERYONE who cares for ANYONE who cannot self-report their pain

Carers
of people with dementia

150 million
Globally

1.2 million
Australia

Target Market
Pre-Verbal Children

EVERYONE who cares for ANYONE who cannot self-report their pain

Mums & Dads
Grandparents
Health care professionals
Nannies
Babysitters
Day care workers

4 Babies Born
Every second

130 million
Births per year

260 million
New parents

Other Target Markets

Carers of others who cannot communicate

Other patient groups in which the ability to communicate verbally may be impaired, examples include:

- ***Delirium (acute change in mental status)***
- ***People who have had a stroke***
- ***People with intellectual development delay***
- ***People with acquired brain injury***

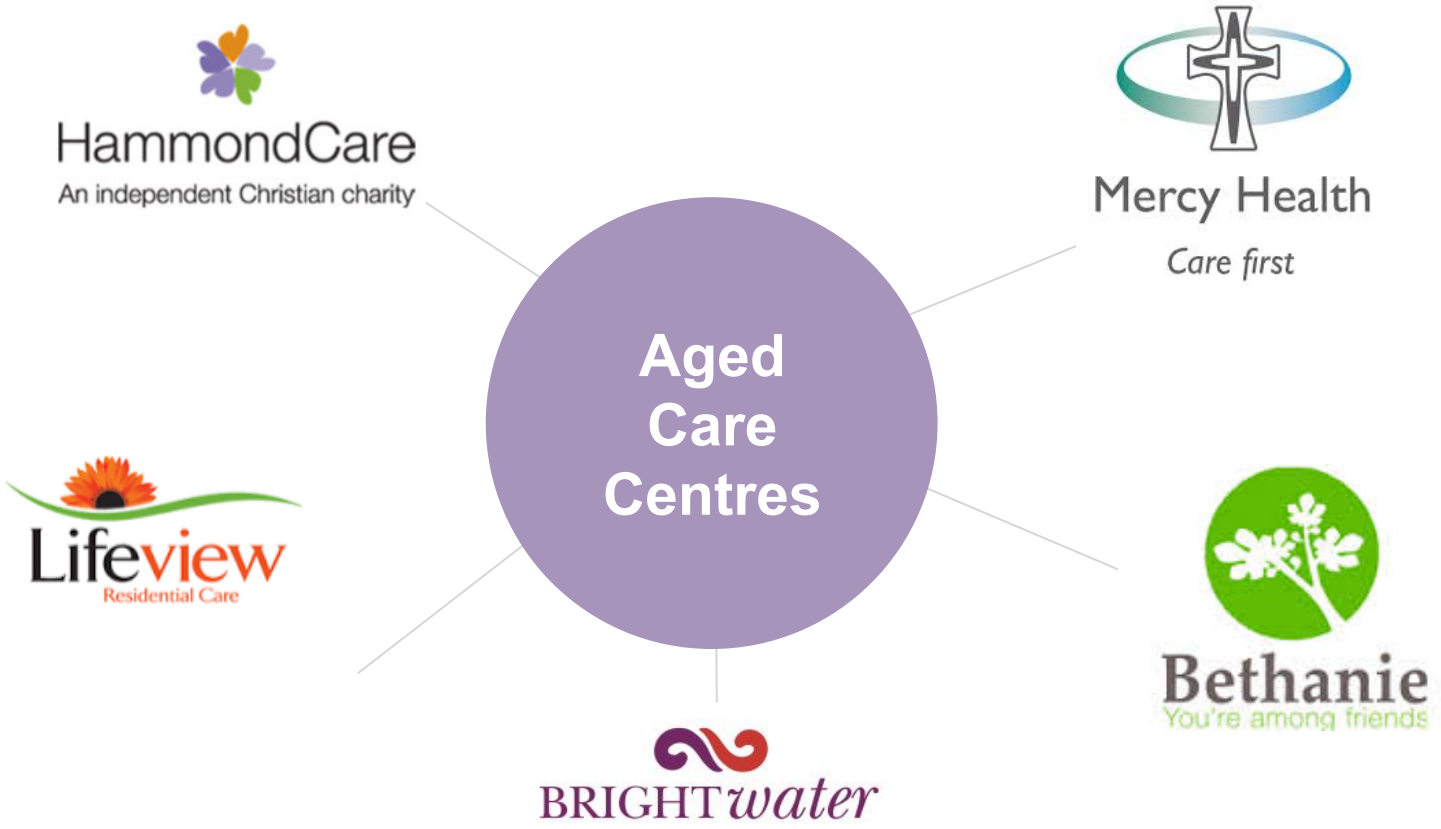
Other Target Markets

Industry related opportunities

Opportunistic markets where there is a current need for ePAT technology, examples include:

- ***Tele-Health***
  - Support clinician remote patient assessments
- ***Insurance Claims***
  - Assisting in assessment of personal injury claims
- ***Pharmaceutical Companies***
  - Monitoring tool for clinical trials of pain relief drugs

Collaborative Partners include:



Supported by

ePAT

ALZHEIMER'S AUSTRALIA DEMENTIA RESEARCH FOUNDATION

Provided:
$50K research grant towards App development
$90K PhD Stipend

Dementia Society of America®

Letter of endorsement from Hon. President Kevin Anderson

THE AUSTRALIAN PAIN SOCIETY

www.apsoc.org.au

Offered 3 year PhD Stipend

CSIRO

ePAT selected as one of 11 finalists in ON Accelerator 2 Program

Increased Industry/Market Awareness

ePAT

- **Lay Press** and **Social Media**

Facial features may diagnose pain in dementia sufferers

Undiagnosed pain of dementia sufferers could soon be measured by facial recognition technology, as part of an Electronic Pain Assessment Tool (ePAT) being developed at Curtin University.

- **Publication/Presentation**

Facial recognition ePAT app for pain a winner in CSIRO innovation program

By Georgia Hitch

Posted 23 Apr 2016, 6:25am

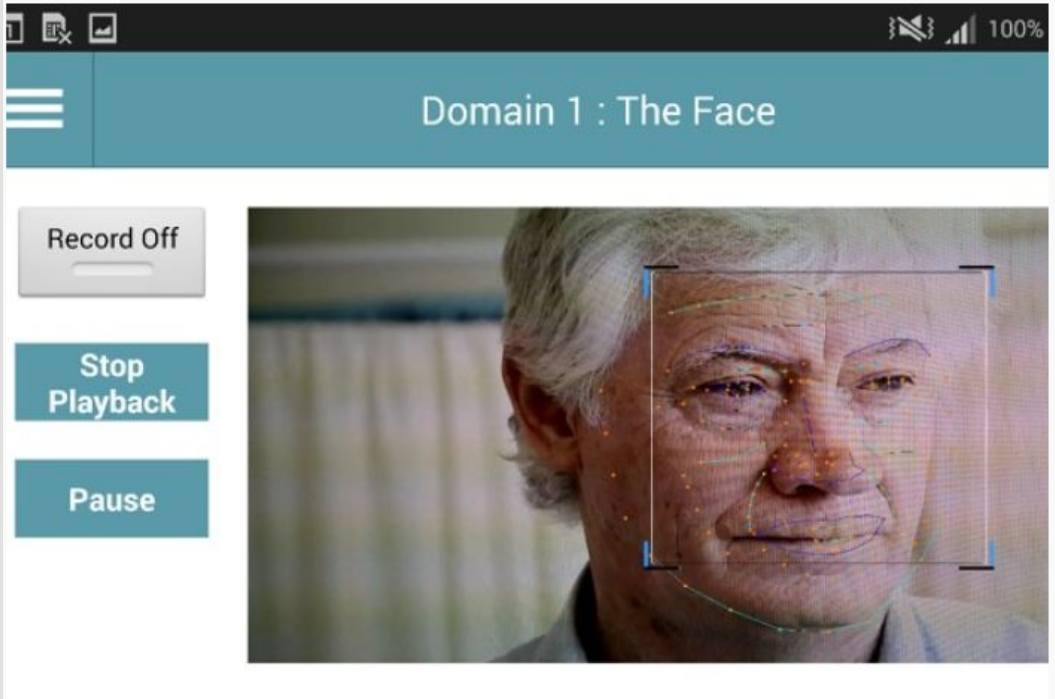


PHOTO: The ePAT app is one of eleven projects that will be developed through the CSIRO innovation program. (ABC News: Supplied)

ePAT Product Portfolio & Business Model

	Product	Price	Promotion	Distribution
ePAT Direct to Consumer App	▪ Basic model with download option **Positioning:** ▪ Convenience ▪ Low cost ▪ Consumer empowerment	▪ FOC download and initial FOC trail use ▪ Purchase monthly subscriptions	▪ HCP recommendation ▪ Digital Marketing and Google search word priority ▪ Ambassadors / reference users	▪ Apple Store ▪ Google Play Store ▪ Direct from ePAT
ePAT Health Care Professional App	▪ Basic model + integration with health records platform **Positioning:** ▪ Personalised medication ▪ Reduction of pharmacotherapy and hospitalisation costs	▪ Price based on software supplier business model ▪ Number of beds or patient numbers ▪ Volume based price breaks	▪ Key Account Management with HCP ▪ Push-Pull model leveraging the demand from the consumer sales	▪ Software suppliers to hospitals & nursing homes ▪ Aged care providers

Key Milestones Already Achieved

- 3 year Curtin University based project led by Prof Jeff Hughes
- Supported by Alzheimer's Australia, Australian Pain Society and Dementia Society of America
- Developed working Android prototype of the App for Dementia (November 2013)
- Established Electronic Pain Assessment Technologies Pty Ltd ('ePAT Pty Ltd') in October 2014
- Protected our IP through lodgment of international patent application
- Completion of validation studies (Prototype ePAT App for Dementia) - May 2016
- 3 aged care facilities (Juniper, Bethanie and Brightwater)

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Dr Andreas Hartmann
GRIFFITH HACK
Level 19, 109 St Georges Terrace
Perth, Western Australia 6000
Australia

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year) *08 August 2016*

Applicant's or agent's file r
P96779.PCT

International application N
PCT/AU2015/000501

Applicant
ELECTRONIC PAIN ASSESSMENT TECHNOLOGIES (EPAT) PTY LTD

International Patent Clearance August 2016

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.

Validation Study Results

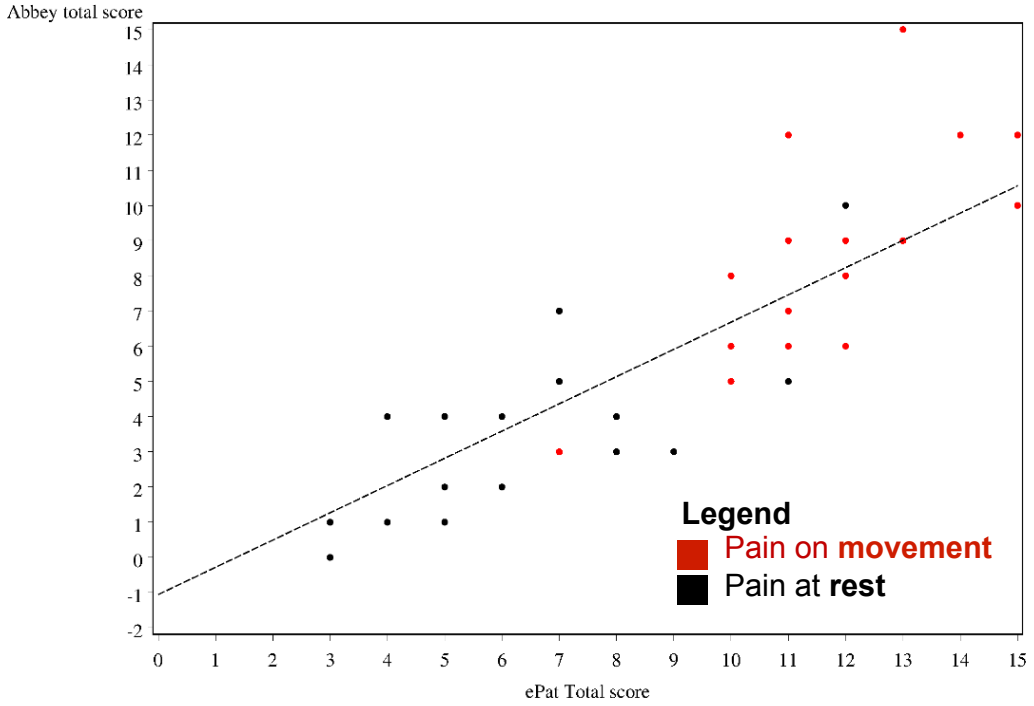
Pilot validation studies involving three residential aged care homes (Juniper, Brightwater and Bethanie) involving 40 residents with moderate to severe dementia completed May 2016

ePAT vs Abbey Pain Scale

Patients n = 40

Assessments = 354

Correlation coefficient = 0.90



Capital Structure - $4.5M Capital Raise

	Shares
Shares on Issue Post Consolidation	219,603,169
Shares issued to acquire ePAT	213,219,616
Shares issued for $4.5M capital raising	225,000,000
Total Shares on issue Post ePAT transaction and Fund Raising	657,822,785

Shareholder Group	Percentage ownership post transaction
Original MinQuest Shareholders	33%
ePAT Shareholders	32%
New Investors	34%

Post transaction up to 213,219,616 or 34% may be escrowed for up to 2 years.

Use of Funds – 2 year budget

	$4,000,000 Capital Raising	%
Capital Raising Fees	$340,000	9%
Research & Development	$973,000	24%
Sales & Marketing	$511,000	13%
Intellectual Property & Regulatory	$225,000	6%
Corporate & Administration	$1,671,000	42%
Working Capital	$280,000	7%
	$4,000,000	100%

Summary

- Our vision is to be first to market with novel pain assessment products and services that improve patient quality of life and are accessible for carers everywhere.
- ePAT Apps are revolutionary
- Use of ePAT Apps has international patent clearance.
- Smart phone enabled medical Apps are rapidly growing within the Healthcare market.

- Short time frame to commercialization
- Plans for multiple revenue channels
- Plans for direct sales to end users
- Software licensing arrangements

Our Team

Strong track record in clinical practice, R&D, innovation and commercialisation

Incoming Managing Director EPAT Technologies Ltd

Philip Daffas

Mr Philip Daffas is a highly accomplished global business leader and people manager with an international career spanning more than 25 years with leading blue-chip healthcare corporates and novel technology start-up companies. Mr Daffas has held senior global business leadership positions in Europe, US and Australia. He has been instrumental in building businesses, growing market share and developing extensive high-level customer relationships in each sector.

Inventors and Founders from School of Pharmacy, Curtin University

Prof. Jeff Hughes

Dr Kreshnik Hoti

Mustafa Atee

All three inventors are pharmacists with a strong track record in clinical practice.

Professor Jeff Hughes is the former Head, School of Pharmacy, Curtin University and CEO “EPAT” Pty Ltd. He is a Director of Pharmaceutical Society of Australia and the Pharmaceutical Society Western Australia. Prof Hughes is a recognised leader in pharmacy research, education and practice, and the recipient of multiple professional awards including the 2004 PSA Pharmacist of the Year. As a clinical and accredited pharmacists he has worked extensively with elderly patients in aged care and hospitals.

Dr Kreshnik Hoti was a lecturer in the School of Pharmacy at Curtin University and is now Vice-Dean for Academic Affairs at the Faculty of Medicine, University of Prishtina, Kosovo. He is has extensive experience in clinical practice in community pharmacy and medication review services, research and education.

Mr Mustafa Atee, is a registered pharmacist with 11 years’ experience. Currently, he is undertaking his PhD under the supervision of Prof Hughes and Dr Hoti. This research is funded by a grant and PhD stipend from Alzheimer’s Australia.

Our Board

Strong track record in building global businesses, corporate governance and successful commercialisation of novel healthcare technologies

Incoming Non-Executive Chairman EPAT Technologies Ltd

Mr John Murray has over 20 years' experience in private equity and venture capital, and is a past chairman of the Australian Venture Capital Association. He has considerable experience as a director of high growth, technology-based companies and is Chairman of a private aged care business.

Mr Murray also brings 12 years' experience in executive roles in corporate banking, accounting and IT services industries. He is a qualified chartered accountant with an Honour's degree in Law, and is a member of the Australian Institute of Company Directors.

Incoming Managing Director EPAT Technologies Ltd

Mr Philip Daffas is a highly accomplished global business leader and people manager with an international career spanning more than 25 years with leading blue-chip healthcare corporates and novel technology start-up companies including Cochlear and Roche Diagnostics.

Mr Daffas has held senior global business leadership positions in Europe, US and Australia. He has been instrumental in building businesses, growing market share and developing extensive high-level customer relationships in each sector.

Incoming Non-Executive Director EPAT Technologies Ltd

Mr Ross Harricks has worked in Europe, USA and Australia in many sectors of the medical device industry.

In the USA, Mr Harricks has had senior marketing roles with global medical device marketing companies, and in Australia has worked with a number of medical devices companies in their early international expansion stages, including listed companies ResMed, AtCor, Ventracor, and Memphasys.

Incoming Non-Executive Director EPAT Technologies Ltd

Mr Adam Davey is the Director, Private Clients and Institutional at Patersons Securities. His expertise spans over 25 years and includes ASX Listings, Capital Raising (both private and public), Mergers and Acquisitions as well as Transaction Due Diligence.

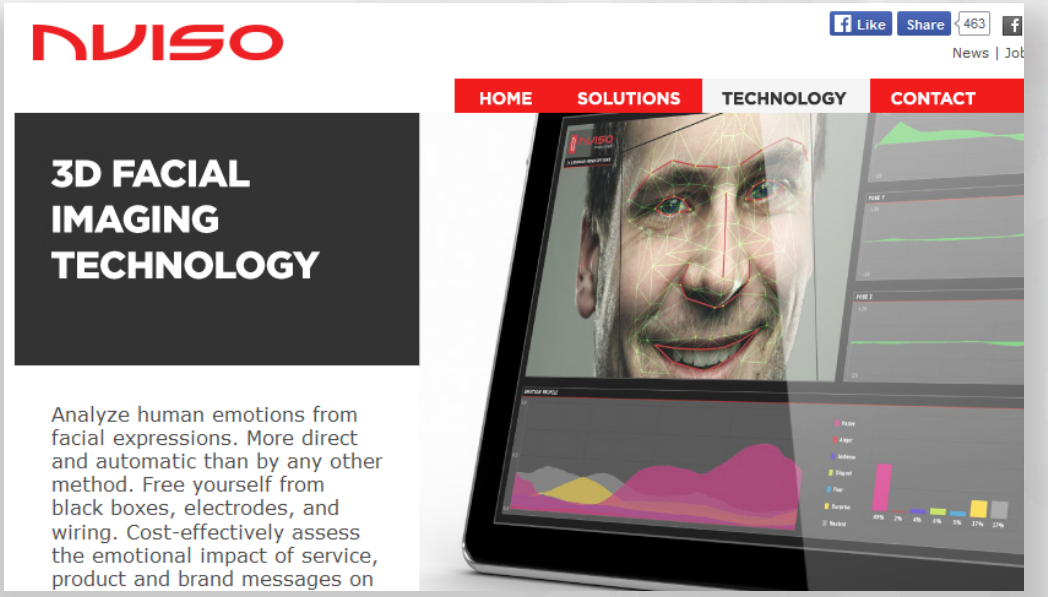
Mr Davey has held various roles within different organizations including Chairman, Managing Director as well as Corporate Adviser to the board.

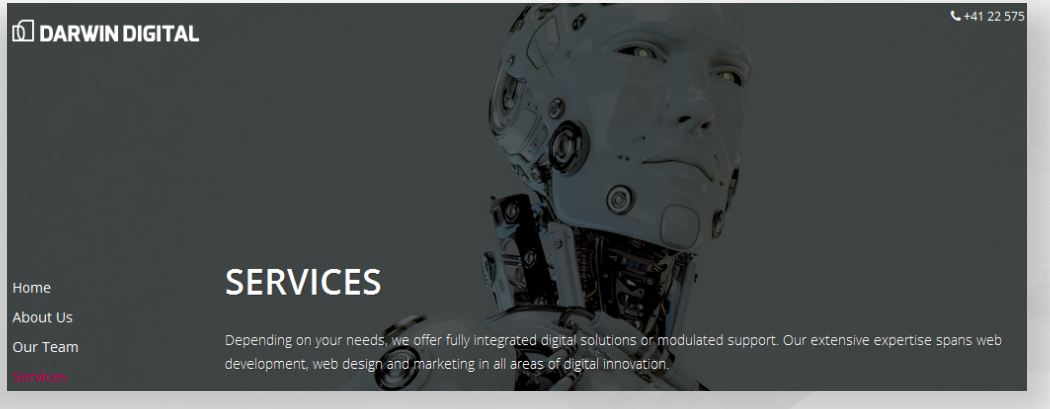
Our Partners

nViso, recognized for their expertise in micro-expression analysis, to assist the prototype App development

and

Darwin Digital to develop the commercial version of the ePAT App for Dementia and to do the backend development.





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