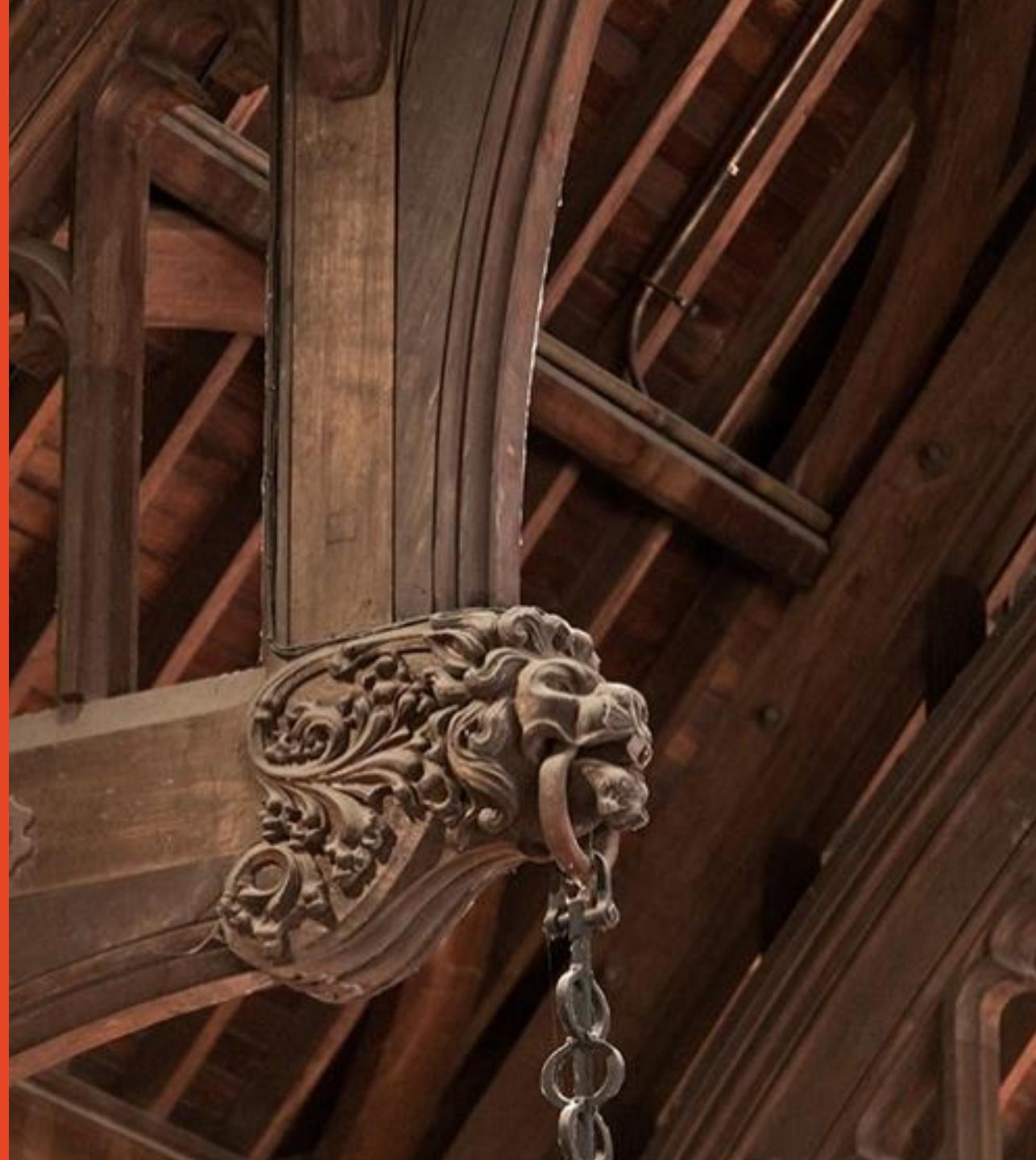


INFO5992 Understanding IT Innovations

Week 1: Introductions

A/Prof Jinman Kim

Semester 1, 2017



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COMMONWEALTH OF AUSTRALIA

Copyright Regulations 1969

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Agenda

- UoS Introduction / Outline / Admin
- Definition of Innovation
- Importance of Innovation
- Innovation System
- Innovation in Australia
- About my Research interests – Innovation in the health sector

Teaching Team – Lecturer and Coordinator

- <http://sydney.edu.au/engineering/people/jinman.kim.php>

ASSOCIATE PROFESSOR JINMAN KIM

School of Information Technologies
Director of the BMIT Visual TeleHealth Lab

[J12 - The School of Information Technologies](#)
The University of Sydney

 +61 2 9036 9708

 jinman.kim@sydney.edu.au

 [Biomedical engineering and technology](#)

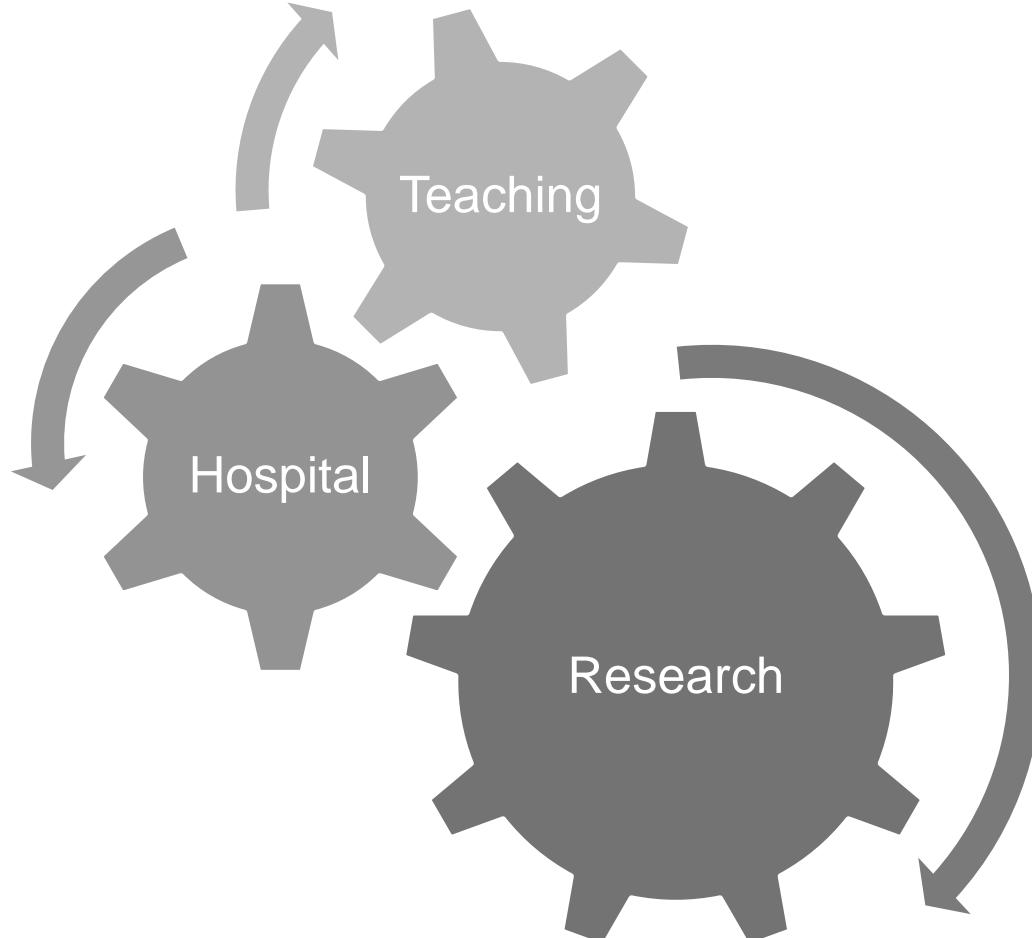
[BMIT Research Group](#)

[School of Information Technologies](#)

SEARCH PAGE

Search this page





- Research (50%)
 - Research Director, working with a team on solving biomedical information systems problems
- Teaching (30%)
 - Sharing and learning of knowledge
 - Student supervision
- Hospital (20%)
 - Academic Director, Nepean Telehealth Technology Centre, Nepean Hospital
 - Research Associate, RPA Hospital

Teaching experiences

- Multiple Ugrad and Pgrad Lecturers
- Project Management
- COMP5206 – Information Systems and Technology
- INFO5306 – Enterprise healthcare IS
- A Research Team

Teaching Team

- Tutors: depends on your timetable
 - Euijoon (Osmond) Ahn
 - Tian Steven Xia
 - Tran Ha Phan
 - Kritika Joon
 - Shilpa Shetty
- Guest Lectures

Unit of Study INFO5992

Introduction

Unit of Study (UoS) History

- Taught for many previous years by Bill Simpson



UoS topics

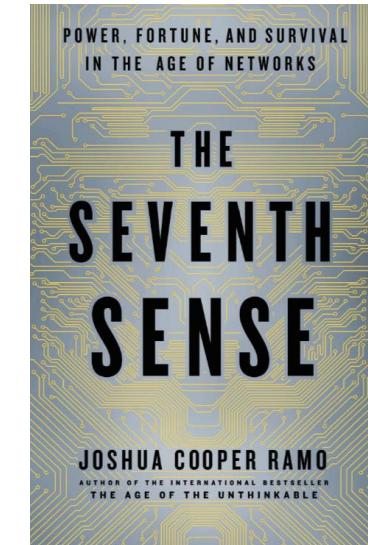
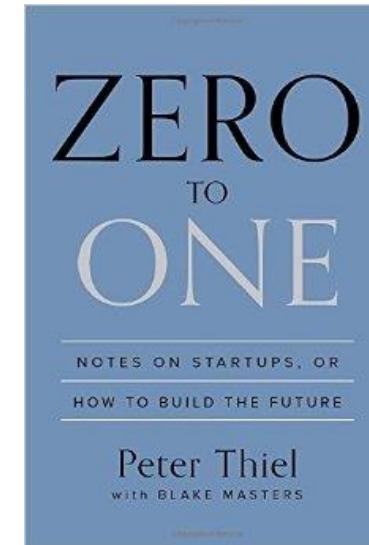
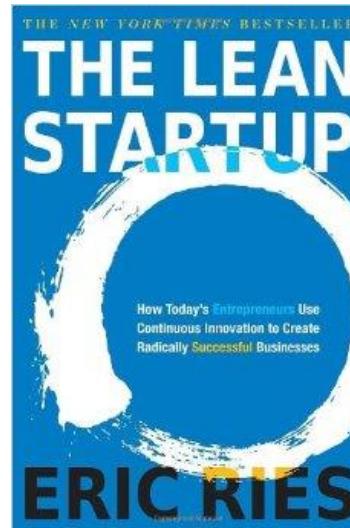
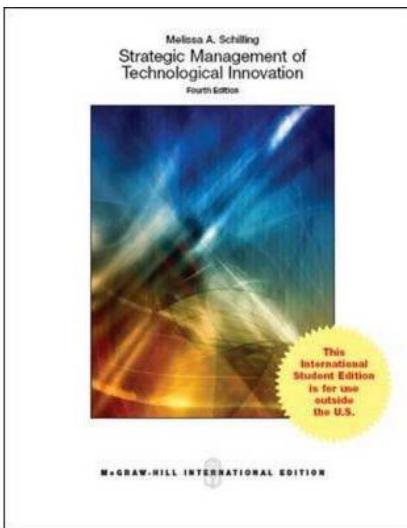
- Introduction to technological innovation
 - What is innovation and why is it important
- Patterns in society
 - Diffusion of innovations
 - Technology cycles
 - Design dominance
 - Disruptive innovation
 - The future of jobs
- Innovation systems and communities
 - Innovation ecosystems
 - Open innovation
 - User innovation
 - Free and open source software
- Innovation by established companies
 - Organisational structure and culture for innovation
 - Practices in established companies
- Innovation by startups
 - Practices in startups
 - Investment in innovation
- Intellectual property and innovation

Recommended reading material

- To be released in the Lectures
 - Many references and sources included in the slides
- To be released as part of a tutorial

Reference books

- It is not required for purchase, but you may find it useful to guide your exploration of the ideas
- Others introduced throughout the UoS
- This and other relevant works can be found in the university library



Tutorials

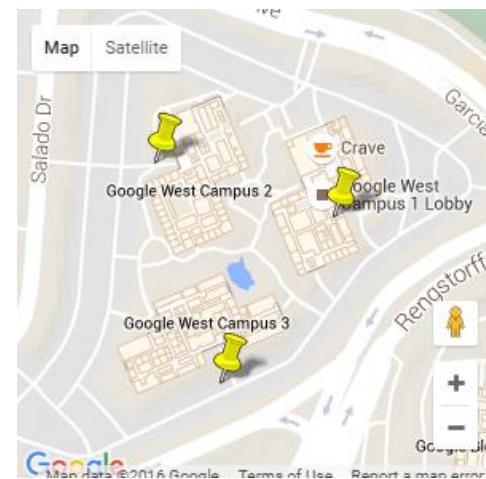
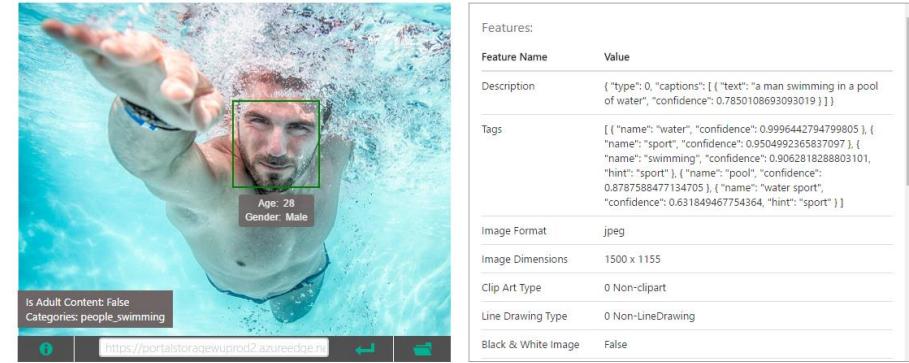
- In a class ~20 students
- Study a key Topic from the Lecturer within a small group of ~5 students
 - Concept to read and discuss
 - Technology to try and evaluate
- Summarise main findings within the group
- Present and discuss the findings with the class

- Ask Questions and Clarify

Tutorials

— Tutes

- *Massive Open Online Courses – Enabling technologies and Peer-review*
- *Design Dominance in the Smartphone market*
- *Innovative Tech Practice – Cognitive services*
- *Innovative Tech Practice – Open source Geolocation and Maps*
- *Sharing Economy*
- *Judging Innovation (Example in the Healthcare sector)*
- *Business Model Canvas*



Teaching location

- Tute: depends on your timetable
 - Go to the lab you are scheduled for
- Do not miss class, except for illness, emergencies, etc
- Get help from staff if you feel you are falling behind

Part PRAC Practical

Stud. Each student enrolled goes to one of the following 5 classes. Class allocations are preserved on 19/03/17.

- [M20A](#) Mon 20:00 [wks 1 to 13] in [Link Building 222 \(North\)](#) (Capacity: 20)
(Preferred: 20, Limit: 20)
- [M20B](#) Mon 20:00 [wks 1 to 13] in [Link Building 222 \(South\)](#) (Capacity: 20)
(Preferred: 20, Limit: 20)
- [M20C](#) Mon 20:00 [wks 1 to 13] in [Link Building 122](#) (Capacity: 20)
(Preferred: 20, Limit: 20)
- [M20D](#) Mon 20:00 [wks 1 to 13] in [Madsen Computer Lab 211](#) (Capacity: 23)
(Preferred: 20, Limit: 23)
- [M20E](#) Mon 20:00 [wks 1 to 13] in [Madsen Computer Lab 226](#) (Capacity: 20)
(Preferred: 20, Limit: 20)

Assessment

- Quiz 5% (Week 5)
 - Mid-semester Quiz
- Participation 5% (Week 8-10)
 - Attendance and participation in group presentations
- Presentation - IT Innovation Case Studies 10% (Week 8-10)
 - Presentation of a Case Study to the class (Group Work)
- Essay (Innovation Review) 20% (Week 12)
 - Critical Essay on a topic with IT innovation (Individual Work)
- Final Exam 60% (Exam Period)
 - Final exam covering all material covered in lectures, guest lectures, assigned reading and class discussion

Late assessments

- Suppose you hand in work after the deadline:
- If you have not been granted special consideration or arrangements
 - A penalty of 20% of the available marks will be taken, per day (or part) late
- Eg your work would have scored 60% and is 1 hour late
 - you get 40%
- Eg your work would have scored 70% and is 28 hours late
 - you get 30%
- Warning: submission sites get very slow near deadlines
- Submit early; you can resubmit if there is time before the deadline

UoS Outline

Week	Lecture Topics	Activity
1. 6 Mar	UoS Introduction; Definition of Innovation; Innovation System; Innovation in Australia	N/A
2. 13 Mar	Introduction to Technological / IT innovation	Tute 1 – Massive Open Online Courses – Enabling technologies and Peer-review
3. 20 Mar	Dynamics of Technological / IT Innovation; Source of Innovation; Adoption of Technology; Dominant Design	Tute 2 – Design Dominance in the Smartphone market
4. 27 Mar	Disruptive Innovation; Industry Value Chain; Value Network analysis	Tute 3 – Innovative Tech Practice – Cognitive services <i>Group Presentation Introduction – Topics Released</i>
5. 3 Apr	Distributed innovation I: Open / Closed innovation; Platform innovation; Web APIs; Crowdsourcing / crowdfunding	<i>Mid-semester Quiz</i> <i>Group Presentation – Topic Selection</i> <i>Individual Assignment Introduction</i>
6. 10 Apr	Distributed innovation II: User innovation; Free and Open source software; Open Data	Tute 4 – Innovative Tech Practice – Open source Geolocation and Maps
<i>Easter (Break)</i>		
7. 24 Apr	Innovation ecosystem; Sydney's innovation ecosystem	<i>Group Presentations I – IT Innovation Case Studies</i> <i>Peer-review of Group Presentations</i>
8. 1 May	Group Presentations II – IT Innovation Case Studies	<i>Peer-review of Group Presentations</i>
9. 8 May	Group Presentations III – IT Innovation Case Studies	<i>Peer-review of Group Presentations</i>
10. 15 May	Organisational Culture; Structure supporting innovation	Tute 5 – Sharing Economy
11. 22 May	Innovation in Industry sectors	Tute 6 – Judging IT Innovation (Example in the Healthcare sector) <i>Individual Assignment Submission</i>
12. 29 May	Innovation by Start-up companies and Opportunities	Tute 7 – Business Model Canvas
13. 5 Jun	UoS Review	<i>UoS comments / questions</i>

Resources

- eLearning
 - Login using Unikey and password
 - Link to CUSP
 - Official schedule, list of learning outcomes, etc
 - Copies of slides
 - Tutorials and Lab notes
 - Assignment instructions
 - Lecture videos
 - We intend to record the lectures, but the technology is not reliable
 - Submit official assignment work here;
 - see your grades; etc

Expectations

- Students attend scheduled classes, and devote an extra 6-9 hrs per week
 - doing assessments
 - preparing and reviewing for classes
 - revising and integrating the ideas
 - practice and self-assess
- Students are responsible learners
 - Participate in classes, constructively
 - Respect for one another (criticize ideas, not people)
 - Humility: none of us knows it all; each of us knows valuable things
 - Check eLearning site at least once a week!
 - Notify academics whenever there are difficulties
 - Notify group partners honestly and promptly about difficulties

Special Consideration (University policy)

- If your performance on assessments is affected by illness or misadventure
- Follow proper bureaucratic procedures
 - Have professional practitioner sign special USyd form
 - Submit application for special consideration online, upload scans
 - Note you have only a quite short deadline for applying
 - http://sydney.edu.au/current_students/special_consideration/
- Also, notify coordinator by email as soon as anything begins to go wrong
- There is a similar process if you need special arrangements eg for religious observance, military service, representative sports

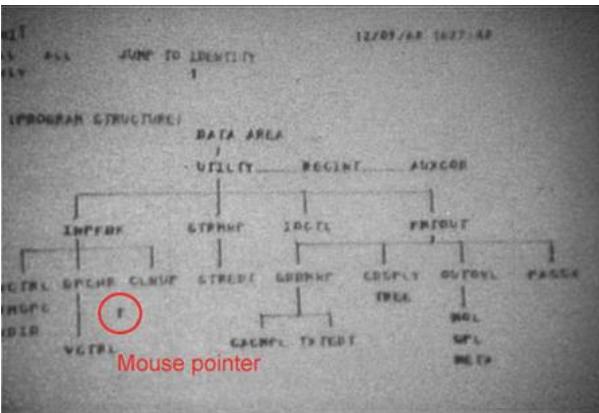
Academic Integrity (University policy)

- “The University of Sydney is unequivocally opposed to, and intolerant of, plagiarism and academic dishonesty.
 - Academic dishonesty means seeking to obtain or obtaining academic advantage for oneself or for others (including in the assessment or publication of work) by dishonest or unfair means.
 - Plagiarism means presenting another person’s work as one’s own work by presenting, copying or reproducing it without appropriate acknowledgement of the source.” [from site below]
 - <http://sydney.edu.au/elearning/student/EI/index.shtml>
- Submitted work is compared against other work (from students, the internet etc)
 - Turnitin for textual tasks (through eLearning), other systems for code
- Penalties for academic dishonesty or plagiarism can be severe

UoS Adminstrivia

Definition of Innovation

Examples of IT Innovations



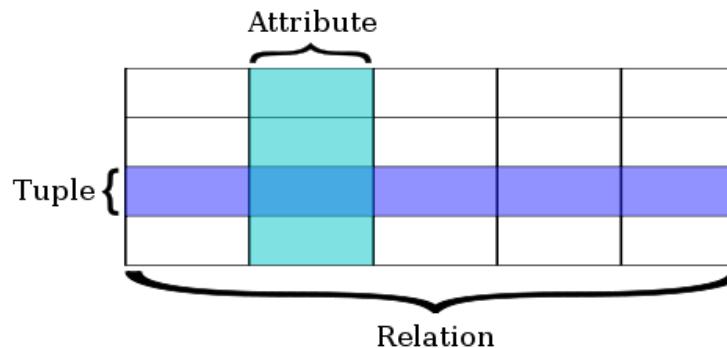
The Graphical User Interface



WWW architecture (HTML/HTTP/URL)

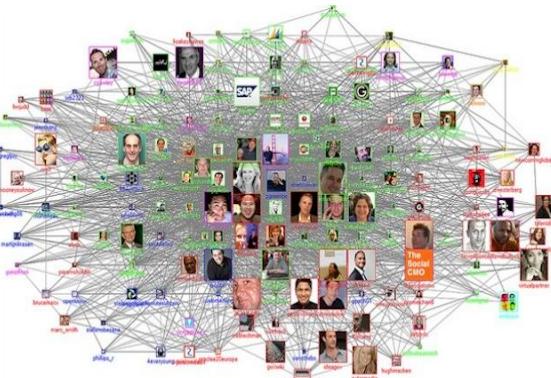


The Google search engine



Relational databases

Some newish IT innovations



Graph databases
Image: beedesign.org



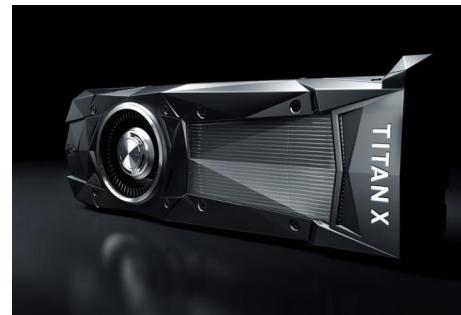
Smartglasses (eg Hololens)



https://www.robots.ox.ac.uk/~mobile/Papers/2015ISMAR_ondruska.pdf



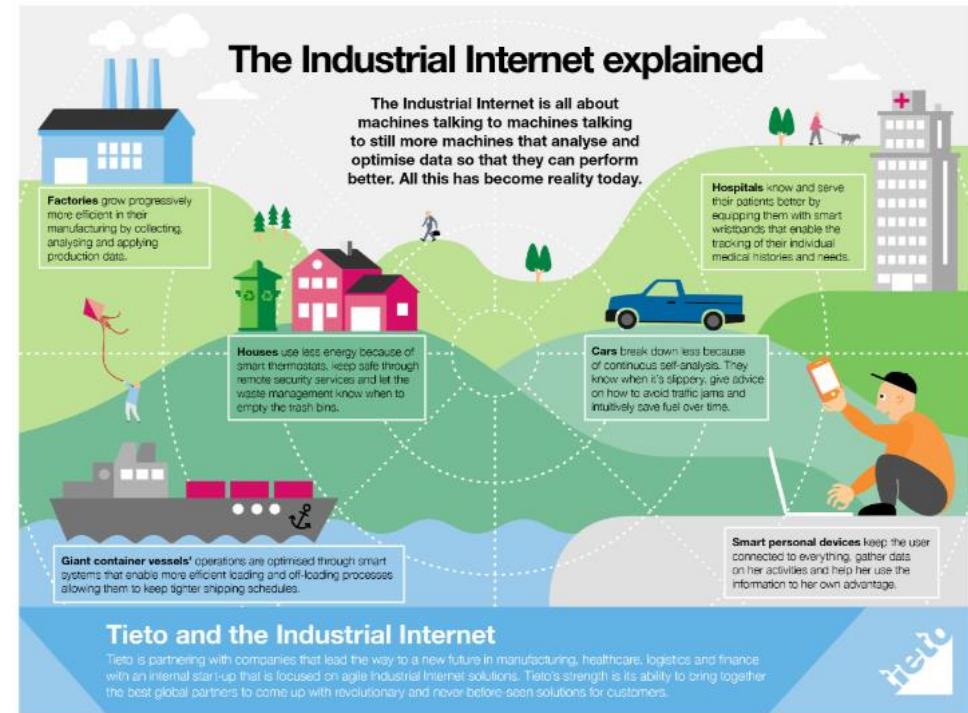
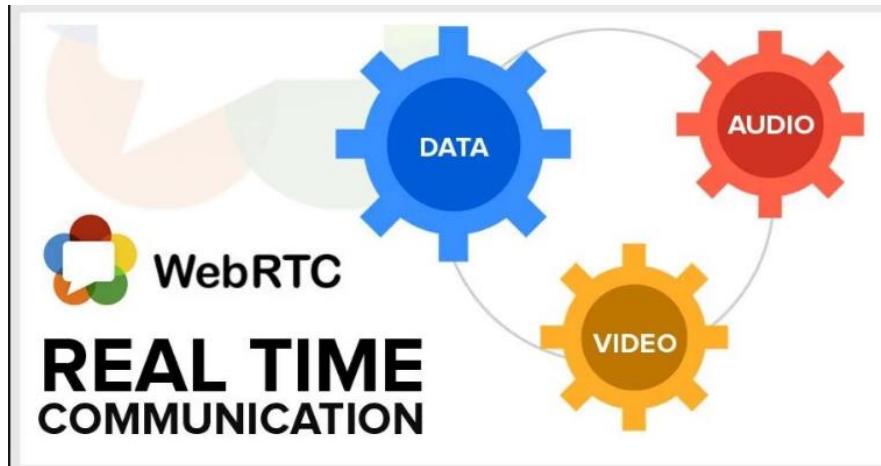
RGB-D Cameras



Titan X / DGX1

<https://blogs.nvidia.com/blog/2016/07/21/titan-x-deep-learning/>

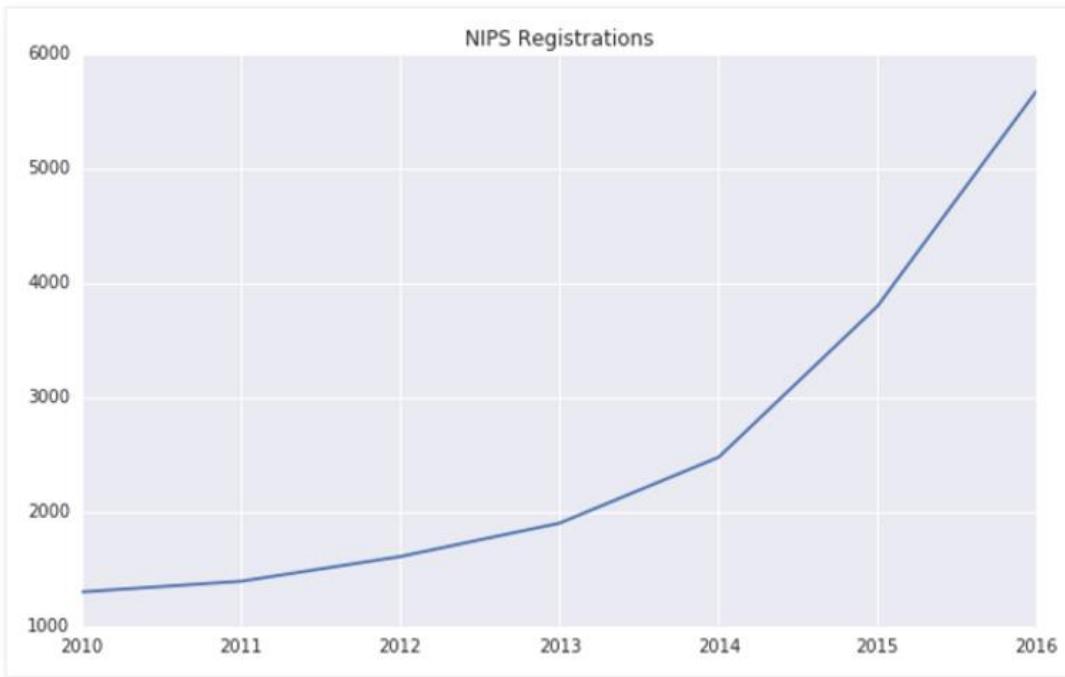
Some newish IT innovations



Industrial Internet of Things technology infrastructure will enable many new innovation

<http://www.iiconsortium.org/>

Titan X – GPU Deep Learning computer



- Academic, industry, and public interest in Artificial Intelligence (A.I.) is taking off. There was a 50% percent increase in NIPS registrations from last year
- Neural Information Processing Systems (NIPS) <https://nips.cc/>

What's the UoS about?

Understanding

IT

Innovations

Some questions the course will answer

What is technological innovation?

What different types of innovation are there?

Why do companies care about innovation?

Why do countries care about innovation?

How does innovation happen?

How do innovations spread?

How should established companies organise themselves to create innovations?

What makes some innovations successful and others not?

How should my company know which innovations to adopt?

What jobs will still exist in the future?

How do I get a new idea for a startup company?

How do I get funding for my startup company?

And lots more!

Disciplines that the course draws on

Economics

Sociology and
Psychology

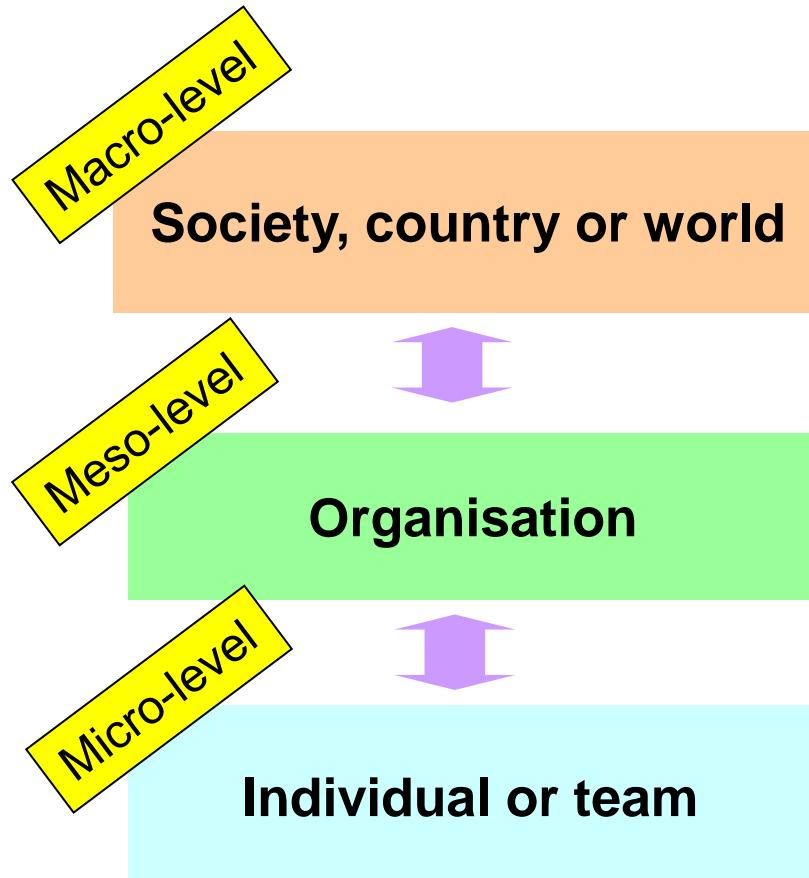
Technology
management

Information
Technology

Business
studies

Entrepreneurship

Macro-, Meso- and Micro-level discussions



- How the **innovation system** works
 - How technology cycles work
 - Drawn mostly from economics and sociology
-
- How organisations can **adopt innovations**
 - How organisations can **produce innovations**
 - Drawn mostly from business studies, technology management and IT
-
- How individuals can **drive innovation**
 - Drawn mostly from entrepreneurship and case studies

Relevance to IT careers

A. Enterprise IT

Understand IT innovations so you can analyse likely impact from new technologies and plan for their adoption

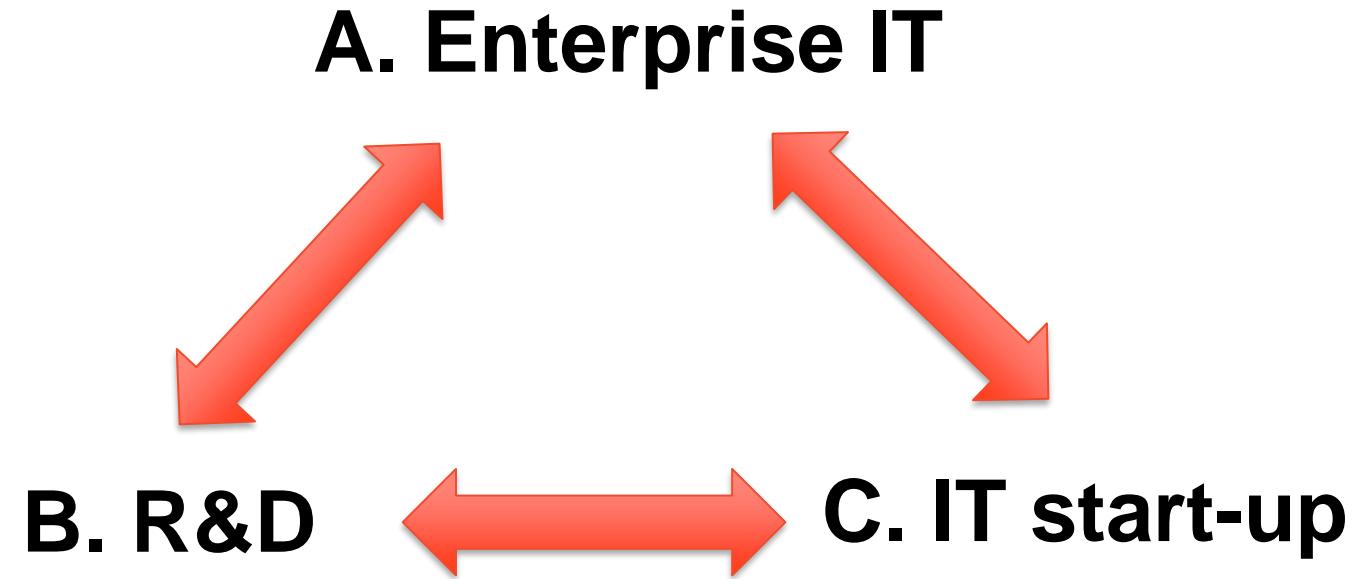
B. R&D of IT technologies

Understand IT innovations so you can lead the development of new technologies within an established organisation

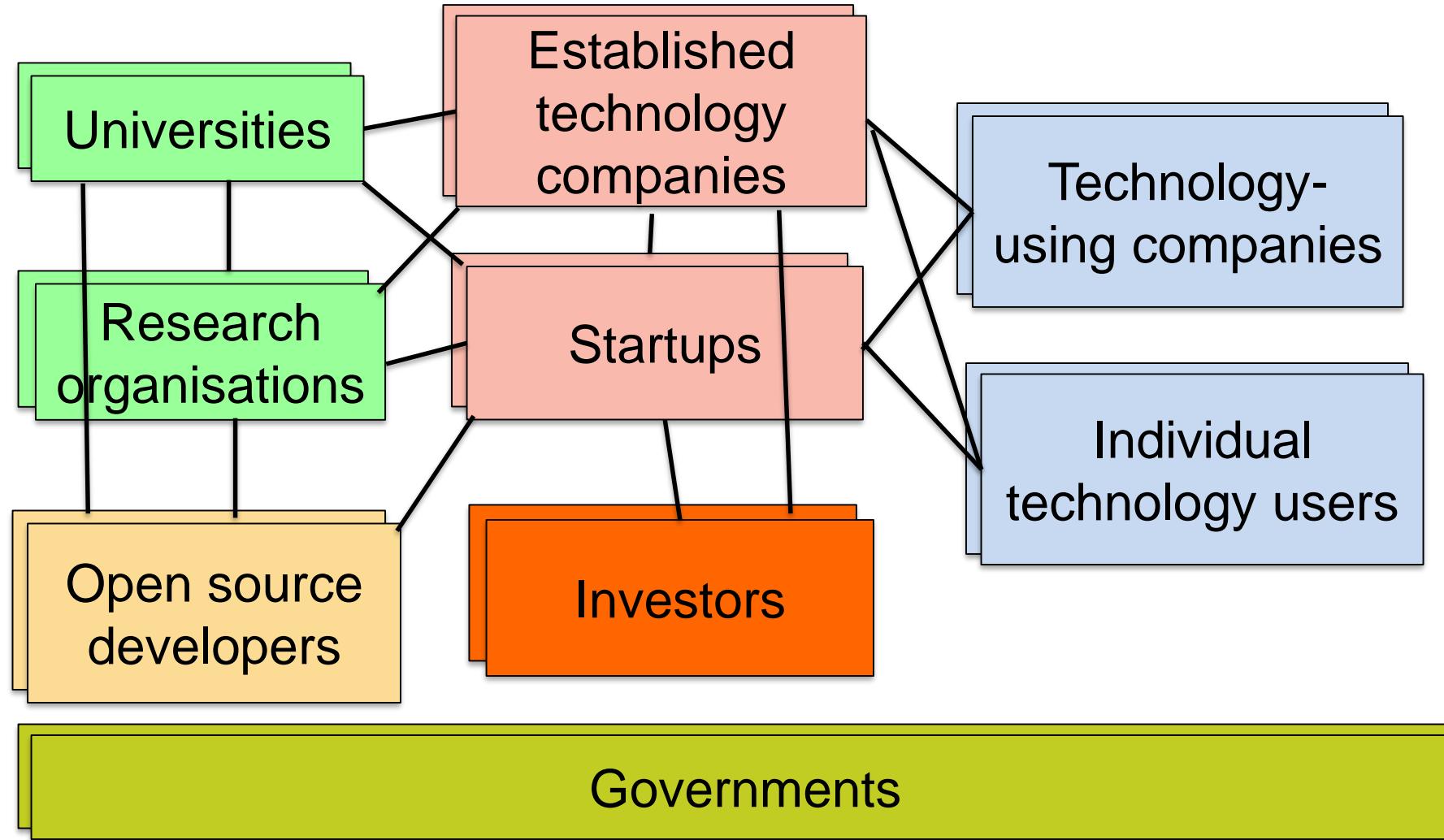
C. IT start-up

Understand IT innovation so that you can create a software start-up company

Relevance to IT careers



IT innovation ecosystem



Definition of Innovation

Innovation vs Invention



Joseph
Schumpeter,
Economist and
political scientist
(1883 – 1950)

- ***Innovation involves (1) a new idea that is (2) applied commercially***
– Schumpeter (1930s).
- ***“Invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice.”***
- ***Jan Fagerberg, Oxford Handbook of Innovation, 2004***

Definition of innovation

“Innovation is not simply invention; it is invention put to use. Invention without innovation is a pastime.”

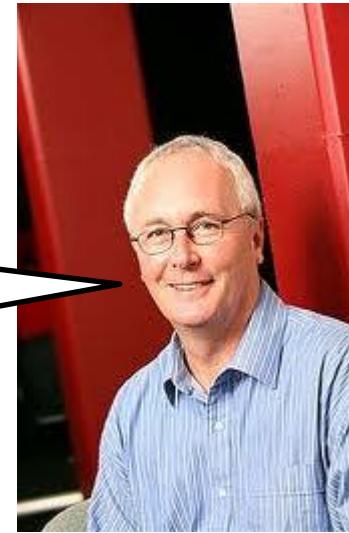


(Photo by Liam Doherty)

Sir Harold Evans, journalist and writer on the history of innovation

Definition of innovation

“Ideas successfully applied.”

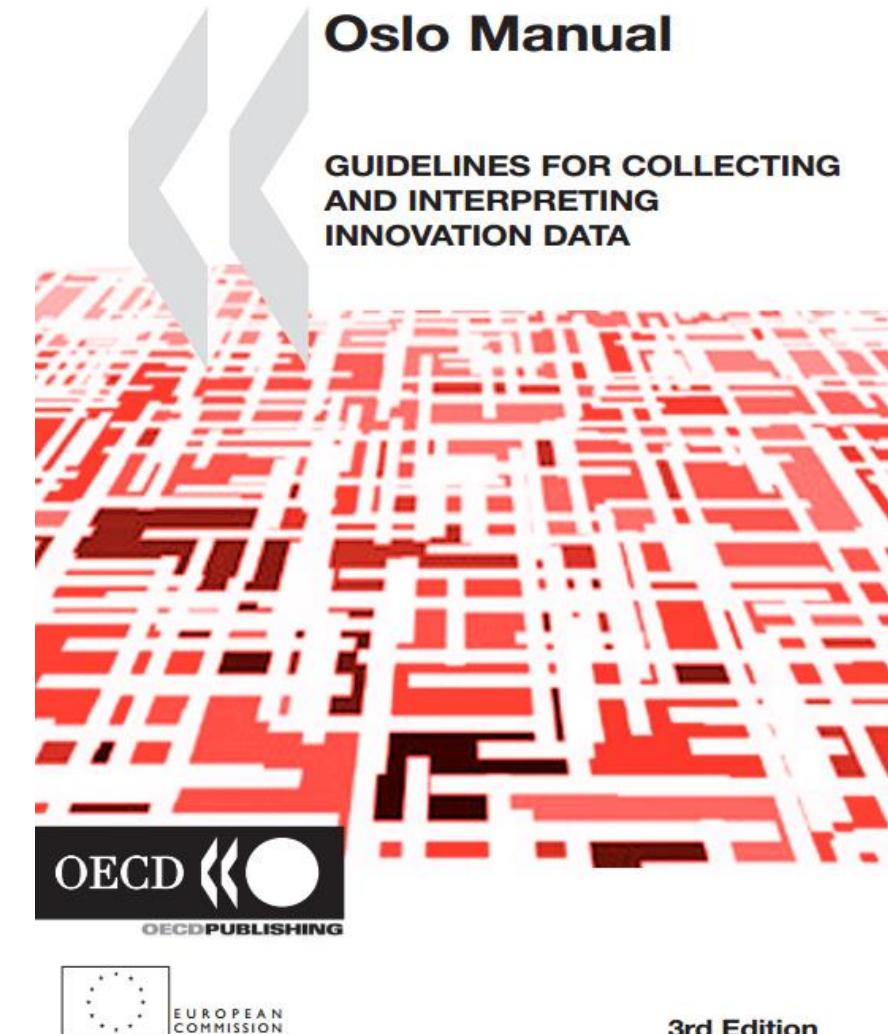


Mark Dodgson, academic/author on innovation, Uni of QLD



Definition of innovation

- *Innovation is the **implementation** of a new or significantly improved product (good or service), process, new marketing method or a new organisational method in business practices, workplace organisation or external relations.*
- OECD (2005) Oslo Manual: Guidelines for collecting and interpreting innovation data, 3rd edition, OECD and European Commission



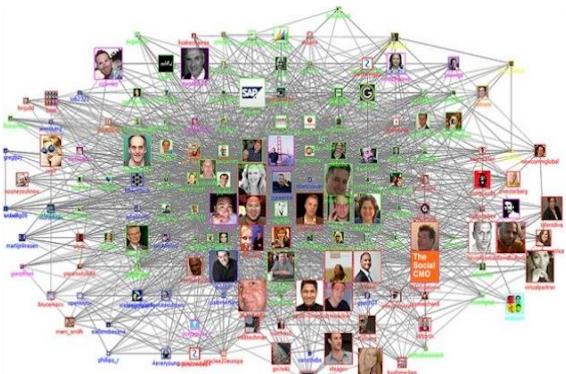
Organisation for Economic Co-operation and Development (OECD) Innovation

- The mission of the Organisation for Economic Co-operation and Development (OECD) is to promote policies that will improve the economic and social well-being of people around the world.
- The OECD has developed the Observatory of Public Sector Innovation (OPSI) to collect and analyse examples and shared experiences of public sector innovation to provide practical advice to countries on how to make innovations work.

Definition of innovation

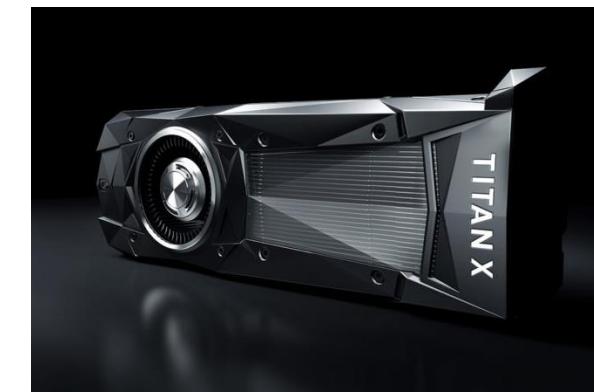
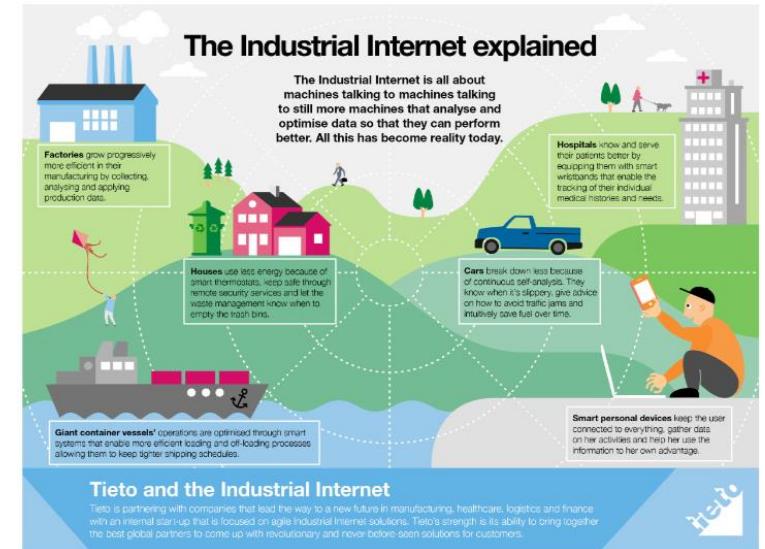
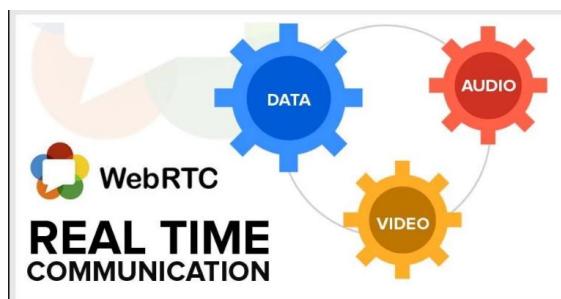
- So...
- Innovation is more than the generation of creative ideas
- It is implementation of those ideas into a new business/
device/process/product
- **Innovation requires combining a creative idea with resources and expertise that make it possible to embody the creative idea in a useful form**

What is invention and what is innovation?



Graph databases

Image: beedesign.org



The importance of innovation

Innovation as “Creative Destruction”

- Economy is in state of constant tumultuous change
- Innovation propels the economy
- Entrepreneurs within new firms drive innovation:
 - All companies react adaptively to change
 - Creative responses to change come **via innovative acts by entrepreneurs**
- Different forms of innovations:
 - New products; New organisations (e.g. mergers); New markets
 - Innovating firms emerge after **technological breakthrough**

Innovation as “Creative Destruction”



Schumpeter

- “the opening up of new markets... and the organizational development ... illustrate the same process of industrial mutation, that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one”.
- Schumpeter called this process “creative destruction”.
- Creative destruction – waves that restructure entire industries and markets in favour of those who grasp and adapt to technological **discontinuities** faster!

American Capitalism...

- “Let your winners run” is one of the oldest adages in investing. One of the newest ideas is that the winners may be running away with everything.
- Why might it be easier now for winners to take all? Prof. Michael S. Michaeley suggests two theories. Declining enforcement of antitrust rules has led to bigger mergers, less competition and higher profits. ***The other is technology. “If you want to compete with Google or Amazon,” he says, “you’ll have to invest not just billions, but tens of billions of dollars.***
- Perhaps the laws of creative destruction finally have been repealed once and for all. But sooner or later, capitalism has always been able to turn yesterday’s unstoppable winners into the also-rans of today and tomorrow.

By JASON ZWEIG Disturbing New Facts About American Capitalism

<http://blogs.wsj.com/moneybeat/2017/03/03/disturbing-new-facts-about-american-capitalism/>

Mar 3, 2017 8:41 am ET



Case Study

The Australian Innovation System Report



Australian Government
Department of Industry,
Innovation and Science

Office of the
Chief Economist



Australian Innovation
System Report
2016

WWW.INDUSTRY.GOV.AU/INNOVATIONREPORT

The Australian Innovation System Report

- The annual Australian Innovation System Report explores the impact of innovation and related activities on business, industry and national performance. The report also outlines challenges and future opportunities for Australian innovation.
- The innovation system plays a crucial role in the long-term economic growth of a country. The *2016 Australian Innovation System Report* presents new indicators that measure and analyse the impact of innovation, focusing on networks and framework conditions which form the essence of the innovation system. This year's report provides both a historical record of the measures and comparisons across the OECD countries.

<http://www.industry.gov.au/Office-of-the-Chief-Economist/Pages/National-Innovation-Map.html>

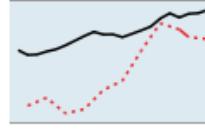
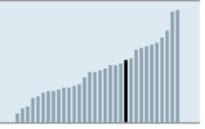
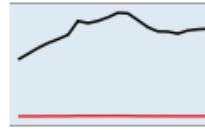
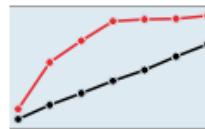
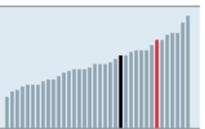
<http://www.innovation.gov.au/Innovation/Policy/AustralianInnovationSystemReport/>

Innovation System

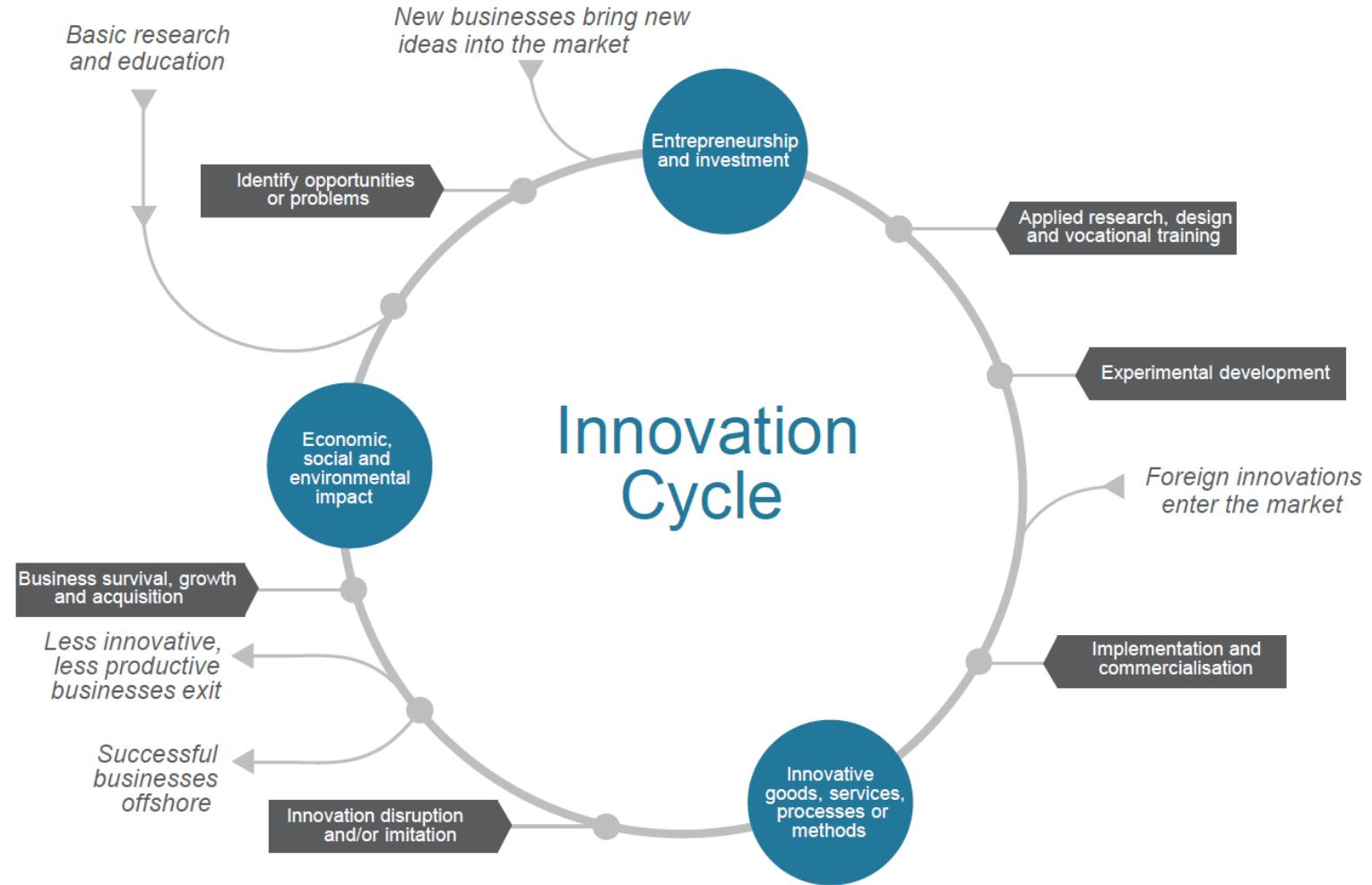
- We define an innovation system in this way:
- “*An innovation system is an open network of organisations that interact with each other and operate within framework conditions that regulate their activities and interactions.*
- *The three components of the innovation system —*
 - *networks,*
 - *innovation activities and*
 - *framework conditions*
- *collectively function to produce and diffuse innovations that have, in aggregate, economic, social and/or environmental value.”*

Australian Innovation
System Report 2016

OECD Innovation and Technology Index for Australia

Innovation and Technology	Latest	Trend	Ranking
❖ Gross domestic spending on R&D <small>INDICATOR</small>	2.1 % of GDP	 	
❖ ICT value added <small>INDICATOR</small>			
❖ Internet access <small>INDICATOR</small>	83.0 % of all households	 	
❖ Triadic patent families <small>INDICATOR</small>	316.4 Number	 	
❖ Wireless mobile broadband subscriptions <small>INDICATOR</small>	116.4 Per 100 inhabitants	 	
› Find all indicators on Innovation and Technology		http://www.oecd.org/gov/innovative-government/ https://data.oecd.org/australia.htm#profile-innovationandtechnology https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm	

Innovation Cycle



Source: Department of Industry, Innovation and Science (2016)

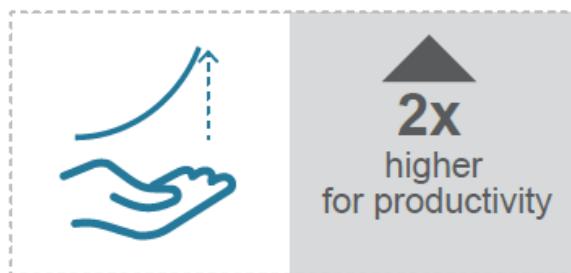
Innovation active Businesses

- **innovating businesses** (includes businesses that introduced at least one type of innovation during the reference period)
- **innovation-active businesses** (includes businesses that undertook any innovative activity irrespective of whether the innovation was introduced, still in development or abandoned during the reference period).
- Innovation activity – Are the discrete activities that lead to discoveries that have commercial potential, such as R&D, entrepreneurial activity, innovation funding (e.g. venture capital), or the training of scientists and engineers in tertiary education. Includes any work that was intended to, or did, result in the introduction of an innovation.

Australian Innovation
System Report 2016

Australian innovation-active businesses

The ratio of innovation-active businesses that reported increases in performance was:

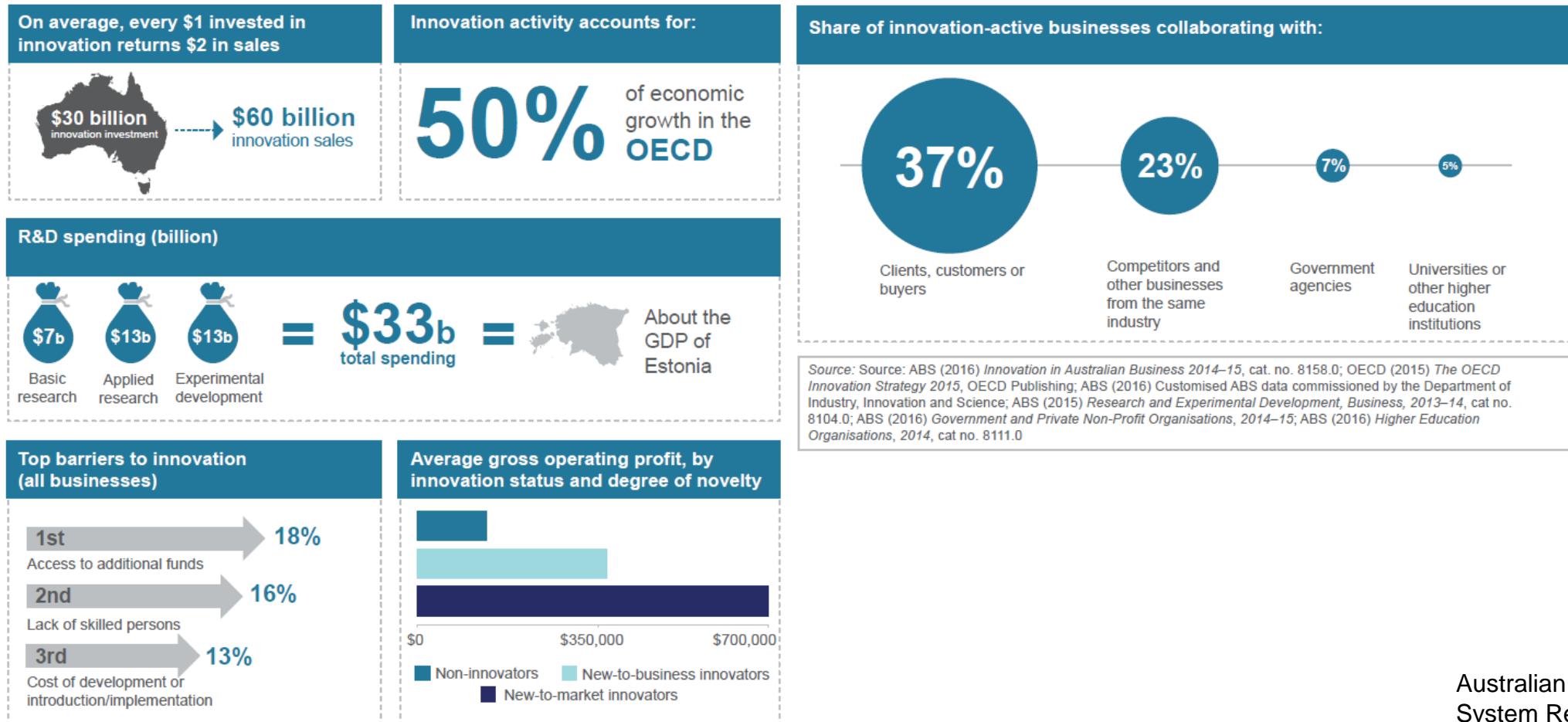


compared to non-innovation-active businesses

Source: ABS (2016) Selected characteristics of Australian businesses, 2014–15, cat no. 8167.0

Australian Innovation System Report 2016

Australian Innovation System



Australian Innovation System Report 2016

Importance of innovation to a Country

- According to the Australian Government report...
- “The qualitative and quantitative data in the Australian Innovation System Reports produced since 2010, in conjunction with the available academic literature, demonstrate a **causal** link between innovation and performance measures like productivity.
- The OECD estimates that as much as 50 per cent of economic growth in its member countries can be accounted for by innovation activity.”

Australian Innovation
System Report 2015

Importance of innovation to a Country

- “At the aggregate level, innovation leads to a more productive allocation of resources throughout the economy.
- Based on the concept of ‘creative destruction’ developed by Schumpeter, innovative cutting-edge firms (and their business models) enter markets and disrupt them forcing less productive models out.”

Australian Innovation
System Report 2015

Importance of innovation to a Country

- Technological innovation:
 - Is often the most important competitive driver in many industries
 - Leads to improvements in productivity
 - Is strongly linked with improvements in Gross Domestic Product (GDP)
 - Is linked to improvements in standard of living including:
 - Job creation
 - Improved enjoyment of life
 - Health improvements
 - Education improvements
 - Addressing national or global issues including by:
 - Decreasing pollution
 - Improving disaster response

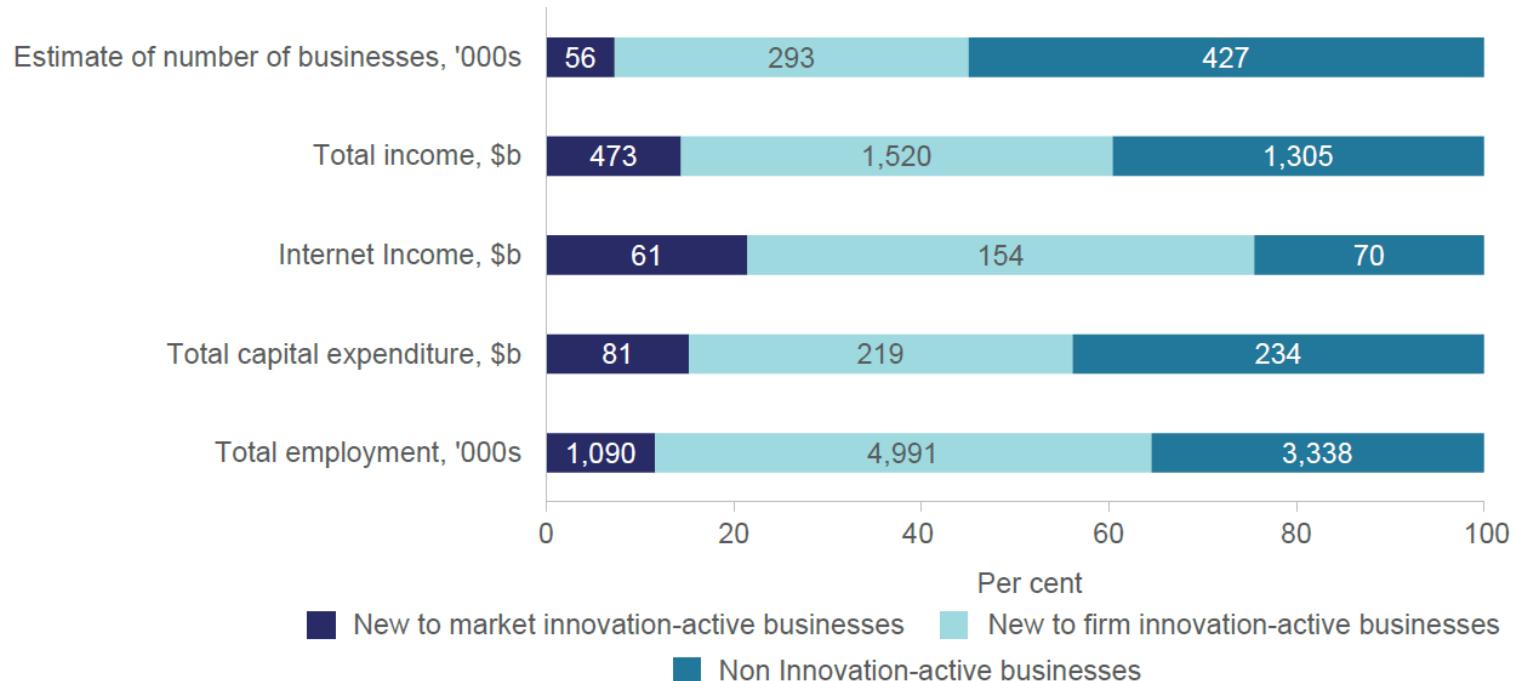
Australian Innovation
System Report 2015

Importance of innovation to Companies

- “Compared to Australian businesses that don’t innovate, innovative Australian businesses are also:
 - 42% more likely to report increased profitability;
 - Three times more likely to export and eighteen times more likely to increase the number of export markets targeted;
 - Four times more likely to increase the range of goods or services offered;
 - More than twice as likely to increase employment;
 - More than three times more likely to increase training for employees; and
 - More than three times more likely to increase social contributions such as community enhancement projects”

Importance of innovation to Companies

Figure 2.1: Total estimated number of employing businesses that are innovation-active, and their contribution to employment, income and capital expenditure, 2014–15



Notes: Estimates of the number of businesses operating in Australia can be derived from a number of sources within the ABS. Variations will occur because of differing data sources, differing scope and coverage definitions between surveys, as well as variations due to sampling and non-sampling error.

Source: Customised ABS data commissioned by the Department of Industry, Innovation and Science

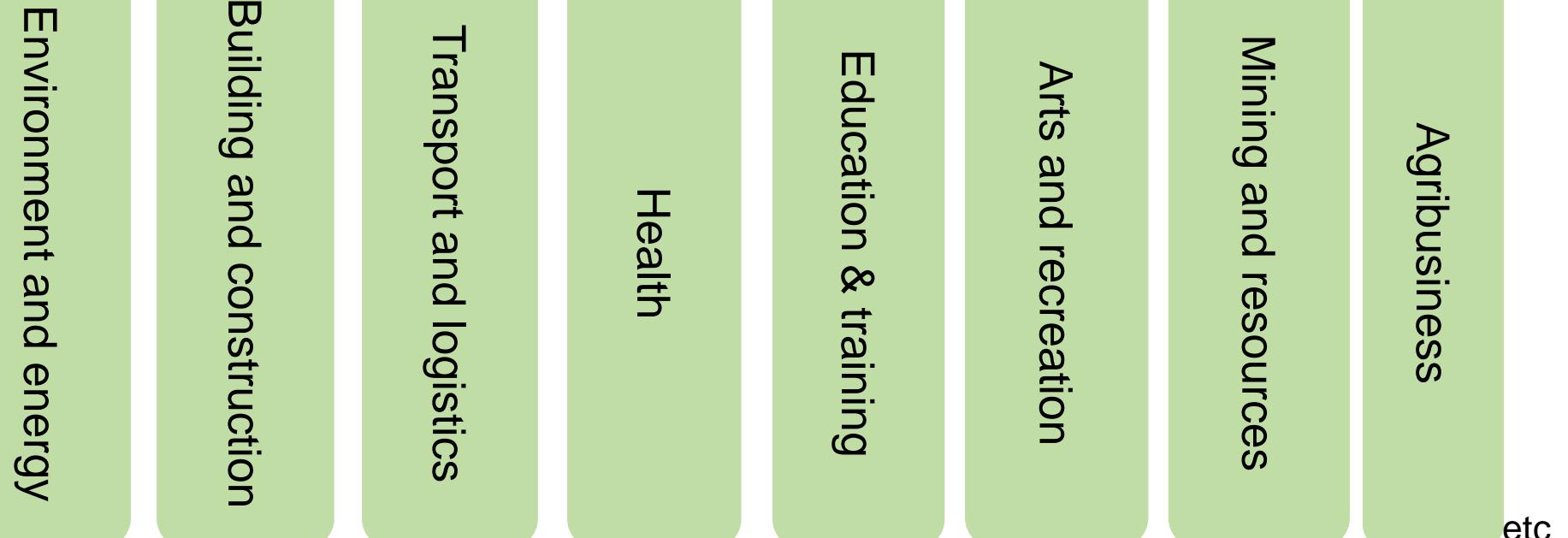
The importance of Information Technology for Innovation

IT as an enabling technology

- IT is a “General Purpose Technology” (GPT)
- Like electricity – it enables other technologies
- GPTs differ from other technologies :
 - Are pervasive – spreading to most sectors
 - Continually improve in usefulness and lower in cost
 - Spawn innovation in other areas – making it easier to invent and produce new products or processes

Source: ITU, *Measuring ICT for Social and Economic Development*, 2006.
(based on Bresnahan and Trajtenberg, “General purpose technologies”, 1995)

ICT and vertical industries



Week 2

- Greater depth into Technological innovation
- What types of innovation are there?
- What are the sources of innovation?

References

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THE UNIVERSITY OF
SYDNEY
Business School

Sydney Genesis Start-up Program

Strategy, Innovation and Entrepreneurship



- Sydney Genesis is the University of Sydney **cross-faculty start-up program**. Since 2008 we have supported more than **800 USYD students** and alumni to start their business ideas. Each semester around **100 students across the University** enrol in the program, getting access to **weekly workshops, one to one mentorship** with outstanding entrepreneurs and business leaders and **pitching opportunities**. The seven finalist teams present their ideas before a judging panel that awards the winners with cash and in-kind prizes. The top prizes are over \$5,000 and Sydney Genesis does not take any equity stake in your venture!
- In 2014 we **expanded to South East Asia** running the program in three countries: **Vietnam, Indonesia and Myanmar**. The Sydney Genesis program doesn't bear credits and is free of cost. Current students, alumni and staff are welcome to apply. **Applications close on the 20th of March by midnight**. To know more, come to **our info sessions** on the 9th of March 12-1pm ABS 2003 or the 14th of March from 3-4pm at ABS 3110.
- For more information or to apply, visit our website <http://sydney.edu.au/business/genesis> or send an email to Sydney.genesis@sydney.edu.au



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Nepean Telehealth Technology Centre



Achievements

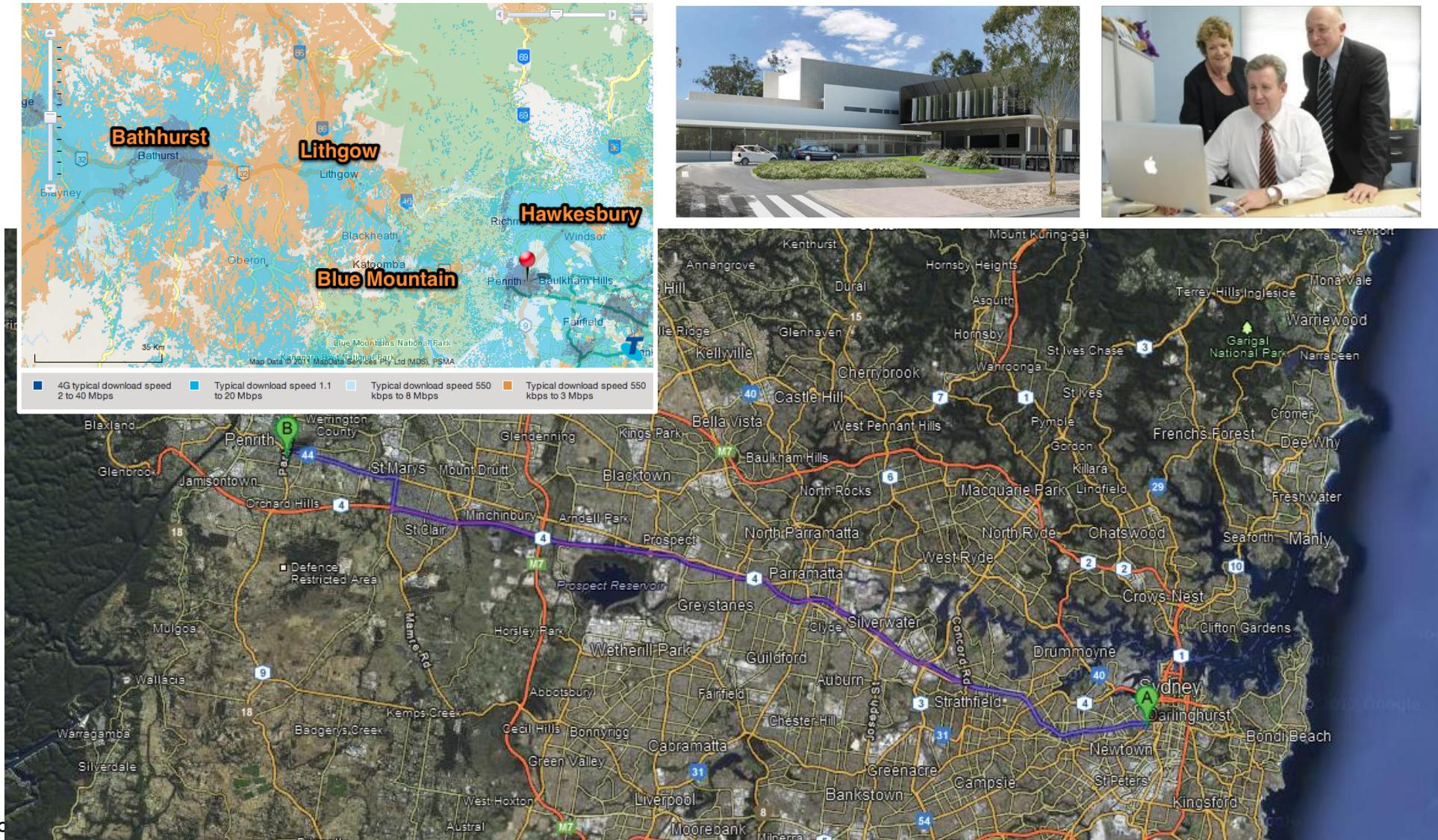


- NSW Health Secretary Award, 2016 NSW Health Innovation Symposium and Awards
- Invited to present at the Health Roundtable Innovations Workshops and Awards, 2015
- Invited to present at the transitioning to an Integrated Health Service conference, 2015
- Invited to present the Home Haemodialysis Telehealth Project at the Annual NSW Health Innovation Symposium, 2014
- Ministry of Health Integrated Care Planning and Innovation Fund proposal
- The Aged Care Project was supported through the Agency for Clinical Innovation redesign program.

Nepean Telehealth Technology Centre

- Director, NTTC
 - IT/IS Project Consultancy (Telehealth) and Education
 - Steering Committee (Board / Telehealth)
 - Process Mapping / Documentation
 - Health Tech Evaluation
 - Sustainability and Commercialisation
- Research Theme Leader, Institute of Biomedical Eng and Tech (iBMET)
 - Collaborative research, including joint MedX (Shanghai Jiatong)
 - Translating University technology / Patent / Licensing
 - Project supervision

Nepean Telehealth Technology Centre

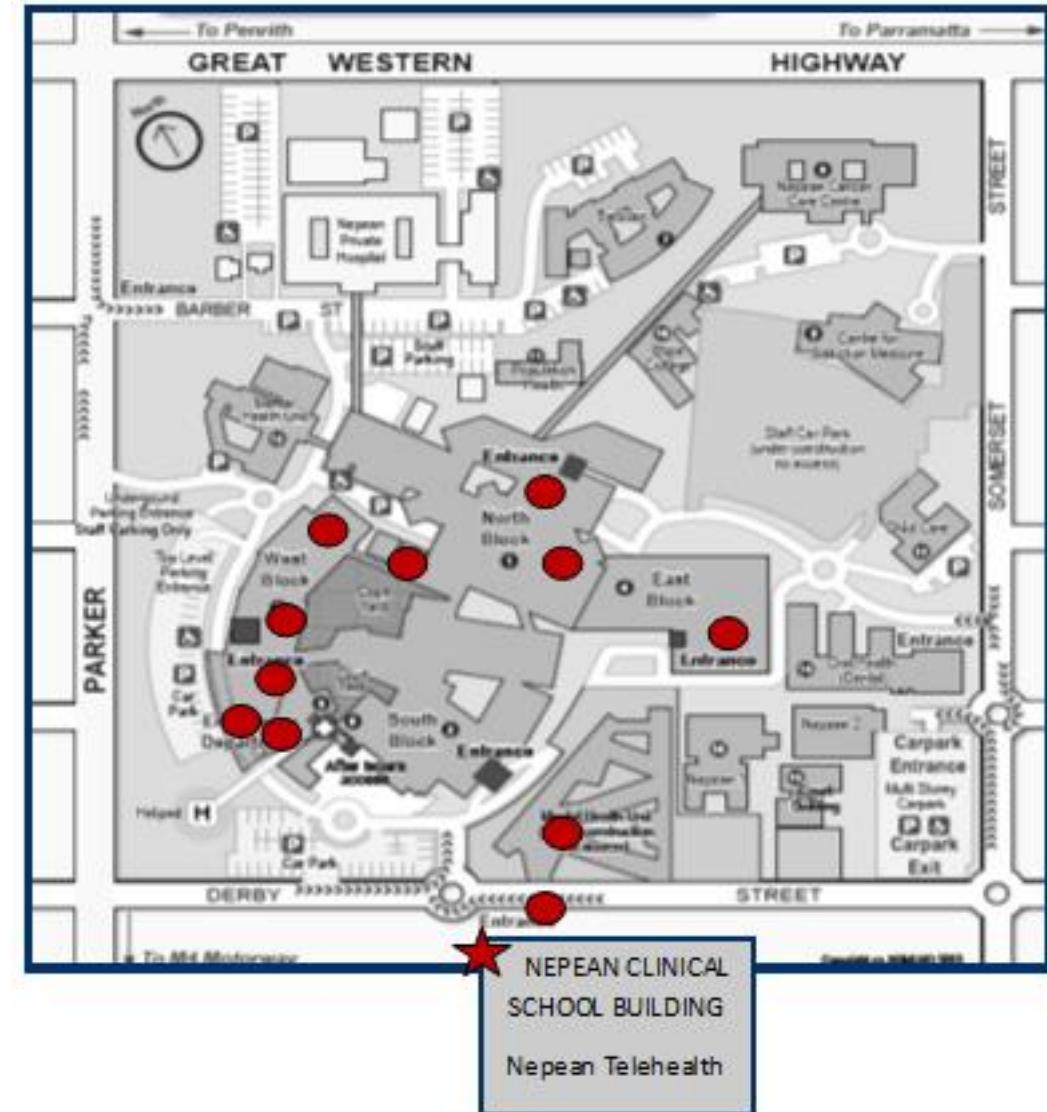


Nepean Telehealth Technology Centre

- **\$2M State Government Funding (2013)**
 - **19** departments/facilities/partners
 - **252** number of patients
 - **61** is the estimated number of staff



Health
Nepean Blue Mountains
Local Health District



Benefits

Patient Benefits

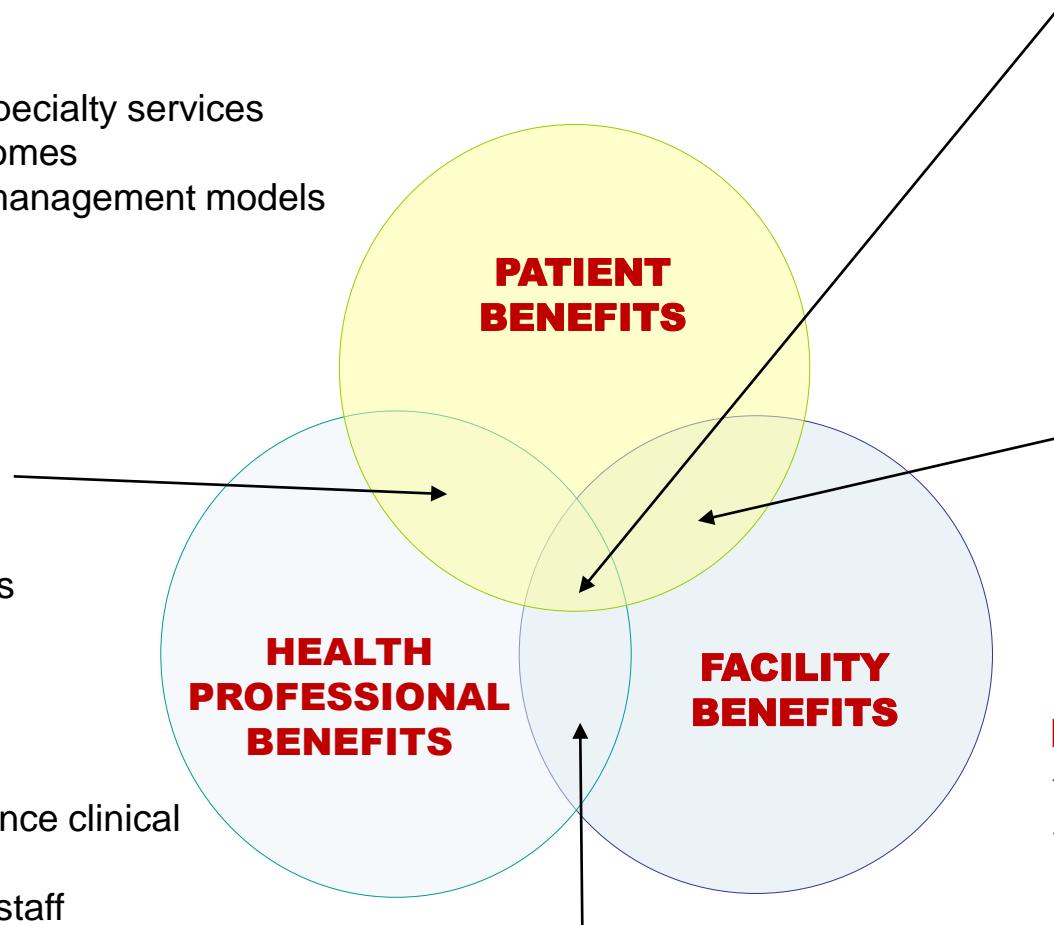
- ♦ Improved access to specialty services
- ♦ Improved health outcomes
- ♦ Development of self management models of care
- ↓ Travel

Patient and Health professional Benefits

- ♦ Improved relationship between patients and health professionals
- ↑ Staff and patient satisfaction

Health professional Benefits

- ♦ Improved staff access to enhance clinical decision making
- ♦ Professional development for staff



- ## Health professional and facility Benefits
- ♦ Maintenance of staffing levels
 - ♦ Opportunity to conduct and contribute to research and publications

Benefits to all

- ↓ Patient complication rate
- ↓ Length of stay in hospital due to timely access to specialty care
- ↓ Carbon footprint from less travel
- ↑ Public awareness
- ↑ Integrated approach to patient-centred care

Patient and facility Benefits

- ↓ Costs associated with lengthy travel
- ↓ Length of stay in hospital due to Telehealth follow up appointments

Facility Benefits

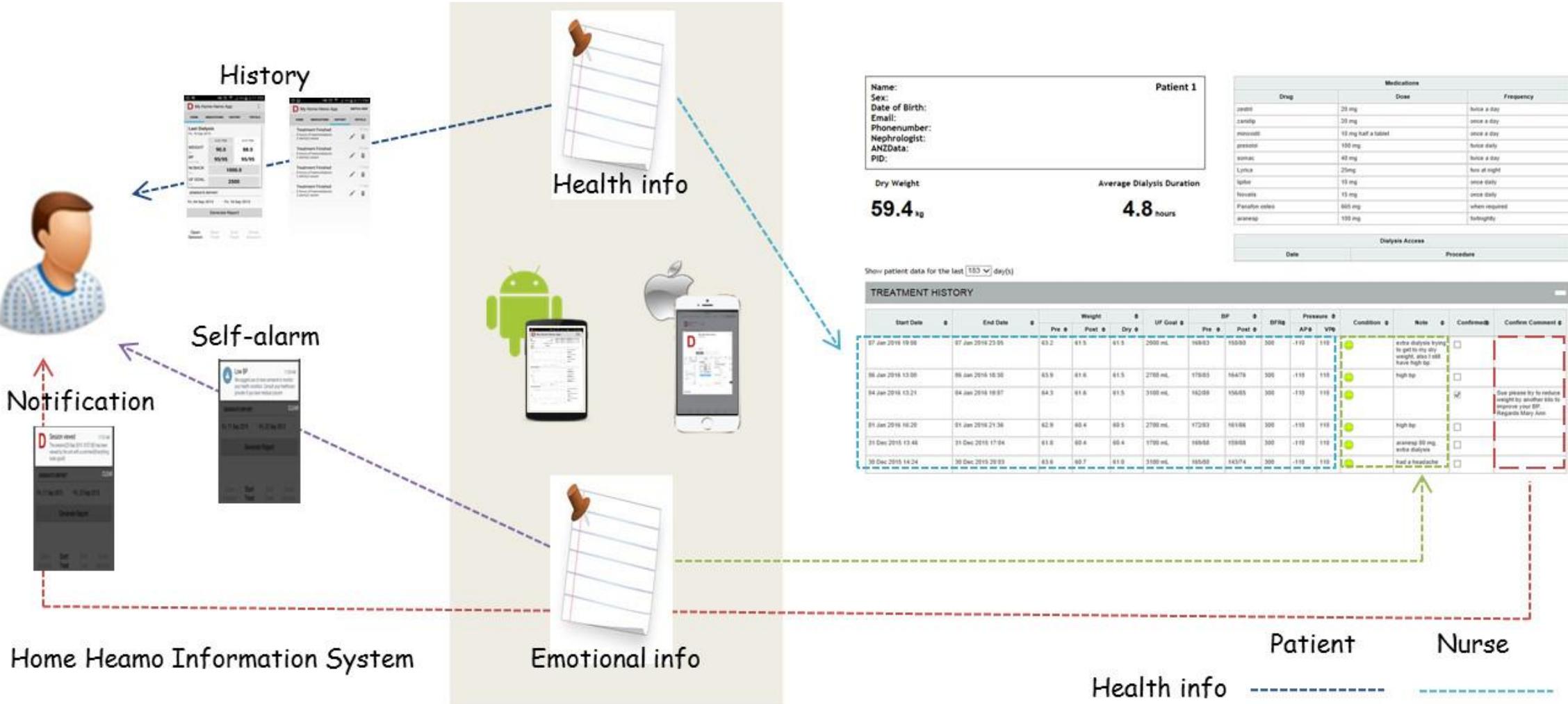
- ↓ ED presentations
- ♦ Improved relationships and communication between facilities



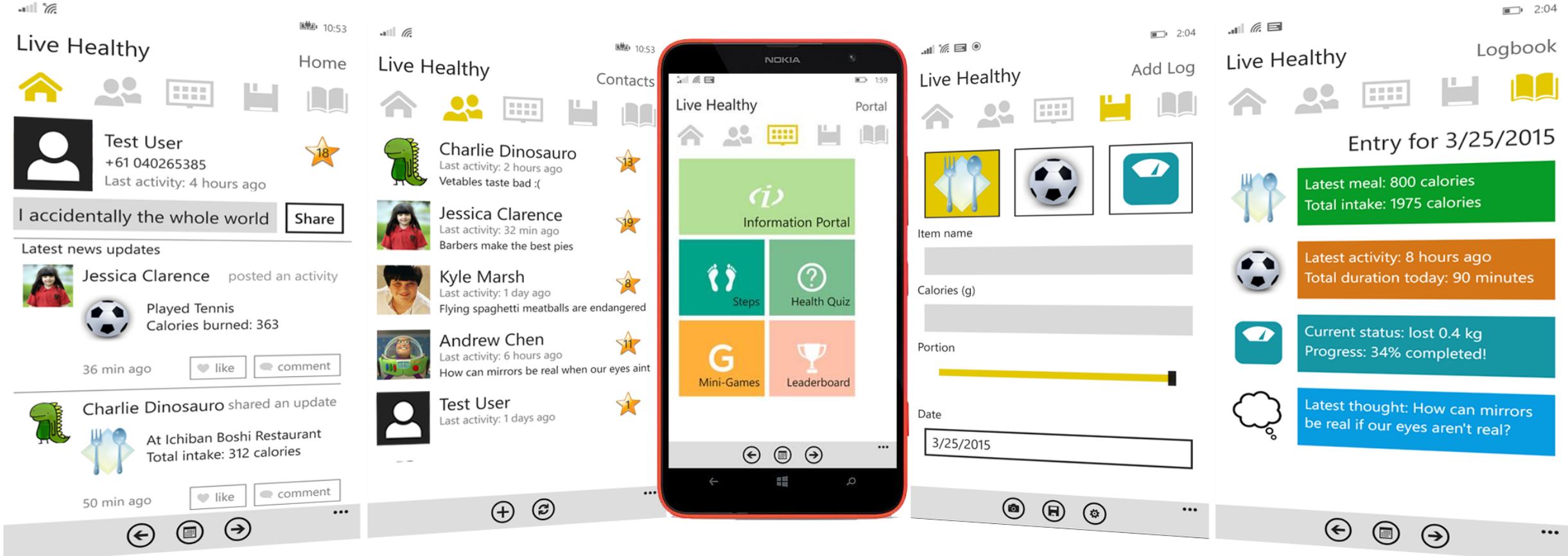
Home Dialysis



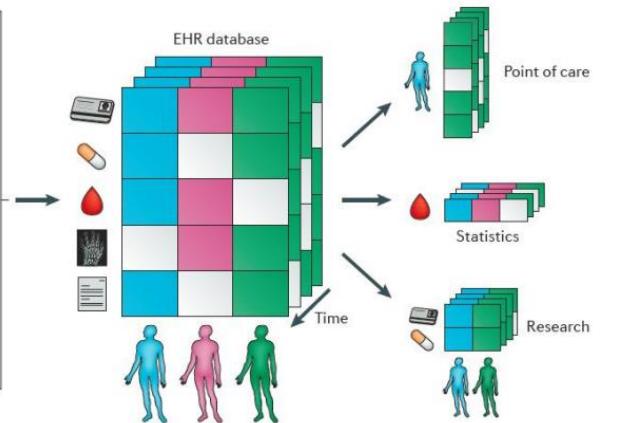
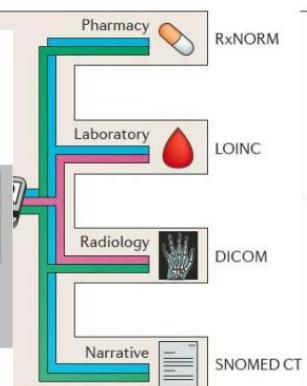
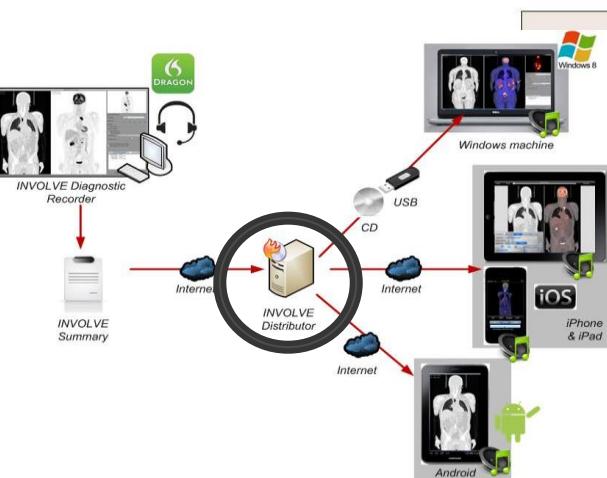
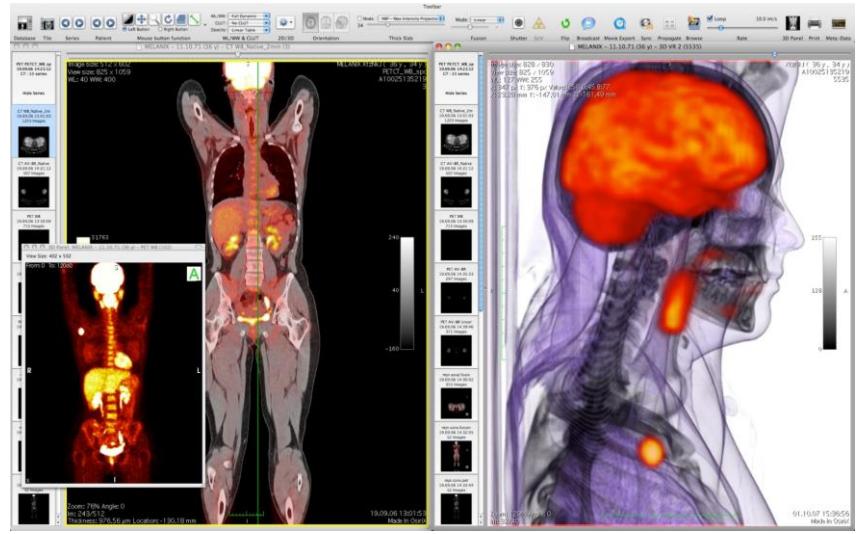
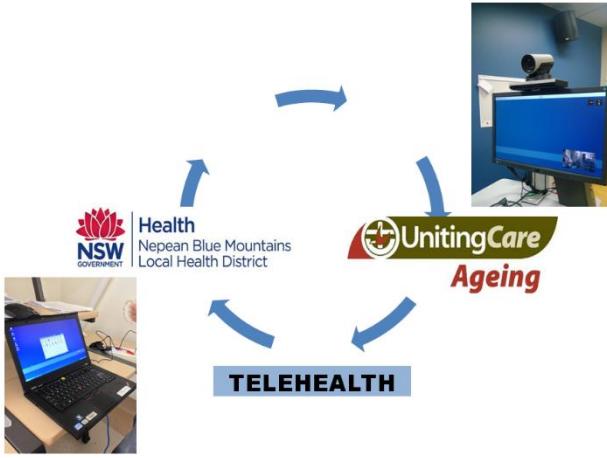
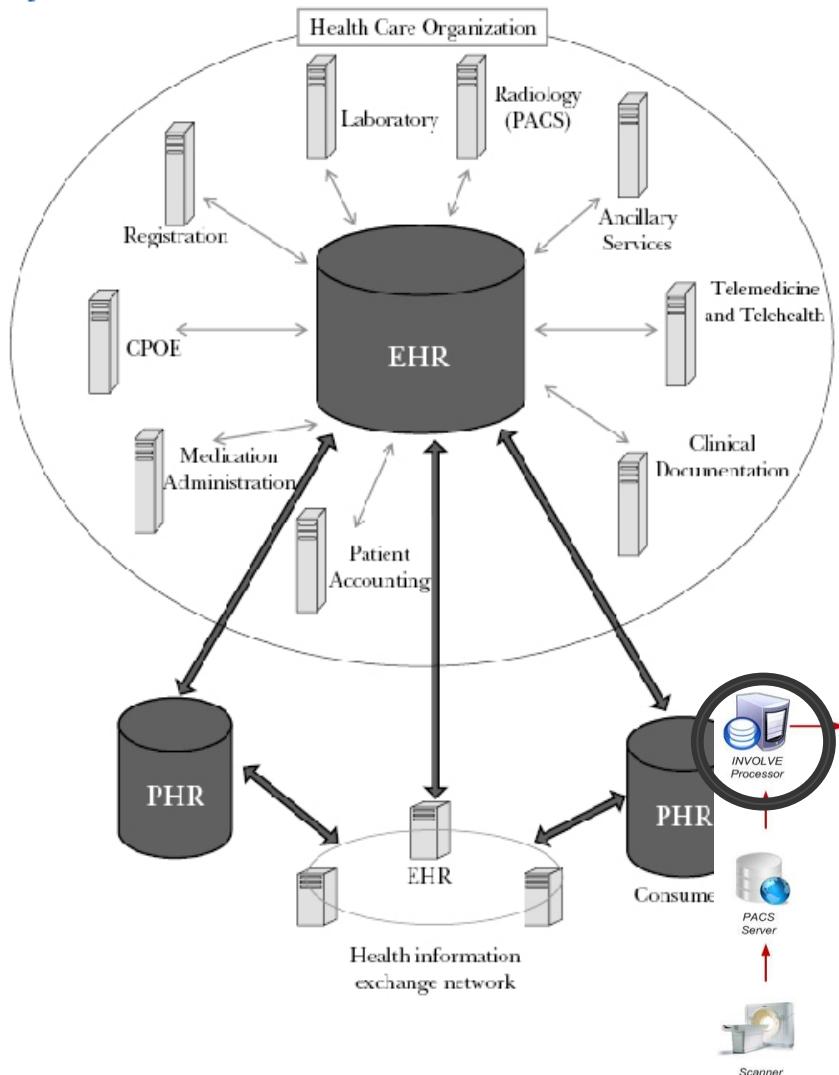
Health
Nepean Blue Mountains
Local Health District



Pediatric Obesity Clinic App

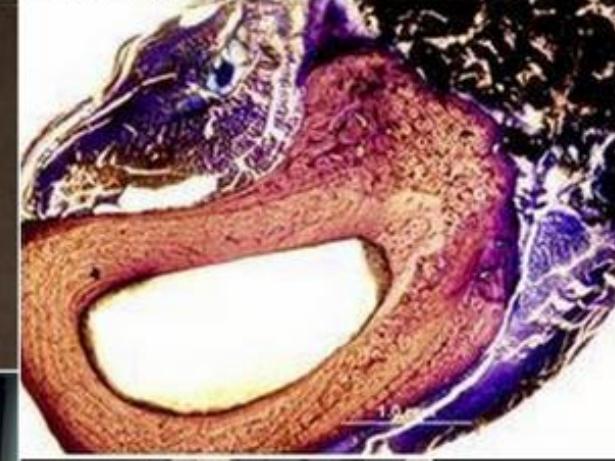
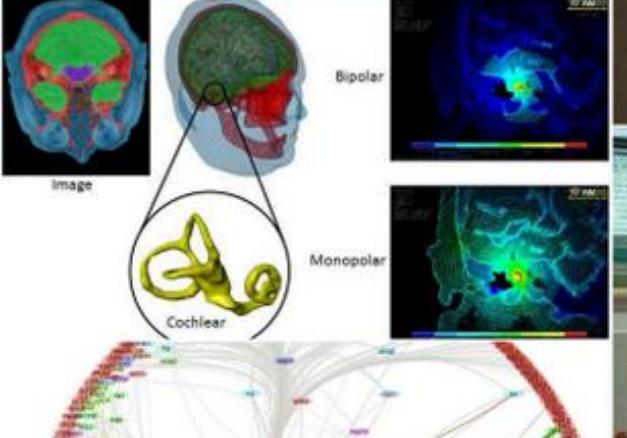
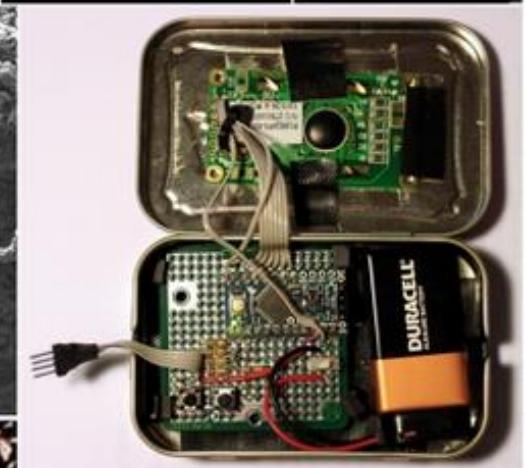
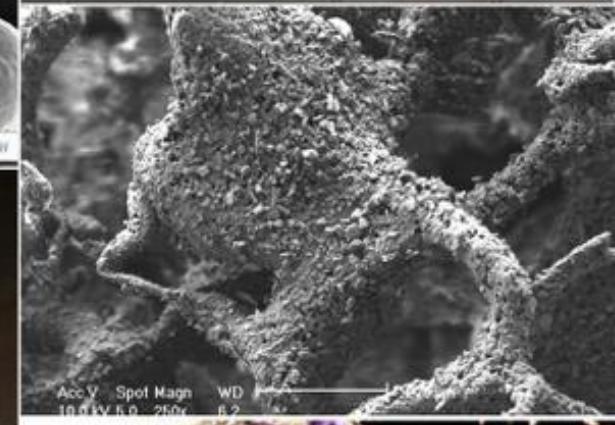
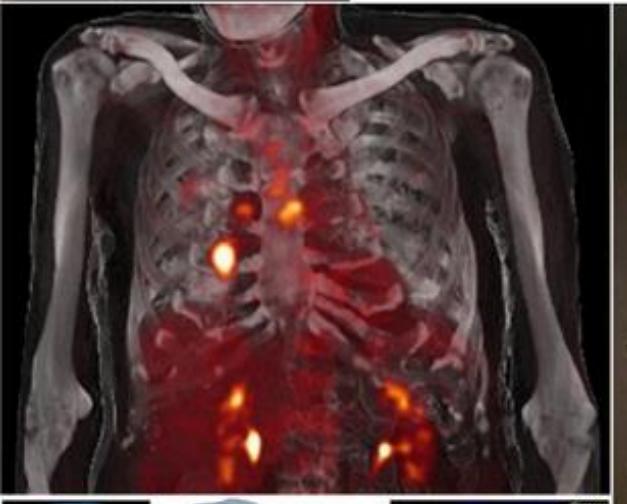
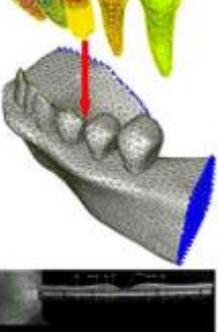
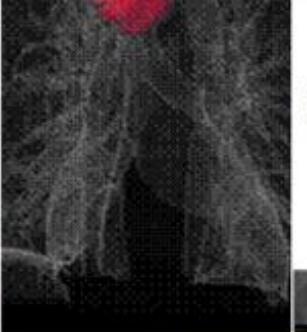
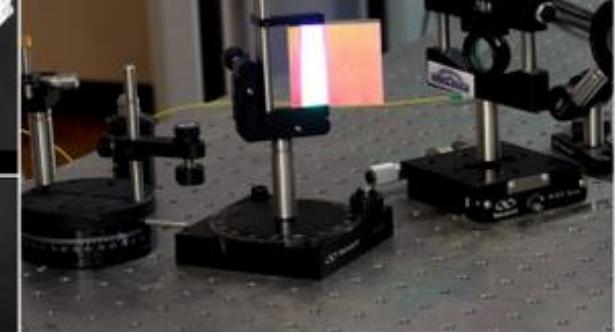
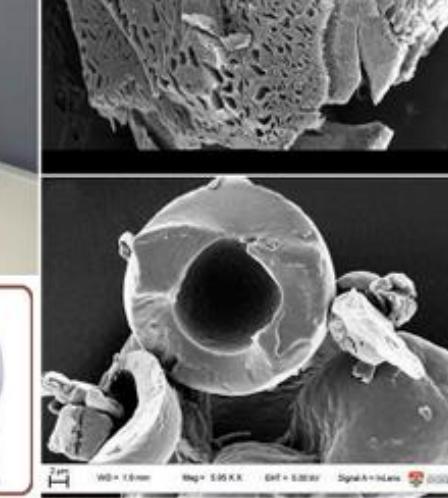


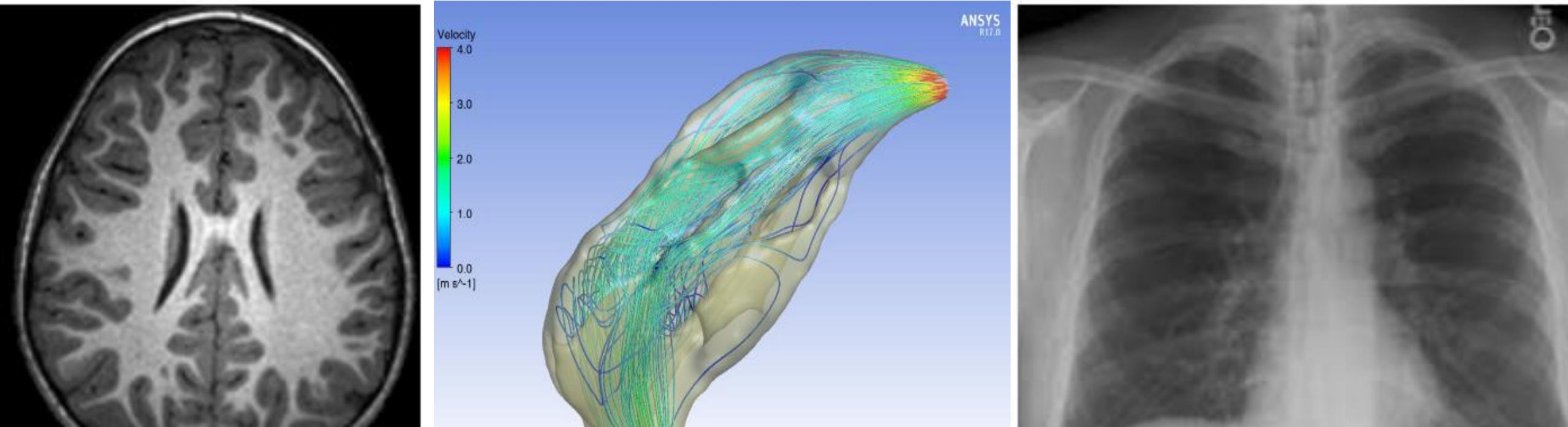
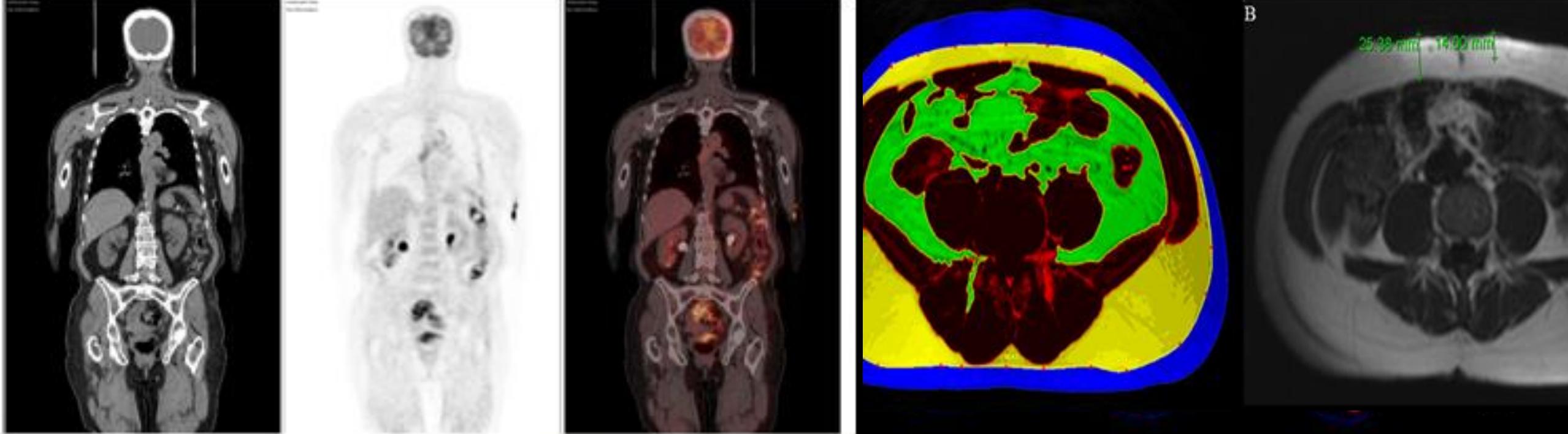
INFO5306 – Enterprise Healthcare IS





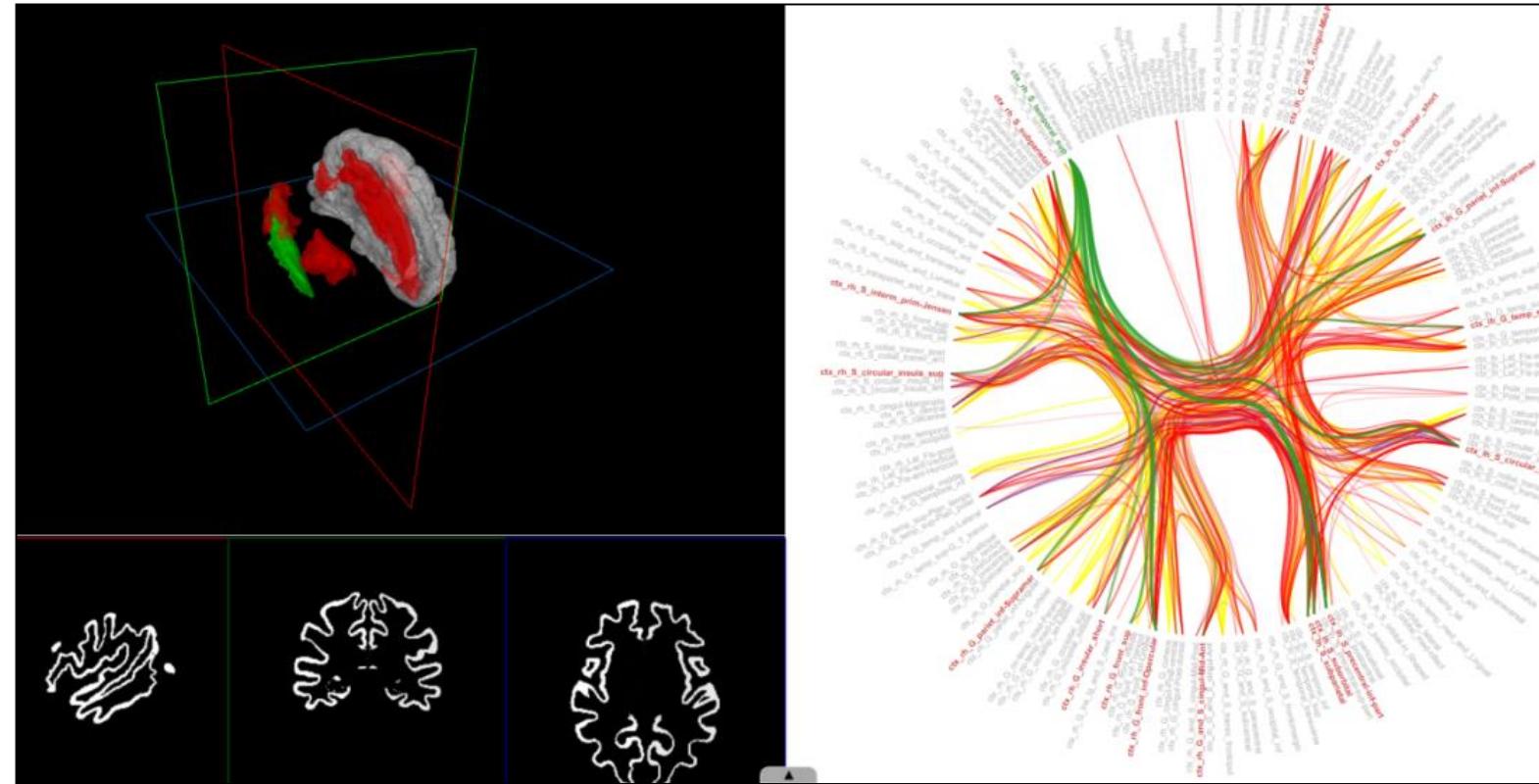
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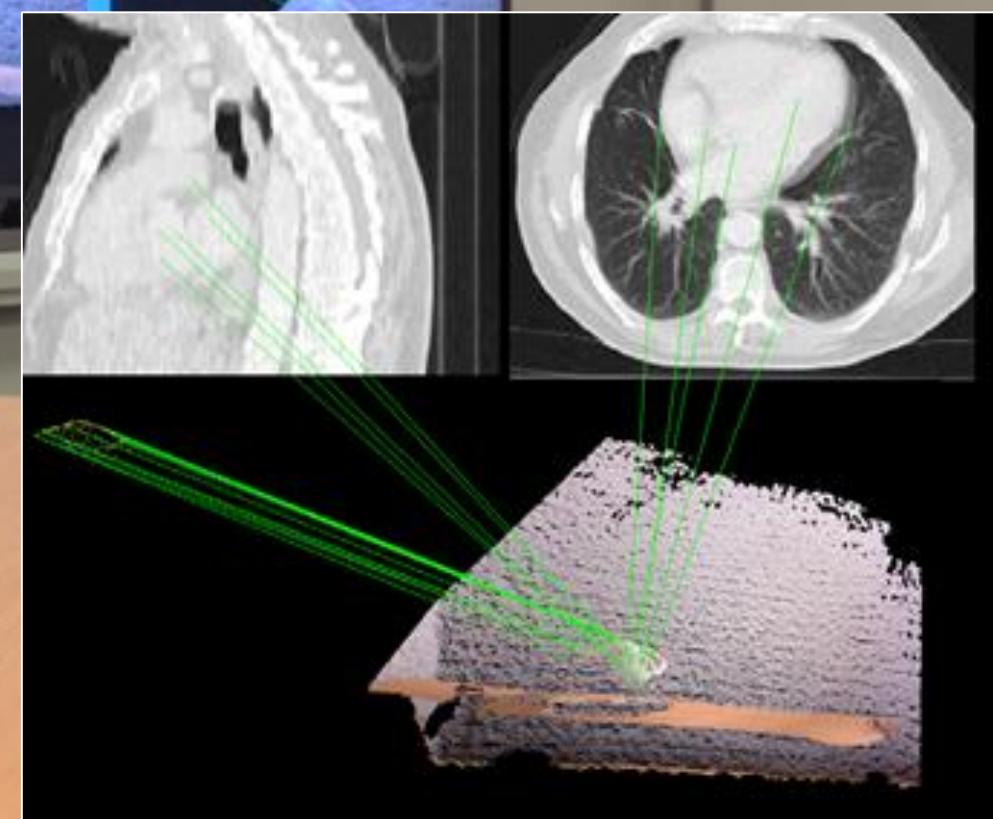
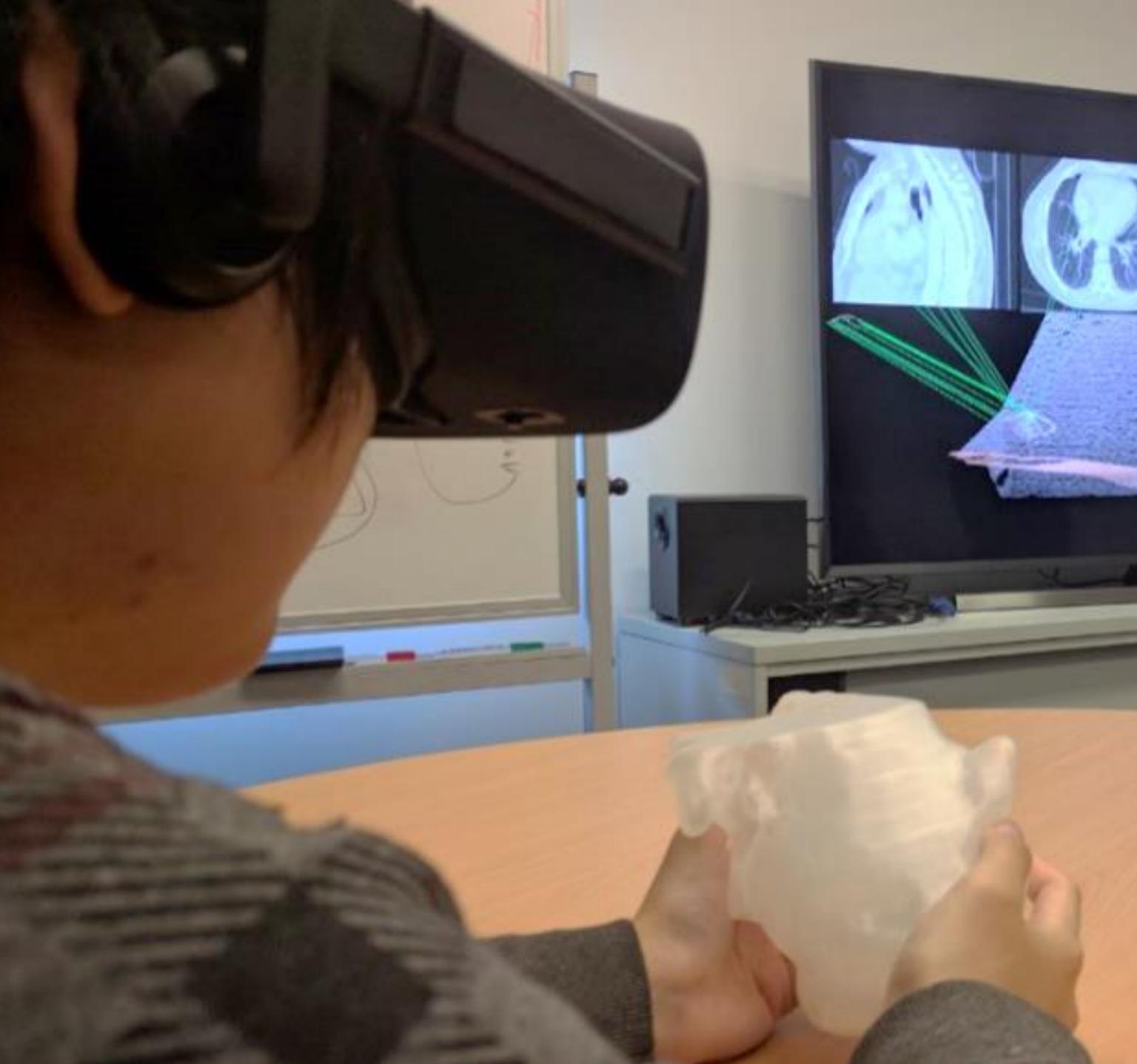


Visual Abstraction for Image Similarity Matching

- Represent image features on a ‘Abstracted’ layout.
- Using this abstraction in image retrieval, to supplement traditional features.







Thanks!

