



**CSC**

# The Future of the Australian ICT Industry

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CSC Australia | Asia  
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A photograph of a roller coaster track against a cloudy sky. The track is made of dark metal and is supported by a complex lattice structure of vertical and diagonal beams. The track curves upwards and then downwards, creating a sense of height and movement. The sky is a pale, overcast blue-grey.

What will be the next high-growth information and communications technologies?

What opportunities...

..and **DISRUPTIONS**..  
lie ahead ?

# Broad Technology Trends

	From	To
Core Infrastructure	Expensive, Fragile, Labour Intensive	Robust, Agile, Cheap, Invisible, As-a-Service
Network	Brittle, Messy, Non-Secure, Inconsistent	Secure, Reliable, Wireless, Broadband, Ubiquitous, As-a-Service
Devices	Power Hungry, Limited Functions, Corporate Provisioned	Always-On, Connected, Smart, Personal Choice, As-a-Service
Application Development	Expensive, Complex, Time-Consuming, Non-Intuitive	Fast, Cheap, Standardised, Visualised, As-a-Service
Applications	Expensive, Monolithic, Rigid, Occasional Disruptive Upgrades	Cheap, Modular, Standardised, As-a-Service

# What Really Happened!

1

- Implementing/Improving Business Intelligence

Upgrade networks to support higher bandwidth rich content mix of Voice/Data (VoIP)

2

- Upgrade/Enhance Business Applications

Continue efforts in SOA cross-enterprise (integration)

3

- Upgrading/Replacing Front-ending Legacy Systems

Continue to improve IT security systems

4

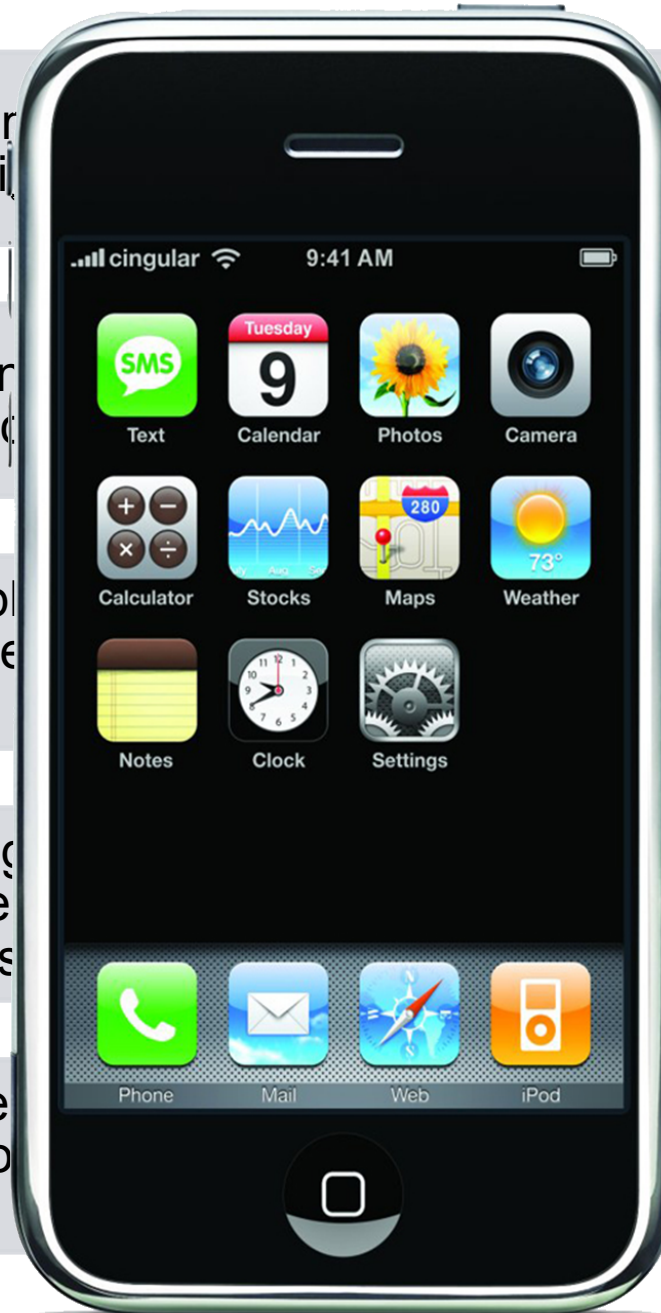
- Refine Sourcing Strategies (alternate delivery models)

Improve management of IT structure (tools, ITIL processes...)

5

- Upgrade Server Storage (consolidate, virtualize)

Implement collaboration technologies





# The Locus of Innovation in IT has Changed



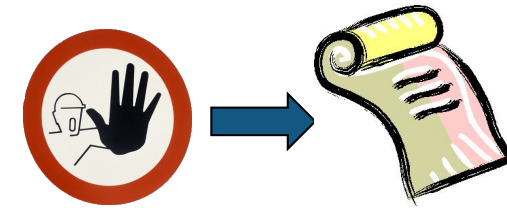
# Consumerised IT: Areas of Focus in the Enterprise



Browser-based apps



Collaboration



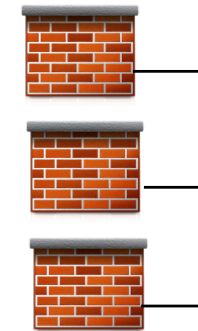
Policies, Monitoring, Reporting  
Rather than Bans and Controls



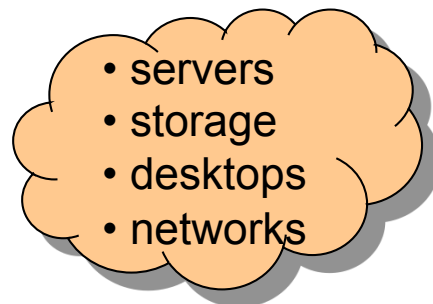
Mashups/Mashapps



Employee choice & responsibility



Redraw the firewall



Virtualisation & Cloud

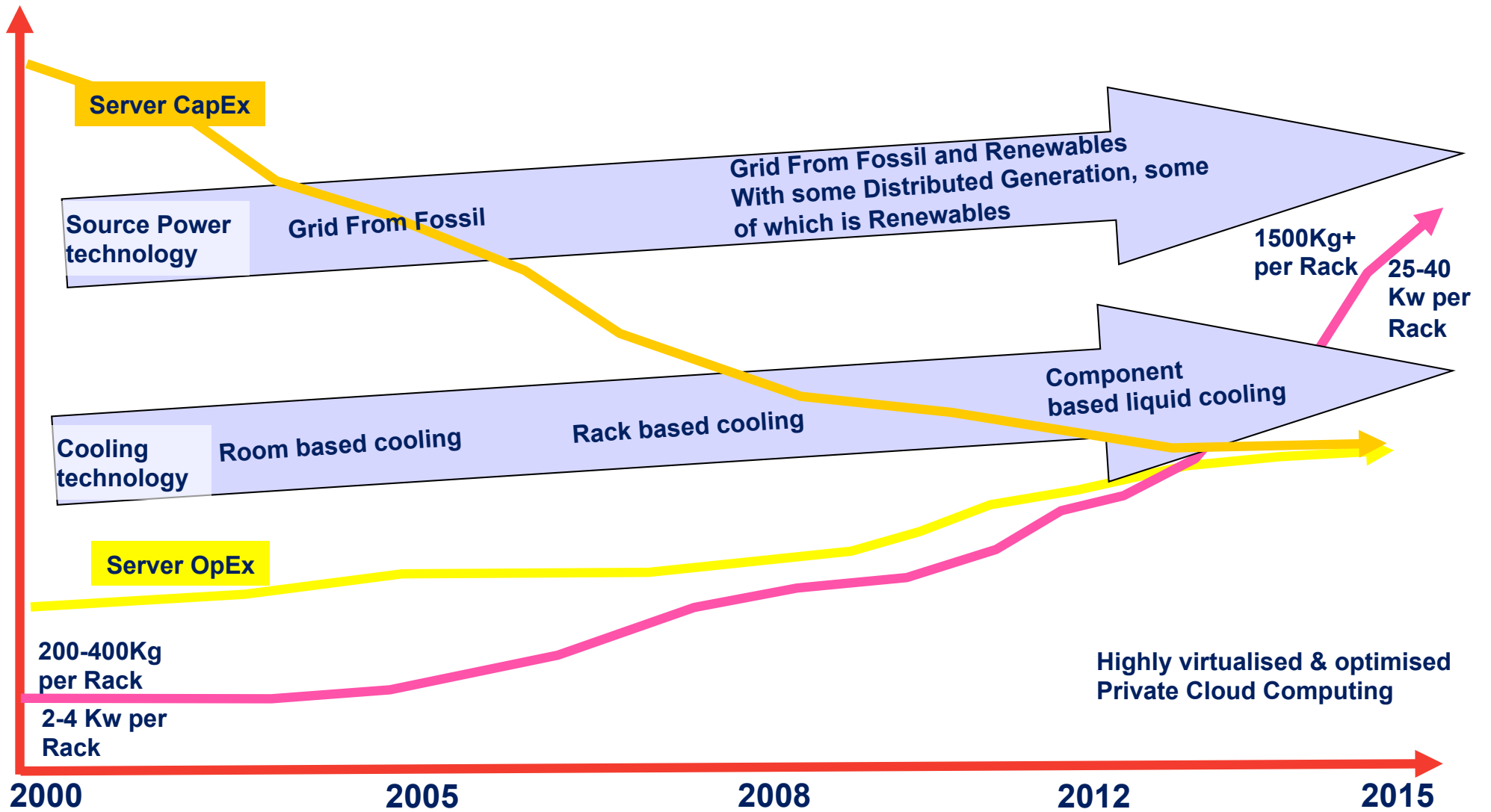


Internet standards & open source



Mobility, Remote,  
Distance, Devices

# Infrastructure Challenges



# Defining the Cloud Computing Model

Cloud computing is a model for enabling on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction OR simply

**NIST**

*“Low Cost Flexible Entry and Exit”*

## Characteristics



*Service-based; consumer concerns are abstracted via service interfaces*



*Metered by use; services tracked by usage metrics that enable multiple payment models*



*Scalable and elastic; services flex on demand to add or remove resources as needed*



*Shared; services dynamically allocated from a pool to gain economies of scale*



*Broad Network Access; using Standard Internet Protocols*

## Service Types

### Business Process as a Service (not part of NIST)

Entire Business process as a service in the cloud, usually involving people  
Likely procured by BU Executives

### Software as a Service

Finished applications that you rent and customize  
Likely procured by BU, IT Executives

### Platform as a Service

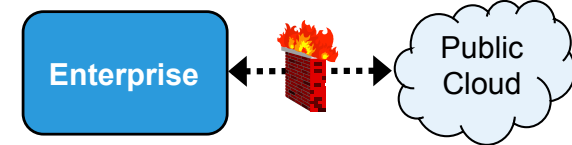
Developer platform that abstracts the infrastructure, OS, and middleware for developer productivity  
Likely procured by Development

### Infrastructure as a Service

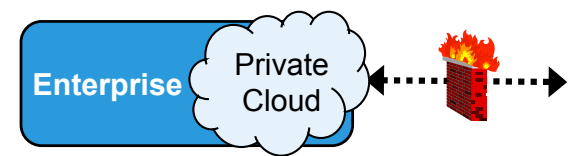
Deployment platform that abstracts the infrastructure  
Likely procured by IT

## Deployment Models

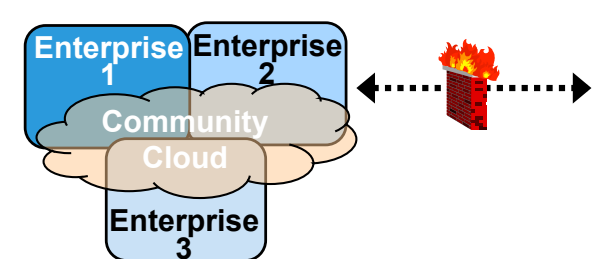
### PUBLIC



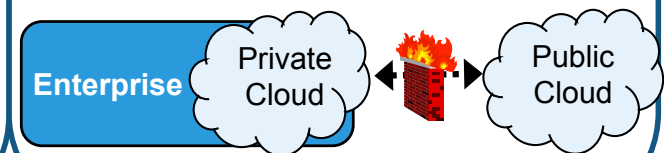
### PRIVATE



### COMMUNITY

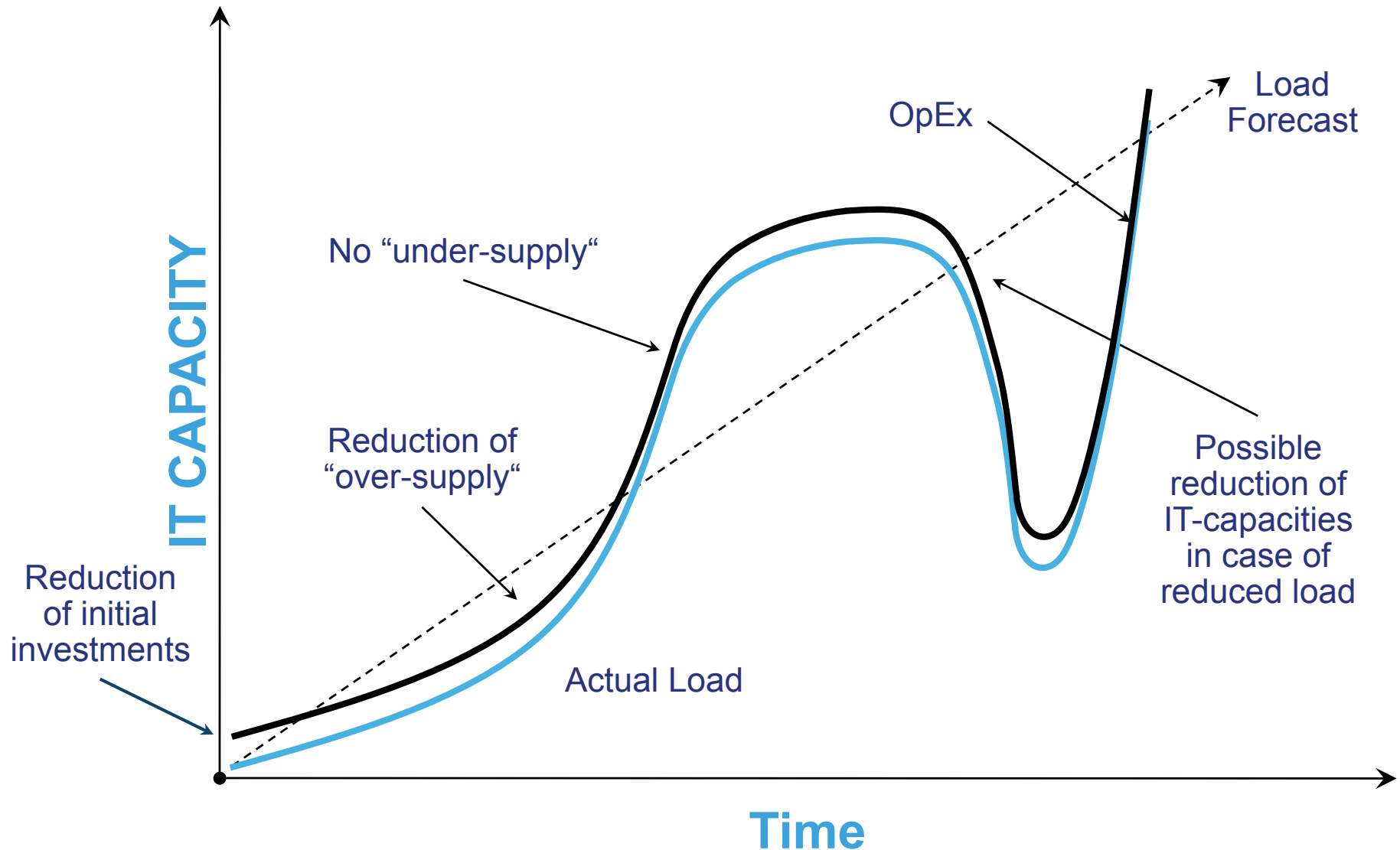


### HYBRID





# Cloud Computing – IT Value Directly Connected to Business



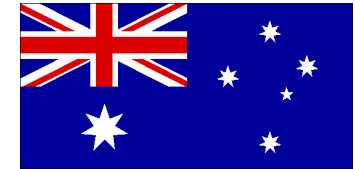
# Some Tech-enabled Business Trends

- **Open Innovation and Co-Creation**
  - Involving customers, partners, suppliers – the broad eco-system of the business
  - Taking advantage of Web 2.0 concepts
  - Extend beyond full-time employees for assistance
  
- **Global Collaboration and Delivery**
  - Broadband-enabled video conferencing, telepresence
  - Real time translation capabilities (text and ultimately voice)
  - Offshore, onshore, nearshore, at home pools of talent
  
- **Trillions of connected 'things'**
  - RFID, devices, chips, sensors, actuators – all connected
  - Assets, products, physical items, people – remote, mobile
  - The underpinnings of the 'smart' economy
  
- **Sustainability**
  - Replace atoms with bits
  - Leverage Green IT, broadband networks
  - Carbon-based accounting systems

# Some Tech-enabled Business Trends

- **Analytics and big data**
  - A tsunami of incoming data leading to capability and insight gaps
  - New techniques for handling 'big data' become mainstream
  - Analytics, predictive forecasting, data mining services proliferate
  
- **Emerging market 'blowback'**
  - Innovation at the 'bottom of the pyramid' moves upwards
  - What works in constrained economies can work even better in developed markets
  
- **Everything is a 'service'**
  - Opex, pay-as-you-go, standardised, automated, abstracted, self-service
  - Different types of public cloud: high-availability, low-cost, secure, close, high performance, ITIL-ESM integrated, vertical industry specific, commercial, consumer, test and development, high-bandwidth...
  
- **Intelligent devices**
  - Intuitive, interactive, fun, visual – dizzying array of form factors, features
  - Augmented reality, un-tethered workforce

# Australia's ICT SWOT



## Strengths

- Strong Education system
- Early adopters of technology
- Highly skilled work-force
- Proximity to Asia
- Good infrastructure (but can be better)
- Low risk environment
- First world legal and administrative systems
- Cultural affinity with America, Asia and Europe

## Weaknesses



- Local IT firms lack critical mass, international presence
- No Australia 'ICT' branding
- Too easy to be comfortable just in Australia
- Tax system relatively unfriendly towards innovation
- Low profile of tech industry, declining graduate intake
- Few role models outside of sport, celebrity
- Geographic isolation from US and Euromarkets
- High labour costs relative to Emerging Asia
- Curriculums vs lateral think, questioning education
- Extremely weak R&D by Australian business



## Opportunities

- Industry, academic and government collaboration
- IT Services, BPO & KPO
- Potential for NBN to inspire
- Consumer-oriented web/mobile-based offerings
- Vertical and niche software solutions
- Exploit FTA opportunities
- Services-based experiences for Asia
- Leverage huge funds under management

## Threats

- Competition from emerging economies
- Currency volatility/rise against others
- Exclusion from regional trading blocs
- Risk of global and regional instabilities
- Continual brain drain (Australians adapt well)





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