Thriving in a digital economy

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With Significant Thanks to CSIRO
We live in a world with bountiful yet finite resources*

The world population is forecast to grow from 7.2 billion people today to 8.1 billion in 2025 and 9.6 billion by 2050.

Source: United Nations
Basic Expectations

24% < US$1.25/day (47% in 1990)

33% of people in urban slums

15.5 percent of the world’s population (1 billion) hungry

United Nations, 2012
Australia is a big player in mining
More From Less With declining ore grades

The world must produce more food in the next 50 years than in the previous 500 years if it is to feed itself.

Data source: International Food Policy Research Institute, Global Hunger Index
2007/08 Price Spike
Between 75 - 130 million people became malnourished (Headey, 2011).

From 2003 to 2007, the number of undernourished people increased from some 848 million to 923 million, largely because of the food-price crisis during this period (FAO, 2008).

Between 75 - 130 million people became malnourished (Headey, 2011).
and as a reminder .. we live on the driest continent on Earth
A country of extremes..

Insurance losses due to extreme weather events over last 40 yrs
(Source: Risk Frontiers Analysis of ICA Data)
We are all living longer
But we are retiring at the same age

We are experiencing more chronic disease
We have higher expectations
It costs more to treat each one of us each year

Chart 4.5: Total Australian government health expenditure with and without non-demographic growth (in 2009–10 dollars)

Source: Treasury projections.

Chronic disease
new treatments

Ageing
population
Australia's Demographic Profile

Source: Australian Bureau of Statistics

Source: Treasury projections based on data from the Australian Institute of Health and Welfare. Tax held constant as a share of GDP. Based on current arrangements at the time of the 2010 Intergenerational Report.
This is the Asian Century
and Australia has been riding on a new Silk Highway
The Silk Highway  A Shifting World Economy

dynamics of the global economy’s centre of gravity, the average location of economic activity across geographies on Earth taking into account all the GDP produced on this planet.

Source: Quah, 2011; Global Policy
In Queensland 58% of employees (1.1 million people) have a flexible work arrangement of some type. This includes 13.3% (253,000 people) working from home.
In Australia they cost $10,000 to $20,000 per month.
Australia is a services economy

With declining growth in productivity
The “Game Changers”

Big Data and Analytics

Open Data

Linked Data

Cloud

Digitise Link Model Predict Optimise

Locally relevant
Globally aggregated data sets

SIRCA Technology
Business. Data. Intelligence.

19
We can ask questions about the world around us that we have never been able to ask before.

We can know things about the world that we have never known before.

Your business is already more digital than you think.
Digitise ... The real world can be brought into the virtual world..
Every transaction
From every market
Every day
2 million transactions per second
Petabytes of data

Model... Health Example

Understanding Patient Flow

www.csiro.au/patientflow
DHS have more than 3500 calls per hour
In that hour people lose their job, suffer a death in the family, become separated
These can be very damaging and expensive
How to identity and deal effectively with these life changing events?

Predict... DHS Example, Trigger Points
Optimise... Going beyond planning and operations

Boeing Maintenance Example

- Demand Forecasting
- Strategic Planning
- Tactical Planning
- Operations
- Disruption management
- Performance Optimisation

Unfilled Orders by Model

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<th>Unfilled</th>
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What is currently happening and emerging
- Complex event processing
- Streaming data
- Real time rescheduling

Car crash rate anomaly detection
Anomalies in traffic signal data
Rescheduling of resources
Potline sensing and control

Digitise Link Model Predict Optimise
Innovation in financial services?

- How do I minimise risk?
- How do I deliver more?
- How do I personalise my offerings?
- How do I adapt to the problems I know are coming?
- How do I protect privacy?
- Who is the grown up in the room?
**Embrace Innovation**

**Traditional**
- End to end control
- Specify, specify, specify
- De-risk
- Governance mandate
- Privacy, privacy, privacy

**The Future**
- Focus on highest value
- Allow others to build on your offerings
- Support real time awareness
- Optimise response
- Review & save results
- Discard non-core data
A couple of research questions

"Superannuation and the Economy", "Australians Over 60“

what are the optimal forms of asset allocation by super funds,

and

how will this impact on economic growth as the pool of funds under management grows ever larger.
Sense-T - a Digitally-Enabled Economy ..creating an internet of things to helping farmers, fishers, fire-fighters and foresters
We live in a big country

With a small population

Your business is already part of the digital economy.

Focus on where you add the most value

In the digital economy, distances shrink.

In the digital economy, there is no such thing as the “middle of nowhere”

In the digital economy, you cannot own the process end-to-end.
Everything should be made as simple as possible, but no simpler.

Albert Einstein

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